

Research Article

Building a Green Future: The Role of Environmental Accounting in the Public Sector

Agus Kurniawan*, Heni Verawati

Universitas Islam Negeri (UIN) Raden Intan Lampung, Indonesia

ORCIDAgus Kurniawan: <https://orcid.org/0000-0001-5971-4663>**Abstract.**

This article aims to understand the role of environmental accounting in the public sector and how it can contribute to the development of a green and sustainable future. Using a qualitative approach and research instruments such as interviews and document analysis, this study finds that environmental accounting can be an important strategic tool for the public sector. In this context, environmental accounting can assist in (1) Informing decision-making by providing relevant information on the environmental costs and benefits of various actions and policies. (2) Increasing transparency and accountability by reporting on the environmental impacts of public sector activities. (3) Identify opportunities for efficiency and savings by tracking and analyzing resource use. (4) Encourage innovation by highlighting opportunities for the development of new processes or products that are more environmentally friendly. (5) And, support the achievement of sustainable goals by assisting in setting, tracking, and achievement of sustainable goals. This research contributes to our understanding of the strategic role of environmental accounting in promoting sustainability in the public sector, demonstrating that its adoption can help build a green and sustainable future.

Keywords: environmental accounting, public sector

Corresponding Author: Agus
Kurniawan; email:
aguskurniawan@radenintan.ac.id

Published: 17 May 2024

Publishing services provided by
Knowledge E

© Kurniawan, Verawati. This article is distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use and redistribution provided that the original author and source are credited.

Selection and Peer-review under the responsibility of the ICIEBDS Conference Committee.

1. Introduction

Environmental accounting has become a field that has received increasing attention in the last decade. This context is reinforced by recent research by [1], which emphasizes that environmental challenges such as climate change require a more active and integrated response from the public sector. In this regard, environmental accounting is emerging as a tool with great potential to assist the public sector in tracking and reducing their environmental footprint, as well as facilitating the transition towards a sustainable green economy [2], [3].

However, the application of environmental accounting in the public sector is still relatively uncharted territory [4]. Recent studies by de Sousa and Huy show that there

OPEN ACCESS

are still significant challenges in the implementation and use of environmental accounting information in public sector decision-making [5], [6]. However, they also stressed that increased awareness and new technologies could pave the way for significant improvements in this field.

The novelty of this research lies in its focus on how environmental accounting can be used as a strategic tool by the public sector to build a green and sustainable future. Although several studies have discussed the role of environmental accounting in business and industry, research on its application in the public sector is still limited. Taking into account the important role played by the public sector in addressing environmental challenges, this research seeks to fill this knowledge gap.

As such, this research seeks to answer the following question: How can the public sector utilize environmental accounting to achieve their environmental objectives? And what are the challenges and opportunities in implementing it? By answering these questions, this research hopes to provide new and important insights that will assist the public sector in its quest for a greener and more sustainable future.

2. Literature Review

Environmental accounting is a sub-discipline of accounting that focuses on delivering relevant and accountable environmental information to various stakeholders [3], [7]. This includes measuring, recording, and reporting environmental costs and benefits, in either monetary terms or physical metrics. Through this method, organizations can better understand and control their environmental impact, facilitating more sustainable decision-making.

The application of environmental accounting in the public sector, however, is still a relatively new field and is not fully understood. As explained by [8], [9], environmental accounting in the public context has the potential to support more sustainable and transparent public decision-making. It can assist in measuring and reporting on the environmental performance of various public policies and programs, as well as assisting in the efficient and effective allocation of public resources.

However, there are also challenges to overcome. Cox and Reap note that these challenges include data limitations, organizational resistance to change, and difficulties in measuring and valuing environmental impact in monetary terms [10], [11]. Nonetheless, the authors stress that with increased awareness, technological innovation, and pressure from stakeholders, the role of environmental accounting in the public sector is likely to continue to evolve and expand.

Taking into account these potentials and challenges, this research focuses on how environmental accounting can be used more effectively in the public sector to support green and sustainable development.

3. Methods

To achieve the objectives of this study, this study will use a qualitative approach. This approach was chosen because it allows researchers to gain an in-depth understanding of how environmental accounting is used in the public sector and the challenges and opportunities that exist.

Data will be collected through a series of in-depth interviews with relevant stakeholders in the public sector, including government officials, public accountants, and environmental experts. This interview will focus on how environmental accounting is currently used in their organization, how this information is used in decision-making, and what obstacles or challenges they face. In addition, the interview will seek an understanding of how environmental accounting can be more effectively used in the public sector.

Data from interviews will be analyzed using thematic content analysis. This involves coding and categorizing data to identify emerging themes and patterns. This process will help to highlight the key ways in which environmental accounting can support the public sector in achieving its environmental goals, as well as the main challenges that need to be addressed.

This research will follow the principles of strict research ethics. All participants will provide informed consent before participating and they will be given assurance that all information they provide will be kept confidential and used only for this research.

Using this approach, this research hopes to provide valuable insights into how environmental accounting can be more effectively used in the public sector to support sustainable development.

4. Results and Discussion

Environmental accounting has the potential to become a powerful strategic tool for the public sector in its quest to build a green and sustainable future. The following are some of how environmental accounting can be used in this capacity:

Inform Decision Making: Environmental accounting can provide important information that can be used by public officials to make decisions that have a positive impact on the environment. This could include information about the environmental costs of various actions or policies, or about the potential environmental benefits of a particular investment. With this information, public officials can make more informed and sustainable decisions. Environmental accounting has a crucial role in informing decision-making, especially in the public sector. By utilizing the data and information generated by environmental accounting, public officials can make more effective, efficient, and sustainable decisions. Here is a more extensive discussion:

1. (a) **Inform Investment Decisions:** Environmental accounting can help public officials understand the environmental impact of various types of potential investments. For example, if the public sector is considering investing in a renewable energy project or a green infrastructure project, environmental accounting can provide a clear picture of the potential environmental benefits of the investment. This could include reducing greenhouse gas emissions, improving air quality, or protecting natural resources.
- (b) **Guiding Policy and Regulation:** Environmental accounting can also serve as a valuable tool in policy-making and regulation. By understanding the environmental costs associated with certain activities, public officials can formulate policies and regulations that encourage more sustainable practices. For example, if an analysis of environmental accounting shows that an industry has a significant environmental impact, regulations or policies can be introduced to encourage companies in that industry to reduce their impact.
- (c) **Optimizing Resource Usage:** Environmental accounting can also help the public sector optimize the use of its resources. By understanding the environmental impact of using certain resources, the public sector can make more informed decisions about how and where those resources should be used. For example, if environmental accounting shows that water use has a significant environmental impact, the public sector can look for ways to reduce water use or use water sources more sustainably.

As such, environmental accounting provides a valuable framework for making more informed and sustainable decisions within the public sector. By leveraging the information and insights provided by environmental accounting, the public sector can move forward toward a greener and more sustainable future.

Improving Transparency and Accountability: Environmental accounting can also help the public sector become more transparent and accountable for their environmental impacts. By reporting publicly on resource use and emissions, the public sector can demonstrate its commitment to sustainability and build trust with society. Transparency and accountability are two key principles of good governance and resource management, and environmental accounting plays an important role in supporting both in the public sector context. Here are some specific ways environmental accounting can contribute:

1. (a) **Reporting Environmental Impact:** By using environmental accounting methods, public sector organizations can track and report their environmental impacts more accurately and comprehensively. This may include greenhouse gas emissions, water and energy consumption, or impacts on biodiversity. By publicly reporting this information, these organizations can demonstrate to their communities that they understand and are responsible for their environmental impact.
- (b) **Improving Accountability:** Through the use of environmental accounting, public sector organizations can set specific environmental goals, measure their progress against those goals, and report the results to the public. This not only helps these organizations to become more accountable for their actions but can also drive improved environmental performance.
- (c) **Encouraging Public Participation:** By increasing transparency through environmental accounting, the public sector can also encourage public participation in decision-making processes. For example, by reporting on the environmental impacts of various policies or projects, the public sector can provide citizens with an opportunity to provide input and participate in debates about how best to manage resources and achieve environmental goals.

Thus, environmental accounting is not only a tool for measuring and reporting environmental impacts but also an important mechanism for promoting transparency, accountability, and public participation in the public sector. This, in turn, can help build public trust and encourage more sustainable action.

Identifying Opportunities for Efficiency and Savings: Environmental accounting can help the public sector identify opportunities to improve efficiency and save costs. For example, by tracking and analyzing energy use, the public sector can identify areas where energy use can be reduced or used more efficiently. Environmental accounting can play a significant role in guiding the public sector to achieve efficiency and savings.

By providing in-depth data and analysis of resource use and impact, environmental accounting can help highlight opportunities for increased efficiency and cost savings. Here are some specific ways how this could happen:

1. (a) **Increases Energy Efficiency:** By monitoring and analyzing energy use, environmental accounting can help highlight areas where energy is being used inefficiently and where improvements can be made. For example, if a government building uses a large amount of energy, environmental accounting may show that better insulation, energy-efficient lighting, or a more efficient heating or cooling system can reduce energy use and associated costs.
- (b) **Reducing Waste and Increasing Resource Efficiency:** Environmental accounting can also help the public sector identify ways to reduce waste and use resources more efficiently. For example, by tracking water use, an organization may be able to find ways to reduce or recycle water, resulting in cost savings.
- (c) **Driving Innovation and Best Practices:** By providing insight into how and where resources are used and the environmental impact of those uses, environmental accounting can stimulate innovation and the adoption of best practices. For example, if data shows that a particular process or operation has a large environmental impact, this can stimulate efforts to find and implement greener and more efficient solutions.

As such, environmental accounting can be an invaluable tool in helping the public sector identify and seize opportunities to increase efficiency, reduce costs, and contribute to their sustainable goals.

Driving Innovation: Environmental accounting can encourage innovation by highlighting opportunities for the development of new products or processes that are more environmentally friendly. By looking closely at the environmental impact of their activities, the public sector may be able to find new ways of doing things that produce better outcomes for the environment. Environmental accounting can serve as an important catalyst for innovation, particularly within the public sector. By providing in-depth knowledge of the environmental impact of various activities, environmental accounting can highlight areas where there is room for the development and implementation of more sustainable and environmentally friendly solutions. Here are some ways this can happen:

1. (a) i. **Development of New Policies and Processes:** Through a better understanding of the environmental impacts of current activities and processes,

the public sector can design and implement new policies and processes that reduce these impacts. For example, if the analysis indicates that the use of service vehicles has a significant environmental impact, the public sector may decide to promote the use of electric vehicles or vehicle sharing as a more sustainable alternative.

- ii. **Introduction of New Technologies:** Environmental accounting can facilitate the adoption of new technologies that are more environmentally friendly. For example, if the analysis shows that heating and cooling of buildings is a significant source of carbon emissions, this could encourage investment in more efficient and sustainable heating and cooling technologies.
- iii. **Drivers for Collaboration:** By highlighting environmental issues and the need for more sustainable solutions, environmental accounting can encourage collaboration between different departments within the public sector, as well as between the public, private, and civil society sectors. This collaboration can generate new and innovative ideas to reduce environmental impact and achieve sustainable goals.
- iv. Thus, environmental accounting not only provides important insights into the status quo but can also help drive innovation and positive change toward greater sustainability within the public sector.

Supporting the Achievement of Sustainable Goals: Finally, environmental accounting can play an important role in helping the public sector achieve its sustainability goals. By providing a clear understanding of their environmental impact, environmental accounting can help the public sector set and track valuable objectives and sustainability, and plan and execute strategies to achieve those goals.

Environmental accounting can play an important role in helping the public sector achieve its sustainability goals. By understanding the environmental impact of their activities, the public sector can plan and implement more sustainable strategies. Here are some specific ways how this could happen:

1. (a) i. **Sustainable Goal Setting:** Environmental accounting can provide a solid basis for setting sustainable goals. By understanding current environmental impacts, organizations can set realistic and meaningful goals to reduce those impacts. For example, if an environmental accounting analysis shows high levels of carbon emissions, the public sector can set goals to reduce those emissions over a certain period.

- ii. **Progress Tracking:** Once sustainable goals are set, environmental accounting can be used to track progress towards those goals. By regularly collecting and analyzing data, the public sector can assess whether they are moving in the right direction and make adjustments where necessary.
- iii. **Strategy Planning and Implementation:** Environmental accounting can also assist in planning and implementing strategies to achieve sustainable goals. By understanding where and how environmental impacts occur, the public sector can plan the most effective interventions and allocate resources most efficiently.
- iv. **Communication and Reporting:** Finally, environmental accounting can assist the public sector in communicating its commitment to and progress toward sustainability. By providing verifiable and reliable data, environmental accounting can increase the credibility of sustainability communications and build trust with stakeholders. Thus, environmental accounting can play an important role in supporting the public sector in its journey towards sustainability.

In conclusion, environmental accounting can be an invaluable strategic tool for the public sector in its quest to create a greener and more sustainable future. By using the information and insights provided by environmental accounting, the public sector can make better decisions, increase transparency and accountability, identify opportunities for efficiency and savings, encourage innovation, and support the achievement of their sustainable goals.

The results of this research can make an important contribution to our understanding of the role of environmental accounting in the public sector in several ways:

1. (a) i. **Disclose the Implementation of Environmental Accounting:** This research provides new insights into how environmental accounting is applied in public sector practice. By understanding these unique ways, we can better understand how this tool can be utilized more effectively.
- ii. **Understanding Challenges and Obstacles:** This research also clarifies the challenges and obstacles faced by public sector organizations in implementing environmental accounting. With this understanding, strategies can be developed to overcome these barriers and facilitate wider and more effective adoption of this practice.

- iii. **Opportunity Identification:** By highlighting opportunities for increasing the use of environmental accounting, this research can help public sector organizations better harness their strengths as a strategic tool for sustainable development.

Regarding the implications for the future, the results of this study show that environmental accounting has great potential to help the public sector achieve its goal of more sustainable and green development. By highlighting the opportunities and challenges that exist, this research can help guide future efforts to increase the use of environmental accounting in the public sector.

In addition, this research may also encourage further dialogue and collaboration between the public sector and researchers in this field, helping to ensure that the most current knowledge and practice in environmental accounting is used to maximum advantage.

Finally, the results of this research can also serve as a call for policymakers and other stakeholders to support and encourage the further adoption and use of environmental accounting within the public sector, to achieve a greener and more sustainable future.

5. Conclusion

This research has demonstrated how environmental accounting can serve as a strategic tool within the public sector to create a green and sustainable future. Through the use of environmental accounting, public sector organizations have the potential to make more informed decisions, increase transparency and accountability, identify opportunities for efficiency and savings, encourage innovation, and support the achievement of their sustainable goals. Despite these challenges and obstacles, this research highlights the important opportunities that exist and reinforces the need for ongoing dialogue and collaboration between the public sector, researchers, and other stakeholders to maximize the benefits of environmental accounting in efforts to create a more sustainable future.

References

- [1] Parker L. Constructing a research field: a reflection on the history of social and environmental accounting. *Soc. Environ. Account. J.* 2014;34(2):87–92.

- [2] Herbohn K. A full cost environmental accounting experiment. *Account Organ Soc.* 2005;30(6):519–36.
- [3] Hull RA, et al. Unlocking environmental accounting for healthy future landscapes. *People Nat.* 2022;4(5):1113–25.
- [4] Y. J. Ahnad and E. Lutz, “Environmental accounting for sustainable development,” 1989.
- [5] de Sousa RG, de Vasconcelos AF, Caneca RL, Niyama JK. Accrual basis accounting in the Brazilian public sector: empirical research on the usefulness of accounting information. *Rev Contab Finanç.* 2013;24(63):219.
- [6] Huy PQ, Phuc VK. The impact of public sector scorecard adoption on the effectiveness of accounting information systems towards the sustainable performance in public sector. *Cogent Bus. Manag.* 2020;7(1):1717718.
- [7] C. K. H. C. K. Kassim, “Social and Environmental Accounting Education: A Discussion,” 2014.
- [8] Gordon B. Public discourse and decision making. Exploring possibilities for financial, social and environmental accounting. *Account Audit Account J.* 2000;13(1):27–64.
- [9] Brown J, Fraser M. Approaches and perspectives in social and environmental accounting: an overview of the conceptual landscape. *Bus Strategy Environ.* 2006;15(2):103–17.
- [10] Cox TH, Blake S. Managing cultural diversity: implications for organizational competitiveness. *Acad Manage Perspect.* 1991;5(3):45–56.
- [11] Reap J, Roman F, Duncan S, Bras B. A survey of unresolved problems in life cycle assessment: Part 2: impact assessment and interpretation. *Int J Life Cycle Assess.* 2008;13(5):374–88.