



Redefining Local Budget Efficiency Through Green Accounting

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Abstract: Redefining Local Budget Efficiency through Green Accounting

Purpose: This study investigates the contribution of green accounting to the efficiency of budget improvement at the North Minahasa Regency Finance and Asset Agency following Government Instruction Number 1 of 2025.

Method: This was a descriptive qualitative study.

Results: The results showed that the efficiency rate of budgets achieved a figure of 64.38%, which is categorized as efficient; wherein, this was supported by strategies such as the implementation of document digitalization and also reduction in office supply use.

Novelty: This research is unique in its application of green accounting in local government budget management.

Contribution: This research adds to the literature by showing that green accounting practices can increase budget efficiency in local government institutions.

Kata kunci:

Efisiensi Anggaran;
Akuntansi Hijau;
Keuangan Daerah;
Akuntabilitas Publik;
Transparansi.

Abstrak: Mendefinisikan Ulang Efisiensi Anggaran Daerah Melalui Akuntansi Hijau

Tujuan: Penelitian ini mengkaji praktik akuntansi hijau berkontribusi meningkatkan efisiensi anggaran di Badan Keuangan dan Aset Kabupaten Minahasa Utara setelah diterbitkannya Instruksi Presiden Nomor 1/2025.

Metode: Studi ini menggunakan pendekatan deskriptif kualitatif.

Hasil: Hasil menunjukkan tingkat efisiensi anggaran sebesar 64,38%, yang dianggap efisien, didorong oleh strategi termasuk penerapan digitalisasi dokumen dan pengurangan penggunaan perlengkapan kantor.

Kebaruan: Keunikan penelitian ini terletak pada penerapan akuntansi hijau dalam pengelolaan anggaran pemerintah daerah.

Kontribusi: Penelitian ini berkontribusi pada literatur dengan menunjukkan bagaimana praktik akuntansi hijau dapat meningkatkan efisiensi anggaran pada instansi pemerintah daerah.



1. Introduction

The issuance of presidential instruction number 1/2025 about expenditure efficiency in the State Budget (*Anggaran Pendapatan dan Belanja Negara*), henceforth is referred to

as *APBN*) and Regional Budget (*Anggaran Pendapatan dan Belanja Daerah* henceforth is referred to as *APBD*) implementation indicates national attention on ineffective public spending, which is continually

affirmed through enactment of sustainable financial governance. This policy highlights the need for improving resources utilization, reducing operational waste and improving transparency and accountability in public sector financial management. In contrast, several local government institutions struggle to implement efficiency directives from the national level into systematic and quantifiable financial practices.

Indonesia has natural resources that significantly contribute to support its economy and national development. So far, the leading sectors for state revenues in Indonesia assets are mining commodities [1]. Article 33 Paragraph 3 of the 1945 Constitution also highlights the significance of sustainable management of natural resources, which should be managed for people's welfare [2-4].

Furthermore, there are various types of regulatory frameworks established by the government such as Law No. 32 of 2009 concerning Environmental Protection and Management [5] that makes it becomes agent of sustainable resources management in a more strategic way. In line with sustainability goals, the government has also initiated programs for transitioning to renewable energy systems and improving resource efficiency capable of mitigating environmental damage and supporting long-term fiscal resilience [6]. This is complemented by policies on the conservation both of energy and water such as Presidential Instruction No. 13 of 2011 [7], then reinforced again with the issuance of Presidential Instruction No. 1 of 2025 concerning expenditure efficiency [8].

Green accounting promotes sustainable public financial management. It allows for measuring environmental costs and enhancing decision-making quality via its accommodation in financial planning, budgeting, and reporting processes. In addition, it is also recognized as a key strategy to tackle environmental challenges by integrating aspects of the environment into

financial management practices [9]. But previous studies had investigated the green accounting practices in various contexts. For instance, [10] reported that electricity and water savings were achieved in government institutions through environmental awareness programs, although progress on reducing paper usage remained limited. Likewise, Kurniawan and Verawati [11] outlined that environmental accounting can drive sustainable decisions which enable transparency in the public sector.

Most previous studies focused on corporate performance or general environmental management practices and paid little attention to the role of green accounting in enhancing regional budget efficiency under a certain national level of efficiency policy. There seems to be an understudied aspect regarding the strategic orientation of green accounting as a tool for optimizing fiscal efficacy and sustainability which can have local governance implications. In a more complex formulation, the existing empirical literature provides little insight into how transformative accountability can support environmentally oriented accounting practices that improve regional budget management in accordance with national efforts at expenditure efficiency.

Thus, this study investigates how green accounting can be applied in improving regional budget efficiency. The object of the study is Regional Financial and Asset Management Agency (*Badan Keuangan dan Aset Daerah Kabupaten Minahasa Utara* henceforth is referred to as BKAD) of North Minahasa Regency. BKAD is a government agency that prepares regional revenues, expenditures and assets. Green accounting is expected to reduce operational costs and enhance sustainability-focused financial management and accountability across the public sector. This study aims to analyze the implementation of green accounting practices to enhance regional budget efficiency at BKAD North Minahasa Regency after the promulgation of Presidential Instruction No. 1

of 2025.

2. Method

This study uses a descriptive qualitative approach in viewing the implementation of green accounting in order to enhance budget efficiency at BKAD of North Minahasa Regency. This is an appropriate approach as it enables a thick description of the phenomena as they were experienced in their natural environment. It entails investigating behaviors concerning resource utility, practices relating to financial management and the behavioral responses (or lack thereof) of institutions as efficiency policies emerged on the agenda.

Purposive sampling techniques were used to select the research object based on its strategic function as the primary regional financial manager in charge of budgeting, expenditure control and financial reporting. Unlike other budget user institutions, BKAD has an important position in the implementation of efficiency policies such as Presidential Instruction No. 1 of 2025. Additionally, many specific internal policies are lacking, demonstrating a gap between the national policy enacted and its implementation on the regional level.

The secondary and primary data were used in the study [12]. The primary data collection was carried out by in-depth interviews with the informants, namely the Head of the Accounting and Reporting Division and staff from both civil servant employees and adjunct employees in the Accounting and Reporting Division.

Informants were selected based on their direct and routine involvement in financial recording, reporting, regional financial management series and day to day operational activities that permitted multi-faceted insights into efficiency practices as well as the incorporation of accounting within the institution.

The data would also be collected through the method of direct observation for

Table 1. List of Informant

Informant	Position
Informant P	Head of the Accounting and Reporting Division, Regional Finance and Assets Agency, North Minahasa Regency.
Informant N	Staff of the Accounting and Reporting Division, Regional Finance and Assets Agency, North Minahasa Regency.
Informant T	Staff of the Accounting and Reporting Division, Regional Finance and Assets Agency, North Minahasa Regency.
Informant A	Staff of the Accounting and Reporting Division, Regional Finance and Assets Agency, North Minahasa Regency.
Informant J	Staff of the Accounting and Reporting Division, Regional Finance and Assets Agency, North Minahasa Regency.

three months of activity operations, namely monitoring the pattern of paper use in daily administration activities; electricity consumption in office rooms (light and electronic equipment); water used in office work; as well as the implementation of document digitalization practices such as reducing printed documents to electronic files. This involved observing in-office resource usage to establish real-world utilization behavior and efficiency measures being practiced. In addition, the secondary data were obtained through documentation studies including financial reports, budget realization reports, institutional archival documents. These documentations were then utilized to perform the analysis of resource efficiency and budget allocation management.

The data were analyzed through three stages: data reduction, data display, and conclusion [13]. At the data reduction stage, the researcher selected, focused, and simplified data obtained from interviews, observations, and documentation. Interview data that were emphasized included understanding and awareness of budget efficiency and green accounting, efficiency in the management of energy, water, and materials, the influence of Presidential

Instruction No. 1 of 2025, as well as aspects of transparency and accountability. Meanwhile, data such as infrastructure readiness, information system readiness, and general opinions not related to efficiency were eliminated. From the observations, the focused data included patterns of paper usage in administrative activities, the implementation of document digitalization (paperless systems), and the actual behavior of employees in resource utilization, while data related to electricity and water usage were not included as the main focus of analysis. Furthermore, from documentation, the data emphasized included the 2025 financial statements, the first-quarter 2025 budget realization report, and meeting minutes. These data were then categorized into themes such as Internal Policy on Efficiency, Employee Understanding of Budget Efficiency, and resource utilization practices related to budget efficiency.

At the data display stage, the researcher organized the data into a systematic descriptive narrative and structured them based on the research indicators to facilitate the understanding of patterns and relationships among the findings. At the conclusion stage, the researcher interpreted the meaning of the data, identified patterns and trends, and drew conclusions regarding Environmental Impact Reduction, Budget Optimization, Sustainable Budget Efficiency, and Transparency and Accountability in the implementation of green accounting. These conclusions were further verified through data source triangulation to ensure the validity of the research findings.

Next, to assess the efficiency of budget utilization, this study applies the criteria outlined in the Decree of the Minister of Home Affairs No. 690.900-327 in 1996, which classifies efficiency levels according to the percentage of budget realization compared to the planned budget, as shown in the following table.

Based on these guidelines, budget realization above 100% is considered

Table 2. Budget Efficiency Criteria

Measurement Percentage	Efficiency Criteria
100% and above	Not Efficient
90% to 100%	Less Efficient
80% to 90%	Moderately Efficient
60% to 80%	Efficient
Less than 60%	Highly Efficient

Source: Ministry of Home Affairs Number 690. 900-327 Year 1996

inefficient because it exceeds planning. If it is between 90-100%, it is classified as less efficient, and 80-90% is considered quite efficient. Achievements of 60-80% are categorized as efficient, while below 60% are very efficient [14]. These efficiency criteria were used as an analytical framework to evaluate the level of operational expenditure efficiency and to interpret the qualitative findings obtained during the research process.

3. Results and Discussion

Findings on the implementation of Budget Efficiency: Internal Policy on Efficiency. The results indicate that BKAD North Minahasa Regency has implemented some aspects of efficiency related to the use of electricity in the work environment as well as office materials, especially stationery. Such efficiency practices take form in specific actions detailed through an initial analysis of observation and confirmatory interviews. As office hours end and employees begin to depart, electricity consumption is evidently limited in the workplace, as shown by lighting, air conditioning and other machines being switched off when work hours are over. A staff member (Informant N) also found that:

“Outside of working hours, all lights, air conditioning and electronic devices are generally turned off. This is now a daily practice in order to conserve electricity.”

It implies that daily office functions strictly follow the principle of energy efficiency practices. Moreover, document digitalization was also implemented as evidenced by the increasing use of electronic archives in daily administrative activities.

This effort was aided by decreasing reliance on printed documents and office stationery. A staff member (Informant N) supported the results of observation and added that:

“Paper usage has decreased, as the reliance on digital documents has increased. It used to be four reams a month, but now it’s maybe two reams a month.”

This is a concrete advancement in the use of resources. Such a trend is also in line with the reduction of the allocation and actual budget spend on office stationery as reported in the budget documents further validating research finding through data triangulation.

The implementation of this efficiency is directed by INPRES Number 1 of 2025 regarding expenditure efficiency in carrying out the APBN and APBD. BKAD uses this INPRES as the main reference in implementing efficiency principles. Until now, the local government of North Minahasa Regency and the local government of North Sulawesi Province are still in the process of drafting derivative policies or technical regulations at the regional level that specifically regulate the implementation of efficiency. This is based on an in-depth interview with the Head of Accounting at BKAD North Minahasa Regency, who stated that,

“The regional policy is still in the process of being drafted, so for now we are still referring directly to INPRES No. 1 of 2025.”

This information was further validated through follow up inquiry with another informant, a staff member (Informant T) from the Accounting and Reporting Division. During the discussion, the informant confirmed that no specific internal technical policy on budget efficiency has yet been formally established at the regional level. According to the informant, in practice, efficiency measures are currently implemented within BKAD based on INPRES No. 1 of 2025.

This shows an early institutional response to national efficiency policies, but the implementation is operational rather than integrated into a formal green accounting framework. The efficiency practices investigated are in their infancy and reactive to advances in external policies, predominately addressing short-term cost-saving measures like energy usage and office supplies without being backed up by an internal policy framework. Such practices may be identified as the eco-effective action in the green accounting view; however, it is still not done on a comprehensive basis where at an organization level environmental costs are measured, recognized and reported systematically in the accounting system.

Employee Understanding of Budget Efficiency. These results show that the BKAD of North Minahasa Regency has made continuous efforts to enhance employees' understanding of budget efficiency through various activities such as internal socialization, coordination meetings, and technical coaching towards strategies to save and optimize the budget. Such activity is generically conducted on a day-to-day basis, via direct quarterly briefings from the top leadership and formalized platforms like daily roll call, internal meetings or training sessions. The dissemination of this regulation helps employees know the importance of spending efficiency. In regards to this matter, Head of Accounting at BKAD North Minahasa Regency stated,

“Dissemination of regulation regarding implementation for budget efficiency has been conducted a lot for employees within BKAD North Minahasa Regency, both during meeting sessions and separate events specifically aimed at socializing about budget efficiency.”

The researcher further validated this statement through document analysis. For example, in its review of the official meeting minutes maintained in archives by the agency, it noted that leaders discussed in various internal meetings what budget efficiency

amounted to and why they should care about understanding and applying those concepts. In the meeting notes, the leader explicitly instructed all BKAD employees to reinforce their awareness and implementation of efficiency principles in daily operational activities.

These findings analytically suggest that BKAD's endeavors to improve employee understanding constitute an important facilitating element in making the efficiency-oriented practices a permanent feature of the institution. The existing approach lacks an embeddedness in a structured organizational system and remains primarily focused on building awareness and changing behavior. This pattern of internal operation points towards a normative orientation from an institutional perspective, placing values and understandings facilitated through socialization at the centre of this process.

Such efforts can be seen as ancillary facilitators to eco-efficiency initiatives, within the framework of green accounting practices; especially in regards to promoting a culture of material mindful action among staff. However, they are still at an early stage of implementing green accounting comprehensively. Thus, these efforts can be viewed as a preparatory phase on the path to embedding sustainability values in public sector financial management.

Efficiency Implementation. The results show that the application of budget efficiency at BKAD North Minahasa Regency has been implemented throughout the operation significantly related to expenditure. These include office stationery, official travel, ceremonial or large-scale operational activities, and electricity usage within the office environment. Information regarding the implementation of efficiency was initially conveyed by the Head of Accounting and Reporting as the key informant, who explained that efficiency measures had been applied to several major expenditure components. To ensure the consistency of this

information, further verification was conducted through multiple sources.

For office stationery, an examination of budget realization reports revealed a noticeable decline in expenditure, indicating that cost-saving policies had been effectively implemented. In addition, discussions with a staff member (Informant A) confirmed that official travel has been strictly limited, particularly for activities that can still be conducted from the office. The informant stated that,

"We have been restricted from undertaking non-urgent official travel that can still be conducted from the office. Likewise, less essential ceremonial activities have been significantly reduced."

On the issue of electricity usage some observations in the office environment and right after working hours, it was noted that light is turned off, air conditioning devices are switched off; electronic devices are regularly turned off. This insight was corroborated by a staff member (Informant N), who added that,

"During non-working hours, everything including lights, air conditioning and electronic devices are usually switched off. It has become a part of routine practice to conserve electricity."

Triangulation using consistent evidence from the informant statements, documenter evidence and field conditions suggests that efficiency practices are genuine and thus does strengthen the validity of the research findings.

Not only are these efficiencies reflected in empirical findings but they highlight the presence of internal mechanisms which govern resource utilization more controllably and systematically. Generally, the concept of efficiency is applied through policies that restrict acquisition and the use of information technology and promote the proper utilization of work-at-home facilities. To give an example, the reduced use of office stationery is directly linked to the greater

Table 3. Efficiency Implementation Data

No	Elements that are Efficient	Efficiency Implementation Method	Implementation Status	Green Accounting Category (Yes / No)
1	Office Stationery	Reduction in the purchase of paper, ink, pens and pencils; digitalization of documents	Already Implemented	Yes
2	Official Travel	Restrictions and strict selection on official travel	Already Implemented	No
3	Ceremonial/Operational Activities	Reducing the scale of activities and centralizing activities in office buildings	Already Implemented	No
4	Electricity	Use of energy-efficient LED lights and setting the air conditioner temperature to 24 degrees Celsius to save on electricity consumption	Already Implemented	Yes
5	Clean Water	No specific policy or monitoring yet	Not Implemented	Yes

adoption of digital media reporting and internal communication. Likewise, the productivity of official travel can come from a more judicious assessment of whether an out-of-office activity is necessary and effective.

Additionally, according to the interview and triangulated with data, the aspect of water use efficiency has not yet become the main attention in BKAD. In an open discussion, there have been no specific policies or water conservation programs so far.

"We do not have a specific conservation program or policy for water usage as of now," the informant said. Its use still runs as usual according to the office's operational needs."

To ensure the consistency of this information, the researcher then conducted a follow-up interview with a staff member (Informant J), a staff member in the same division, in a more informal setting. The informant confirmed the previous statement by noting,

"As far as I know, there is no specific monitoring of water usage, and there are no internal directives or policies encouraging water efficiency in the office."

Overall, the interview results indicate a consistency of information among informants, showing that there are no water-saving programs, water consumption monitoring mechanisms, or internal policies specifically regulating water efficiency within BKAD of North Minahasa Regency. To provide a clearer picture of the efficiency measures that have and have not been implemented at the BKAD of North Minahasa Regency, the following table summarizes the implementation of efficiency measures based on the research findings.

The findings can further be interpreted within the framework of green accounting, particularly in terms of environmental cost reduction, resource efficiency, and operational eco-efficiency. The reduction in paper usage and electricity consumption reflects efforts to minimize environmental costs associated with resource utilization. At the same time, the increasing adoption of digital systems indicates a shift toward more efficient and sustainable resource management. Moreover, the reduction of official travels and large operational activities further indicate that eco-efficiency improvement is sought through saving surpluses/ fawns as well as reducing

environmental burdens. Although not necessarily referred to as green accounting, these practices indicate that any efficiency measures administered are inherently aligned behind the core tenets of green accounting.

Budget Efficiency Analysis. Every quarter, BKAD of North Minahasa Regency conducts monitoring, evaluation, and reporting on budget realization to uphold good and transparent governance principles. Besides, the treasurer routinely updates and submits quarterly budget realization report. The treasurer regularly provides financial information to the Accounting and Reporting staff.

"We simply discuss the data and use it directly as a basis to record and evaluate. Such behavior is not only observed once, but repeated with regular frequency; so much that periodic reporting has become one of the institution's routine activities".

These field observations were confirmed through an interview with the Head of Accounting and Reporting. The informant shows the fact that reporting on a quarterly basis is fully used as the practice. The informant also claimed,

"In every quarter, the treasurer always reports their budget realization to us. This has become a routine, since it enables us to track and assess budget implementation".

Such correlation between the coming up of field conditions and the informant's response seems to imply that such processes monitoring, evaluation, performance budgeting are followed in practice and not only a norm but also ensures transparency and accountable governance.

Combined with the ordinary reporting and vigilance mechanisms described above, first-quarter budget realization is an early sign of program effectiveness and controls over expenditure, even though it is often unreliable. In terms of operational expenditure components such as office stationery and

electricity, usually in the big amount. The close advisory of these components is expected to improve budget efficiency and help achieve annual performance targets. Therefore, to provide a more concrete illustration, the following presents the budget realization data for the first quarter of 2025 related to office stationery expenditure.

Based on Table 3, the budget allocation for office stationery materials in the first quarter of 2025 was IDR 62,313,488, with expenditure realization reaching IDR 40,116,900. This figure shows a budget absorption rate of around 64.38% of the total planned budget.

The relatively low level of realization in this component indicates efficiency efforts in managing operational expenditures. The low budget absorption, especially in office stationery expenditure, can be interpreted as an initial success in controlling expenditure to remain economical, effective and as needed. However, the implementation of these efficiencies needs to be more studied. It is necessary to evaluate the impact of these efficiencies, whether they really contribute to improving the quality of public finances over time or are ineffective because they have a negative impact on the smooth operations and public services.

Therefore, in addition to prioritizing the principle of savings, it is also necessary to carry out continuous measurements to ensure that the efficiency carried out really provides added value, not just a budget reduction that is ultimately futile. Assessment of budget efficiency is carried out based on the categories described in the method section. The results of the efficiency ratio calculation showed in Table 4.

In the first quarter of 2025, the use of the budget for office stationery was deemed efficient, with an efficiency ratio of 64.38%, placing it in the efficient category as stipulated in the Decree of the Minister of Home Affairs No. 690.900-327 of 1996.

Although such results reflect careful and efficient budget management, the findings

Table 4. Budget Realization Report for the first quarter of 2025

Type of Efficiency	Budget for the first quarter of 2025	First Quarter 2025 Realization	Budget Absorption Rate
Office Stationery	IDR 62.313.488	IDR 40.116.900	64,38%

Source: BKAD Budget Realization Report for the first quarter of 2025

Table 5. Efficiency Ratio Calculation Result

Type of Efficiency	Budget for the first quarter of 2025	First Quarter 2025 Realization	Efficiency Ratio	Efficiency Criteria
Office Stationery	IDR 62.313.488	IDR 40.116.900	64,38%	Efficient

also indicate that over-optimal efficiency should be further scrutinized to ensure it does not compromise either service quality or programme success. This is in line with previous studies which have suggested that a focus on efficiency in the public sector must come at the same time as effectiveness and quality of service, as an excessive focus on reducing costs can undermine service performance [15]. Additionally, non-performance based budget efficiency policies can even potentially decrease public service capacity if not supported through appropriate control mechanisms [16]. As a result, organizations must balance cost-saving measures with operational standards and service needs to ensure program objectives are met effectively. In a public sector context, cost savings are only one suitable measure under the framework of efficiency, factored in service quality stands as an indicator relative to governmental performance [17].

Discussion of Budget Efficiency Implementation: Environmental Impact Reduction. Green accounting within BKAD North Minahasa Regency as a continuance of segment 1 INPRES No. 2025 has started to demonstrate signs of bettering environmental loads, even if still in pre-entry state. This conclusion builds not only on field observations but also interviews that show many of the efficiency practices executed in daily operations. These methods still include reusable paper, document digitalization and electronic signature. This was also

corroborated by a statement made by the key informant, who claimed that:

"We have begun to cut down on paper use by re-utilising documents which remain usable, and transitioning towards digital systems such as electronic signatures".

Despite all the studios and agencies that proclaim themselves eco-friendly, these practices only lead to the reduction of natural resource consumption. As a result, little waste in office resources is used, but not yet fully implemented in all aspects.

These initial practices are a sign that environmental factors have started to be incorporated into financial and operational activities. These measures echo national policies on sustainability. Nonetheless, the outcomes reveal that there is still potential to do better, particularly when it comes to managing inefficient water consumption. To obtain more effective results, BKAD should be able to expand the application of green accounting principles to all types of resources, as well as strengthen continuous monitoring

The application of green accounting is not only efficient and cost-effective but will also embody responsibility towards the environment and increase long-term institutional value. This view is aligned with these study findings, as efficiency practices in BKAD North Minahasa Regency not only reduce spending on the budget but also paper and natural resources [18]. Moreover, prior research supports this finding by

demonstrating that green accounting leads to better environmental performance and corporate sustainability. These have implications to serve as the basis of comparable trends toward sustainable public management in other sectors [19], which can refer to the practices in BKAD North Minahasa Regency.

Budget Optimization. BKAD of North Minahasa Regency managed to optimize the budget through efficient use of office stationery by applying the concept of green accounting. Policies such as document digitalization, reuse of used paper, and reduction of stationery purchases have significantly reduced expenditure without disrupting employee performance, as indicated by interview results showing that employees have adapted well to digital systems and supported by observations of ongoing administrative activities that continue to run effectively. This efficiency is reflected in the realization of the stationery budget which reached 64.38% of the total budget for the first quarter of 2025, which is included in the efficient category based on the standards of the Ministry of Home Affairs.

This efficiency is evidenced by the implementation of environmentally oriented financial management to stimulate budget utilization more optimally. Apart from lessening operational costs, it also helps in reducing paper waste and unnecessary resource consumption. Green accounting thus functions not only as part of a more fiscally efficient model, but as part of a mechanism for realizing more responsible and sustainable systems of financial governance. Similar empirical evidence shows that green accounting practices, mainly those that augment environmental performance, plays a pivotal role in improving operational cost efficiency and enhancing firm profitability characteristics [20]. This is in line with BKAD North Minahasa regency's experience, where various environmentally friendly steps like the digitalization of documents resulted in a significant budget saving.

Sustainable Budget Efficiency. The green accounting implementation on BKAD of North Minahasa Regency is a positive achievement in realizing sustainable budget efficiency. BKAD was able to reduce expenditure without compromising service quality through the policy of document digitalization, a decrease in office stationary purchases as well as the reuse of used paper. A post office stationery with realization of the budget as economically and efficiently as possible is able to be realized in a real way that is still considered environmentally friendly.

Reducing paper consumption and office waste: In addition to the savings of the budget, green accounting will also affect the reduction of environmental burden. This proves that budget efficiency is then not short-lived but can also be a long-term test strategy of responsible and sustainable financing. The previous research at PT Unilever Indonesia through water use efficiency and waste management was proven to be able to provide a sustainable decrease in operating cost [21]. Additionally, this result supports previous research which asserts green accounting implementation plays a crucial role in organizational sustainability by integrating environmental factors into financial decision-making and enhancing long-term accountability [22].

Transparency and Accountability. Implemented in BKAD North Minahasa Regency, the application of green accounting makes local governments have an efficient and effective budgeting process through environmentally friendly programs and increases atmosphere transparency in regions. A more transparent and internally as well as externally monitorable recording process is formed by measures such as digitalization of documents and reporting through government information systems.

Moreover, efficiency measures show that an institution is taking accountability for the proper and sustainable use of public resources. BKAD's efforts to incorporate environmental aspects into financial practices

broaden the definition of accountability from just a financial perspective to committing to resource preservation and integrity in public services. Such finding is consistent with studies indicating that participatory and transparent financial practices increase public trust and accountability [23]. Such practices also promote more credible and accountable financial management.

4. Conclusion

Based on the results of this study it can be concluded that the application of green accounting at the North Minahasa Regency Regional Financial and Asset Management Agency (BKAD) has been able to provide quantifiable benefits in terms of budget efficiency through cost savings, especially in operational costs such as office stationery. Such that the realization of the budget in the first quarter of 2025 is 64.38%, which according to the criteria determined by the Minister of Home Affairs categorized as efficient. Operational cost also reduced through various steps such as, digitalization the file movement process, reusing papers in offices and limiting the use of stationeries. Furthermore, the study notes how these measures of efficiency have dramatically reduced environmental footprint by decreasing paper use and office waste. But accounting for the environment is still in its early implementation, with no formal internal policies or full system of internal measurements and report of environmental costs.

This study has both scientific and practical contributions, with the scientific contribution being to enrich empirical studies about the implementation of green accounting in local government financial management which is still rarely studied in Indonesia. From the practical side, the object of this research can be used as input to BKAD and the public sector in policies that are more specific internally, regulation strengthening and establishment will mobilize an internal control system to assess budget utilization periodically (especially energy, water and raw

material consumption). This study also demonstrates the potential to apply green accounting as an environmentally sound model of fiscal policy that can be replicated in other agencies or regions.

However, this study has multiple limitations. Environmental aspects are analysed based on the limited availability and disaggregated data especially on electricity and water consumption (which is managed by other agencies). The finding also indicates that the green accounting-based efficiency practices are still only operational and have not been institutionalized as formal internal policies. These constraints indicate that the results mainly capture visible efficiency practices enabled by accessible data. Based on these limitations, future research is recommended to integrate cross-agency data, particularly related to energy and water consumption, and to develop more comprehensive recording systems to enable a more thorough and measurable analysis of green accounting practices.

References

- [1] Praditya II. Indonesia Punya Kekayaan SDA Hingga Rp 200 Ribu Triliun. *WwwLiputan6Com* 2014:1. <https://www.liputan6.com/bisnis/read/812149/indonesia-punya-kekayaan-sda-hingga-rp-200-ribu-triliun>.
- [2] Mahkamah Konstitusi RI. Putusan Nomor 58/PUU-VI/2008 2008.
- [3] Tietenberg T, Lewis L. *Environmental and Natural Resource Economics*. 2023. <https://doi.org/10.4324/9781003213734>.
- [4] Sihombing ATM, Banke R. Politik Hukum Pengelolaan Sumber Daya Alam di Indonesia. *J Ilm Simantek* 2023;7:7–15.
- [5] Republik Indonesia. Undang-Undang (UU) Republik Indonesia Nomor 32 Tahun 2009 Tentang Perlindungan Dan Pengelolaan Lingkungan Hidup 2009.

- [6] Kemenko P. Pemerintah Terus Mendorong Percepatan Transisi Energi di Dalam Negeri Guna Mencapai Target Net Zero Emission pada 2060. Kemenko Perekon RI 2023. <https://www.ekon.go.id/publikasi/detail/4996/pemerintah-terus-mendorong-percepatan-transisi-energi-di-dalam-negeri-guna-mencapai-target-net-zero-emission-pada-2060>.
- [7] Presiden RI. Instruksi Presiden (INPRES) Republik Indonesia Nomor 13 Tahun 2011 tentang Penghematan Energi dan Air 2011.
- [8] Presiden RI. Instruksi Presiden (INPRES) Republik Indonesia Nomor 1 Tahun 2025 tentang Efisiensi Belanja dalam Pelaksanaan APBN dan APBD Tahun Anggaran 2025 2025.
- [9] Hamidi. Analisis Penerapan Green Accounting terhadap Kinerja Keuangan Perusahaan. *Equilibria* 2019;6:23–36. <https://doi.org/10.4324/9781315561103-15>.
- [10] Ekasatya HN. Penerapan Kesadaran Lingkungan Dengan Penghematan Anggaran Listrik, Kertas, Air di Kantor Badan Lingkungan Hidup Kabupaten Probolinggo. *Calyptra J Ilm Mhs Univ Surabaya* 2014;3:1–15.
- [11] Kurniawan A, Verawati H. Building a Green Future: The Role of Environmental Accounting in the Public Sector. *1st Int Conf Islam Econ Bus Dev Stud KnE Soc Sci* 2024:47–56. <https://doi.org/10.18502/kss.v9i16.16233>.
- [12] Sulung U, Muspawi M. Memahami Sumber Data Penelitian: Primer, Sekunder, dan Tersier. *J Edu Res Indones Inst Corp Learn Stud* 2024;3:110–6.
- [13] Miles M, Huberman AM, Saldana J. *Fundamentals of qualitative data analysis: A methods source book*. Third. 2014.
- [14] Kasih Y. Efisiensi Anggaran Belanja Daerah Pada Kecamatan Kotapinang Labuhanbatu Selatan Tahun 2017-2019. *J Ilmu Adm Media Pengemb Ilmu Dan Prakt Adm* 2022;19:15–22. <https://doi.org/10.31113/jia.v19i1.802>.
- [15] Lu J. The Performance of Performance-Based Contracting in Human Services: A Quasi-Experiment. *J Public Adm Res Theory* 2016;26:277–93. <https://doi.org/10.1093/jopart/muv002>.
- [16] Munawir, Suherman A, Ahmada NH. Budget Efficiency vs Public Service: A Critical Evaluation of Presidential Instruction No. 1 of 2025. *J Law Econ* 2025;4:224–36. <https://doi.org/10.56347/jle.v4i2.376>.
- [17] Khalim N. Analysis of Effectiveness and Efficiency of DKI Jakarta Government Budget (Case Study on Population and Civil Registration Service). *J Innov Public Account* 2025;2:48–56. <https://doi.org/10.33830/jipa.v2i1.12601>.
- [18] Faizah BSQ. Penerapan Green Accounting Terhadap Kinerja Keuangan. *J Ris Akunt Kontemporer* 2020;12:94–9. <https://doi.org/10.23969/jrak.v12i2.2779>.
- [19] Pertiwi DM, Handajani L, Astuti W. The Influence of Green Accounting on Company Sustainability through Environmental Performance in The Consumer Goods Sector. *J Akunt Dan Perpajak* 2023;9:324–40. <https://doi.org/10.26905/ap.v9i2.10073>.
- [20] Rahman ZA, Lilik H, Kartikasari N. Pengaruh Penerapan Green Accounting Terhadap Profitabilitas. *MONEX - J Account Res* 2023;12:251–63.
- [21] Lestari NC, Neto AM, Tyas IVDTH, Pandin MYR. Penerapan Green Accounting dan Green Economy Terhadap Profitabilitas PT Unilever Indonesia 2024;7:288–95.

- [22] Rahmawati T, Hamzah A. Green Accounting Enhances Sustainability Report Integrity: Does Governance Support Voluntary Disclosure Perspectives? *J Akunt* 2025;29:448–68.
- [23] Dhipayanti GAMPR, Dewi GARS. Green Accounting. *JIMAT (Jurnal Ilm Mhs Akuntansi)* 2023;14:1091–103. <https://doi.org/10.24912/ja.v29i3.2957>
<https://doi.org/https://doi.org/10.23887/jimat.v14i04.58539>

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