The Indonesian Accounting Review Vol. 14, No. 2, July - December 2024, pages 289-300

Beyond profit: How to create value in business by integrating ESG and sustainability accounting

Musviyanti Musviyanti*, Muhammad Abadan Syakura, Muhammad Harits Zidni Khatib Ramadhani

Mulawarman University, Samarinda, East Kalimantan, Indonesia

ARTICLE INFO

Article history
Received September 28, 2024
Revised November 21, 2024
Accepted December 30, 2024

JEL Classification:
M41

Key words:
ESG investment, Sustainability accounting, Green value.

DOI:
10.14414/tiar.v14i2.4765

This work is licensed under a Creative Commons Attribution 4.0 International License.

ABSTRACT

This study aims to explore the integration of Environmental, Social, and Governance (ESG) investment with sustainable accounting practices to achieve the Sustainable Development Goals (SDGs) in order to instill important values in sustainable busi-ness. This study is a qualitative study using a case study method at PT Pupuk Kali-mantan Timur (PKT) and its subsidiary, PT Kaltim Industrial Estate (KIE). Data collection was conducted through in-depth interviews. The findings of this study reveal that a proactive approach to ESG adoption is a strategic corporate initiative that emphasizes corporate governance compliance with government regulations, ethical business practices, and fraud prevention. In addition, this study explores insights into the decision-making process related to ESG projects through budget considera-tions for ESG implementation. The results of this study also indicate that there is an important role for management in adopting ESG practices as a company's commitment to long-term environmental management. The implications of this study are for sustainable development, especially in the fertilizer industry, through the role of an integrated ESG strategy that will ultimately increase corporate profitability, preserve the environment and support the improvement of community welfare. This research contributes to the practical development of sustainability accounting on how industries can integrate sustainable business with environmental responsibility through ESG initiatives to achieve the SDGs.

ABSTRAK

Penelitian ini bertujuan untuk mengeksplorasi integrasi investasi Lingkungan, So-sial, dan Tata Kelola (Environmental, Social, and Governance/ESG) dengan praktik akuntansi berkelanjutan guna mencapai Tujuan Pembangunan Berkelanjutan (Sus-tainable Development Goals/SDGs) serta menginternalisasi nilai-nilai penting dalam bisnis berkelanjutan. Penelitian ini menggunakan pendekatan kualitatif dengan metode studi kasus pada PT Pupuk Kalimantan Timur dan PT Kaltim Industrial Estate sebagai anak perusahaan, dengan teknik pengumpulan data melalui wawancara mendalam. Hasil penelitian mengungkap pendekatan proaktif terhadap adopsi ESG sebagai inisiatif strategis perusahaan yang menekankan kepatuhan tata kelola terhadap peraturan pemerintah, praktik bisnis yang etis, dan pencegahan kecurangan. Selain itu, penelitian ini memberikan wawasan tentang proses pengambilan keputusan terkait proyek ESG melalui pertimbangan anggaran untuk implementasi ESG. Penelitian ini menyimpulkan bahwa manajemen memiliki peran penting dalam inisiatif ESG sebagai bentuk komitmen perusahaan terhadap pengelolaan lingkungan jangka panjang. Implikasi penelitian ini berkaitan dengan pembangunan berkelanjutan, khususnya dalam industri pupuk, melalui peran strategi ESG yang terintegrasi, yang pada akhirnya dapat meningkatkan profitabilitas perusahaan, menjaga kelestarian lingkungan, dan mendukung peningkatan kesejahteraan masyarakat. Penelitian ini memberikan kontribusi praktis terhadap pengembangan akuntansi keberlanjutan, khususnya bagaimana industri dapat mengintegrasikan bisnis berkelanjutan dengan tanggung jawab lingkungan melalui inisiatif ESG untuk mencapai SDGs.

* Corresponding author, email address: musviyanti@feb.unmul.ac.id

1. INTRODUCTION

The sustainability of the fertilizer industry is an important factor in global agriculture. However, as a major contributor to agriculture, fertilizer companies are always faced with two major responsibilities: maintaining sustainable productivity and protecting the environment. The widespread and uncontrolled use of chemical fertilizers will have a negative and significant impact on the environment, including soil and water pollution. The results of a study conducted by Hartatik & Widowati (2015) show that excessive use of chemical fertilizers can cause a decrease in soil quality and water pollution through leaching of nutrients such as nitrogen and phosphorus. In addition, the results of a study conducted by Andika et al. (2020) indicate that waste from the fertilizer industry can increase Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) levels in water bodies, which have a negative impact on aquatic ecosystems. These findings underline that the inappropriate use of chemical fertilizers can result in serious environmental degradation. Therefore, there is a need for sustainable practices in the fertilizer industry to reduce these impacts.

The development of government regulations and increasing stakeholder concern for the environment put pressure on the industry to achieve a balance between productivity and environmental responsibility (Maan, 2019). Supervision of fertilizer companies is getting tighter. This can be seen from the increasingly strict environmental management regulations and green standards for fertilizer companies. Complying with Environmental, Social, and Governance (ESG) principles and aligning them with the achievement of the Sustainable Development Goals (SDGs) is a must and a competitive advantage. Sustainability and environmental responsibility are key elements of corporate strategy (Ayu, et.al, 2024; Niehaus & Pelton, 2023). The main focus includes reducing greenhouse gas emissions, managing fertilizer waste, using more efficient energy, and using sustainable natural resources.

PT Pupuk Kalimantan Timur (PKT) is a well-established company. The company was founded in late 1977 and is one of the largest urea and NPK fertilizer producers in Asia. In addition, the company also produces ammonia fertilizer. In order not to harm the environment, PKT's activities must be managed properly. Therefore, PKT continues to make improvements to maintain sustainability and reduce its impact on the environment. PKT has made various efforts to minimize its environmental footprint and has even received the Gold PROPER award from the Ministry of Environment for five consecutive years. However, achieving sustainability is still difficult.

The fertilizer sector faces significant regulatory pressures, including strict rules on greenhouse gas emissions, waste management, and other environmental impacts. Several regulations, such as Regulation of the Minister of Industry No. 11 of 2023 concerning Green Industry Standards for the ammonia and urea fertilizer industry and Regulation of the Minister of Environment and Forestry No. 17 of 2019 concerning Emission Quality Standards for the fertilizer and ammonium nitrate industry, encourage companies to adopt ESG practices, as a form of company compliance with government standards and to avoid sanctions or loss of legitimacy. In addition, Regulation of the Minister of Industry No. 50 of 2020 concerning Green Industry Standards for nitrogen, phosphorus, and potassium-based fertilizers and Regulation of the Minister of Agriculture No. 70 of 2011 concerning guidelines on organic fertilizers and soil amendments greatly influence this sector. Industry norms, such as sustainable practices adopted by leading companies, also pressure other companies to adopt similar standards in order to remain competitive and accepted by the community and stakeholders. Thus, regulatory pressures and industry norms create strong incentives for the fertilizer sector to seriously integrate ESG strategies, consistent with the institutional theory framework.

Integrating Environmental, Social, and Governance (ESG) principles and sustainability accounting practices is an important effort to address the challenges of achieving sustainable development in the fertilizer industry. Therefore, this study specifically investigates how ESG investment and sustainability accounting practices are integrated to support the achievement of Sustainable Development Goals (SDGs) in the fertilizer industry.

This study takes an institutional theory perspective to understand how institutional pressures are driving the adoption of sustainability practices in the fertilizer industry. It also employs Stakeholder Theory (Donaldson & Preston, 1995; Freeman, 1995) in illustrating how stakeholder interests force companies to adopt ESG and sustainability accounting practices. Companies are required to implement a comprehensive strategy that combines ESG factors in improving performance, reputation, risk management, and stakeholder engagement (Ting et al., 2019). According to Niehaus & Pelton (2023), accounting practices that combine sustainability and ESG are increasingly important for businesses.

This study aims to investigate the integration of ESG investment and sustainability accounting practices in achieving the Sustainable Development Goals (SDGs). The results of this study are expected to be able to instill important values in the field of sustainable business and provide consequences for the fertilizer industry and society for the development of sustainability accounting practices. In addition, this study also discusses sustainability practices in the fertilizer industry in implementing ESG, especially in the scope of current issues regarding climate change and the drive for decarbonization at PKT and its subsidiary, PT Kaltim Industrial Estate (KIE). This study integrates various aspects of sustainability in the fertilizer industry in order to make a major contribution to the development of sustainability accounting practices and ESG integration in fertilizer manufacturing, a relatively new and important area for further study.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Stakeholder theory adopted by Freeman in 1984 states that business firms should create value not only for shareholders but also for all business stakeholders. This idea is central to ESG practice because it broadens the scope of corporate responsibility. Mitchell et al. (1997) developed the stakeholder identification and salience framework, which has been applied by stakeholders to ESG practices. The framework helps companies identify and prioritize various stakeholders to develop a broader ESG strategy. Furthermore, according to Jensen (2001), maximizing long-term corporate value is consistent with the interests of all stakeholders. This view has justified the benefits of ESG practices in creating sustainable long-term value. Related to corporate responsibility, stakeholder engagement has gained more attention (Greenwood, 2007). Therefore, this has led companies and other stakeholders to increase dialogue on the development and implementation of ESG practices.

Stakeholder theory was applied by Gray et al. (2014) to explain the emergence of sustainability reporting. Currently, ESG reporting is a means of communicating with heterogeneous stakeholders, in addition to simply communicating with investors. On the other hand, Henisz et al. (2019) applied the theory to explain that ESG investing is associated with significantly better long-term financial performance when integrating broader stakeholder considerations. This has influenced the way investors make decisions about incorporating ESG factors into their operations.

Institutional theory, especially the concept of institutional isomorphism proposed by DiMaggio and Powell (1983), explains how and why organizations adopt ESG investing and sustainability accounting practices. According to Ioannou and Serafeim (2015) after the implementation of mandatory regulations on sustainability reporting, companies are required to disclose more and improve their performance of ESG practices. Organizations under uncertain environmental pressures will follow other successful organizations. Amel-Zadeh and Serafeim (2018) show how following the initiatives of industry leaders has led to the growing practice of ESG implementation within investment firms. However, Suchman (1995) argues that it is due to the legitimacy pressure to achieve acceptance so that organizations conform to institutionalized norms.

In implementing ESG practices, companies adopt sustainability accounting so that their stakeholder groups remain satisfied with the legitimacy of the company (Deegan, 2002). Thornton et al. (2012) and Yan et al. (2019) establish an institutional logic perspective on how different institutional logics, such as shareholder primacy versus stakeholder orientation, can influence the adoption of ESG practices. Both stakeholder theory and institutional theory offer frameworks to explain and understand the adoption and development of ESG practices and sustainability accounting. Stakeholder theory suggests that corporate decision-making processes must take multiple stakeholders into account. Meanwhile, institutional theory helps describe the processes and pressures that guide the adoption and diffusion of such practices across companies and industries.

ESG principles are increasingly important for investors, stakeholders, and companies looking at long-term risks and opportunities.

The fertilizer industry is a critical part of global agriculture and food production, but on the other hand, it also presents significant challenges and opportunities related to ESG. The industry has a negative impact on the environment as it causes greenhouse gas emissions, water pollution (eutrophication), and soil degradation (Jonshon, 2023). However, adapting to sustainable agriculture, such as precision farming and the use of organic fertilizers, can reduce the environmental footprint. The natural resources required for this industry are primarily phosphate and natural gas, therefore sustainable resource management is a must. In addition, these resources also impact the air and water quality in local communities so public health safety must be ensured. Ethical labor practices in terms of wages, safe working conditions, and labor rights must be provided.

The fertilizer industry must directly touch the area of food production and security. Thus, sustainable methods in this area will make food available and affordable for the long term. The fertilizer industry requires a high level of operational and reporting transparency regarding environmental impacts and key social practices. Governance is intended to ensure that companies comply with established laws, regulations and ethical standards that will prevent corruption and build trust. It is very important for companies to win the hearts of stakeholders, such as farmers and local communities, including investors by ensuring that their concerns are understood and addressed for the long term.

Embedding the Sustainable Development Goals (SDGs) into business strategy can be done in several ways: 1) establishing business practices that are in line with the objectives of these goals, thus ensuring that companies contribute to the long-term global sustainability of their business (Taliento et al, 2019; Li et al, 2024); 2) integrating relevant SDGs into the company's mission, vision, and values, thus ensuring that sustainability is embedded in the company's strategy; 3) setting specific, measurable, and time-bound targets in line with relevant SDGs that can be achieved by reducing carbon emissions by investing in research and development of sustainable products and services and meeting the needs of a low-carbon and resource-efficient economy; 4) reporting ESG performance regularly, including progress on SDG targets; 5) using established frameworks such as the Global Reporting Initiative or the Task Force on Climate-related Financial Disclosures for transparency; 6) obtaining confirmation from the board of directors and senior management regarding the embedding of the SDGs in the company's strategy, as reflected in governance structures, policies, and performance incentives; 6) demonstrating a high level of integrity and compliance to create trust and accountability in all business interactions; 7) educating employees about the SDGs and the relevance of the goals to the company's strategy through training programs, workshops, and internal communications; and 8) linking employee performance incentive structures to SDG-related goals.

Integrating SDGs into corporate strategy is a must for any business that wants to contribute globally to sustainability and achieve long-term growth in business operations. By integrating SDGs, stakeholder engagement is promoted through sustainable practices and transparent reporting by companies to help improve social, environmental and economic conditions. This approach involves addressing current global challenges and contributes to improving corporate reputation, stakeholder trust and market competitiveness.

3. RESEARCH METHOD

This qualitative research is conducted using a case study approach with a focus on understanding in depth how the integration of ESG investment into Sustainability Accounting to achieve SDGs can create green value that may exceed profits in non-green industries. The data sources used in this study are primary data obtained from informants through the interview process. In addition, this study also uses secondary data consisting of literature within the scope of the discussion topic and several company policies or strategic plans. The data collection technique in this study is a search for relevant literature and open/unstructured interviews using the snowball method.

The informants involved in this study are accountants and management of PT PKT, especially those directly involved in the preparation of sustainability reports. In addition, this study also includes interviews with the management of PT. PKT subsidiaries as a form of source triangulation regarding the integration of ESG and SDG concepts at PT KIE. The following is a detailed list of informants in this study (Table 1).

In the interview section, this study uses semi-structured questions by providing the same questions to each informant based on their expertise. Questions for accountants are focused on the extent to which accountants in the company are involved in ESG implementation and sustainability integration. Meanwhile, questions for management are focused on how decision-making for ESG budgets and programs is carried out using cost-benefit analysis.

First, interviews with managers and accountants at PKT are conducted to obtain in-depth information about ESG-based activities that have been carried out. The information, obtained based on the answers of the informants, shows that so far PT PKT has sent mandatory rules to all subsidiaries to follow PKT by implementing the ESG concept to obtain green value and risk mitigation. The information also shows that PT KIE has implemented the concept, such as the use of renewable energy, and showed ESG aspects in its sustainability report which finally receives an award. Finally, based on this information, interviews are also conducted with the management and accountants of PT KIE.

Data analysis in this research is carried out during the data collection process and after completing data collection in a certain period. Data analysis in this study consists of several activity flows carried out together and systematically, starting from data reduction, data display, to conclusion drawing/ verification. This study uses credibility test to test the validity of the data by triangulation. The triangulation method used is source triangulation, one of the three triangulation methods proposed by Sugiyono (2020). The source triangulation method in this research is carried out by providing several questions which are answered and confirmed by several sources, as informants, at different times when collecting interview data.

Table 2 below shows the stages of source triangulation analysis.

Table 1
List of Informants

No	Informant Code	Position	Company
1.	Informant 1	Management	PT. PKT
2.	Informant 2	Accountant	PT. PKT
3.	Informant 3	Management	PT. KIE
4.	Informant 4	Accountant	PT. KIE

Source: Data Processed, 2024

Table 2
Source Triangulation Analysis

No.	Aspect	Triangulation Analysis
1.	Sources of information	1. Accountant involved in preparing the Sustainability Report at PT PKT (primary) 2. Management involved in formulation of policies related to ESG implementation at PT PKT and PT KIE (primary) 3. PT PKT's sustainability report (2022 and 2023, secondary)
2.	Objective	The aim of this study is to find out and explore the creating green value process by integrating of ESG investment with Sustainability Accounting to achieve SDGs at PT PKT and PT KIE
3.	Formulation of the problem	How does integration of the ESG concept with Sustainability Accounting from the perspective of accountants and management? What is the impact of integration of the ESG concept with Sustainability Accounting for the companies?
4.	Analysis Tools	In-depth interviews with several informants from PT Kaltim Industrial Estate (KIE) and PT Pupuk Kalimantan Timur (PKT) as well as analysis of related data and documents
5.	Validation	Accommodation of information sources that help solve research problems (triangulation)

Source: Data Processed, 2024

4. DATA ANALYSIS AND DISCUSSION

Findings from various sources are presented in the data analysis, including the results of in-depth interviews with key stakeholders, accountants, and management of PT Pupuk Kalimantan Timur (PKT) and its subsidiary PT Kaltim Industrial Estate (KIE). In the interviews, the informants provide detailed insights into ESG practices, sustainability accounting, and their impacts. In addition, this study also uses secondary data, such as company policies, strategic plans, and sustainability reports (from 2022 to 2023), which are analyzed to strengthen and expand the information from the interviews.

This study uses triangulation source base as the main validation method involving several informants at different times to increase the credibility of the findings. Cross-referencing of data is done by confirming and comparing interview results with sustainability reports and documented company policies. This triangulation ensures that the findings are comprehensive and based on multiple perspectives and data points.

Implementation of ESG Initiatives at PKT and KIE

In terms of ESG compliance, PT Pupuk Kalimantan Timur (PKT) has a close relationship with its subsidiary, PT Kaltim Industrial Estate (KIE). It is clear that KIE, as a subsidiary of PKT, has good integration to support PKT's sustainability programs or initiatives. From the interview results, it was found that PKT always communicates with KIE in implementing various ESG programs. PKT always maintains strict environmental standards in all industrial operations, including waste management, emission reduction, and energy efficiency. Like most modern industrial areas, both companies also adopt environmentally friendly technologies, such as the use of LED lights and the utilization of solar energy.

The application of technology allows for reducing the carbon footprint, as one of the environmental impacts due to the operational process of the factory in the KIE area. PKT and KIE provide social and economic value to the community, such as opening up employment opportunities for people in the area. At PKT, community empowerment and CSR programs are aligned to further increase the positive impact on the community around the area. In addition, the company also practices good governance based on ESG standards set by PKT.

Transparency in operations and reporting is a prime concern to assure that all industrial activities at KIE are carried out according to sustainable governance practices. The strategic linkages between PKT and KIE join forces in attaining the Sustainable Development Goals (SDGs). The Board of Directors of KIE, together with the public relations manager, accounting manager, and any other relevant line management, has the responsibility of creating CSR milestones in sustainability initiatives based on PKT's ESG initiatives and sustainability reports, but with adaptations for their areas of operation. Through close liaison and consistent application of ESG practices, PKT and KIE contribute together in building a more responsible and sustainable industry operation.

PT Pupuk Kalimantan Timur (PKT) in Bontang exemplifies the application of Environmental, Social, and Governance (ESG) principles through engagement with stakeholders such as environmental groups and local communities. The company's environmental commitment is reflected in collaborations with various organizations, including Kutai National Park, Universitas Mulawarman, and the Reef Check Indonesia Foundation, for biodiversity conservation programs. This collaboration illustrates how environmental groups can influence the adoption of more proactive ESG strategies. Furthermore, PKT empowers local communities through initiatives such as the "Seni Sana Sini" program, which aims to preserve local culture and strengthen community relations. This initiative underscores the critical role of local communities in promoting sustainable social practices. The company's commitment to ESG has also been recognized globally, ranking third in the ESG Risk Rating within the agricultural chemicals sub-industry. These initiatives demonstrate how PKT integrates ESG principles to balance business productivity, social responsibility, and environmental preservation.

ESG Investment Cost-Benefit Analysis

ESG investment projects consider factors such as investment costs, long-term benefits, potential savings, and overall impact on sustainability goals. Based on the interviews, all ESG initiatives undergo a cost-benefit analysis before implementation. In addition, although there is no specific budget for ESG, there is consideration of initiatives related to the overall project budget. Specific budgets are allocated for specific projects, such as decarbonization. Initiatives, such as installing solar power plants and refurbishing factories, are evaluated based on their cost-effectiveness and long-term benefits. Investments are analyzed over the long term (e.g., 20 years for refurbishing factories). PKT balances economic considerations with environmental impacts and ensures that sustainability initiatives do not compromise financial stability.

Research conducted by Aliamutu et al. (2023) highlights the importance of environmental expenditure management for long-term financial success. The results of the study indicate that environmental costs affect financial performance. The results of research conducted by Putri et al. (2021) at PT. Alove Ali show that proper handling of environmental cost accounting can significantly affect financial reports and sustainability performance. Based on the interview results, it is known that investment in new technologies (e.g. low-carbon technology, solar PV) is carried out by considering the costs and their potential to reduce emissions. PKT integrates ESG initiatives into its core operations and ensures a comprehensive approach by always considering environmental sustainability, social responsibility, good governance, and economic feasibility. Cost-benefit analysis plays an important role in decision-making and ensures that investments in sustainability are justified and aligned with the company's long-term strategic objectives.

Furthermore, the results of research conducted by Gärling & Jansson (2021) show that sustainable investment, which combines environmental, social, and governance factors in addition to financial considerations, has a positive effect on psychological well-being. ESG investment has an impact not only on financial and environmental factors, but also on overall well-being.

Governance Structures Supporting Environmental, Social, and Governance (ESG) Practices

PKT and KIE adopt a proactive approach in implementing ESG practices. This can be seen from their strategic initiatives, such as decarbonization and energy efficiency. PKT focuses on decarbonization projects, the use of Solar Power Plants (PLTs), and factory revitalization. This approach shows the company's commitment to addressing climate change and environmental sustainability issues.

Both PKT and KIE use the GRI Standards and SE-OJK guidelines in preparing the Sustainability Report (SR). The GRI Standards are international guidelines for sustainability reporting that ensure transparency in a company's economic, environmental, and social impacts. Meanwhile, SE-OJK is a guideline issued by the Indonesian Financial Services Authority that regulates sustainability reporting for companies. These reports are prepared periodically and separated from the Annual Report (AR) to ensure a specific focus on sustainability aspects. For KIE, reporting is conducted every semester to PKT, which then PKT reports to Pupuk Indonesia (PI), ensuring transparency and accountability in the company's operations.

PKT and KIE emphasize the importance of good governance, including compliance with government regulations, business ethics, and anti-fraud measures. KIE also focuses on strong risk management, ensuring that all ESG projects are assessed with a cost-benefit analysis before implementation. Compliance with the State Officials' Wealth Report (LHKPN) and business ethics standards is a crucial component of governance at PKT and KIE. This ensures that the company not only complies with regulations, but also operates with high integrity, thereby strengthening the reputation and trust of stakeholders. The governance structure supporting ESG practices at PKT and KIE can be seen as an effective model for other companies aiming to adopt sustainability strategies. By focusing on a proactive approach, transparent reporting, integrated CSR programs, and strong compliance and ethics, companies can achieve significant positive impacts in environmental, social, and governance aspects.

The results of this study are in line with the results of other studies that good governance is the key to the successful implementation of ESG practices. For example, in an article entitled "*Governance for Sustainability: Integrating Governance Frameworks to Support ESG and Sustainable Development Goals (SDGs)*" it is stated that strong integration of governance with ESG frameworks can support the achievement of SDGs. The Global Reporting Initiative (GRI) standards also provide comprehensive guidelines for sustainability reporting that can improve transparency and accountability in companies (Global Reporting Initiative, 2016). The OECD Principles on Corporate Governance offer guidance on how companies can build effective governance to support ESG practices. The article entitled "*The Role of Corporate Governance in ESG Investing*" explores the relationship between corporate governance and ESG investing and highlights the importance of boards of directors and policies that support sustainability (OECD, 2015; Journal of Business Ethics, 2020).

Roadmap for Decarbonization and its Impact on Subsidiary Companies

In-depth interviews and discussions with PT Pupuk Kalimantan Timur (PKT) provide insight into the company's efforts to protect the environment towards decarbonization and how these efforts can be extended to its subsidiaries. PKT's decarbonization roadmap is divided into two phases. The first phase is planned from 2023 to 2030. In this phase, PKT focuses on reducing emissions by 32% by utilizing low-carbon technologies to reduce carbon emissions released into the air during production, increasing process efficiency, utilizing CO2 to create economically valuable by-products, and offsetting emissions by storing carbon in other forms, such as through an extensive tree planting program. The second phase is planned for 2031-2060 which aims to achieve net zero emissions. In this phase, PKT uses more advanced technologies such as Carbon Capture and Storage (CCS) to capture CO2 emissions and store them in unused gas or oil wells and Clean Ammonia Production Technologies to utilize hydrogen from renewable sources instead of natural gas to produce ammonia, the main component of their fertilizers. Adopting this decarbonization strategy offers several benefits such as significant reduction in greenhouse gas emissions and environmental footprint, long-term cost savings through energy efficiency, and creation of valuable by-products from waste. Improved reputation and competitiveness in the market due to a strong commitment to sustainability also increases the attractiveness of investors who prioritize ESG (Environmental, Social, and Governance) factors.

While the primary focus currently lies on PKT itself, there are implications for its subsidiaries. Subsidiaries will be required to develop and implement their own decarbonization roadmaps that align with PKT's overall strategy. These companies will need to adopt similar low-carbon technologies and practices, which may involve significant changes to their operations and production processes. The shift towards a circular economy will encourage subsidiaries to explore innovative uses for by-products and waste, thereby improving overall resource efficiency. Advanced technologies, such as CCS and clean ammonia production, require substantial investment and collaboration across the group and have the potential to generate joint technological advances and economies of scale. In conclusion, PKT's decarbonization roadmap sets a strong precedent for its subsidiaries and encourages them to align their strategies with sustainable practices. Efforts need to be made to achieve long-term benefits of environmental management, economic efficiency and market competitiveness.

ESG and Sustainability Accounting Integration Aspects

PKT's activities demonstrate the increasing integration of ESG considerations into business operations and accounting practices. The company's approach to cost-benefit analysis for new projects, which includes ESG factors, also demonstrates how sustainability accounting is incorporated into the decision-making process. This approach is in line with stakeholder theory, as the company considers the impact of its operations on various stakeholders, including local communities and the environment. This is evidenced by the company's CSR programs and environmental initiatives.

The company's high level of compliance with government regulations, such as the State Officials' Wealth Report (LHKPN), and its proactive approach to ESG initiatives demonstrate a response to both coercive (regulatory) and normative (industry standards) institutional pressures. Although the CCP has made significant strides in implementing ESG initiatives, the lack of a standardized reporting framework and industry-specific regulations (e.g., for carbon trading in the fertilizer industry) present challenges in measuring and reporting ESG performance. The company's willingness to invest in high-cost renewable energy technologies demonstrates a focus on long-term value creation, which is in line with sustainability accounting principles. However, this approach requires careful justification and management support to balance short-term financial pressures.

The case highlights the crucial role of top management in driving ESG initiatives and resolving conflicts between different departments' perspectives on ESG investments. PKT's experience shows that ESG and sustainable accounting practices are continually evolving, requiring ongoing learning and adaptation from both the company and its employees. Efforts made by PKT provide valuable insights into the practical challenges and approaches to integrating ESG investments and sustainable accounting in a large industrial company. It demonstrates the importance of management support, long-term thinking, and the need for flexible approaches to address the complex and evolving nature of ESG considerations. There are several practical aspects to integrating ESG with sustainability accounting on fertilizer industry.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

This study aims to explore the integration of Environmental, Social, and Governance (ESG) investments and sustainability accounting practices in achieving the Sustainable Development Goals (SDGs) at PT Pupuk Kalimantan Timur (PKT) and its subsidiary PT Kaltim Industrial Estate (KIE). The results of this study show that PKT and its subsidiary KIE have taken a proactive approach to ESG adoption, as a strategic initiative, that emphasizes governance compliance, ethical business practices, and environmental responsibility. In addition, the companies have also implemented a comprehensive decarbonization roadmap, demonstrating their commitment to long-term environmental management and alignment with the Sustainable Development Goals (SDGs).

The results of this study also provide insights into the decision-making process for ESG projects, highlighting the importance of cost-benefit analysis in balancing economic feasibility and sustainability objectives. PKT and KIE have demonstrated their willingness to invest in renewable technologies and plant revitalization with consideration of long-term benefits despite the high initial costs of such investments. Integrating ESG investments into core business strategies and sustainability accounting practices allows for better risk management and opportunities for ESG practices, potentially leading to improved overall performance. The study also highlights the important role of management in driving ESG initiatives and resolving conflicts between different departmental perspectives on ESG investments. The companies' approaches are in line with stakeholder theory, considering the impacts of their operations on multiple stakeholders, including local communities and the environment.

The findings of this study have several implications for sustainable development in the fertilizer industry. First, the integration of ESG strategies can lead to increased corporate profitability while preserving the environment and supporting community welfare. This demonstrates that sustainability and profitability are not mutually exclusive but can be mutually reinforcing. Second, this study highlights the importance of transparent reporting and governance structures in supporting ESG practices. The adoption of international reporting standards and regular sustainability reporting can enhance accountability and stakeholder trust. Third, this study underscores the value of long-term thinking in ESG investments. While some initiatives may have high initial costs, their long-term benefits can justify the investment, both in terms of environmental impact and economic returns.

This study focuses on a single case study of PKT and its subsidiary KIE, thus limiting the generalizability of the findings to other companies or industries. The study relies primarily on interviews and company documents, which may not cover all aspects of ESG implementation and its impacts. In addition, this study was conducted at a specific point in time, while the nature of ESG practices and regulations is evolving rapidly. Therefore, some findings may become outdated relatively quickly.

Future research is recommended to examine more companies in the fertilizer industry or compare practices across industries to provide a more comprehensive understanding of ESG integration and its impacts. Longitudinal studies tracking the long-term impact of ESG investments on financial performance and sustainability outcomes would be valuable in further validating the benefits of ESG integration. Research on developing a standard ESG reporting framework specific to the fertilizer industry could address some of the challenges in measuring and comparing ESG performance across companies. Finally, studies exploring the role of government policies and regulations in driving ESG adoption in the fertilizer industry could provide insights into how to accelerate the transition to more sustainable practices across the sector.

REFERENCES

Amel-Zadeh, A., & Serafeim, G. (2018). Why and how investors use ESG information: Evidence from a global survey. *Financial Analysts Journal*, *74*(3), 87-103. https://doi.org/10.2469/faj.v74.n3.2.

Andika, R., Wibowo, H., & Suryadi, T. (2020). Pengaruh limbah cair industri pupuk terhadap kualitas air di perairan. *Jurnal Lingkungan dan Ekosistem, 12*(4), 112-123.

Aliamutu, K., Bhana, A., & Suknunan, S. (2023). The impact of environmental costs on financial performance: an explorative analysis of two plastic companies. *Environmental Economics, 14*(1), 13-23. https://doi.org/10.21511/ee.14(1).2023.02.

Ayu, KR., Ulya, H., & Nuryanti. (2024). From profit to purpose: Sustainability and corporate strategy insights from Desa Inspirasi Padi. *Bricolage; Jurnal Magister Ilmu Komunikasi, 10*(1), 067 - 078

Deegan, C. (2002). Introduction: The legitimising effect of social and environmental disclosures – a theoretical foundation. *Accounting, Auditing & Accountability Journal, 15*(3), 282-311. https://doi.org/10.1108/09513570210435852.

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, *48*(2), 147-160. https://doi.org/10.2307/2095101

Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, *20*(1), 65-91. https://doi.org/10.2307/258887.

Freeman, R. E. (1995). The stakeholder approach revisited. *Zeitschrift für Wirtschafts- und Unternehmensethik,* 5(3), 228-241.

Gärling, T., Jansson, M. (2021). Sustainable Investment: Consequences for Psychological Well-Being. *Sustainability*, *13*(16), 1-10. https://doi.org/10.3390/su13169256.

Gray, R., Adams, C. A., Owen, D. (2014). *Accountability, social responsibility and sustainability: Accounting for society and the environment*. Pearson Higher Ed.

Greenwood, M. (2007). Stakeholder engagement: Beyond the myth of corporate responsibility. *Journal of Business Ethics*, *74*(4), 315-327. https://doi.org/10.1007/s10551-007-9509-y.

Hartatik, W., & Widowati, W. (2015). Dampak penggunaan pupuk kimia terhadap kualitas tanah dan air. *Jurnal Pertanian Berkelanjutan, 23*(2), 45-58.

Henisz, W. J., Koller, T., & Nuttall, R. (2019). *Five ways that ESG creates value.* McKinsey Quarterly.

Ioannou, I., & Serafeim, G. (2015). The impact of corporate social responsibility on investment recommendations: Analysts' perceptions and shifting institutional logics. *Strategic Management Journal, 36*(7), 1053-1081. https://doi.org/10.1002/smj.2268.

Jensen, M. C. (2001). Value maximization, stakeholder theory, and the corporate objective function. *Journal of Applied Corporate Finance*, *14*(3), 8-21. https://doi.org/10.1111/j.17456622.2001.tb00434.x.

Jian Li, Zhenghui Pan, Yang Sun, Wei Zheng, Zhisheng Zhang, Zhifang Wang. (2024). From Compliance to Strategy: Paradigm Shift in Corporate ESG Practices. *Academic Journal of Humanities & Social Sciences*, *7*(2): 185-193. https://doi.org/10.25236/AJHSS.2024.070225.

Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review*, *22*(4), 853-886. https://doi.org/10.2307/259247.

Niehaus, G., & Pelton, J. N. (2023). Sustainability and Environmental, Social and Governance (ESG) Investing: *The Case of Satellite Companies and Space Debris. New Space*, *11*(1), 14-25.

OECD. (2015). G20/OECD *Principles of Corporate Governance.* OECD Publishing.

Putri, L., Ariana, I., Saputra, M. (2021). Environmental cost accounting treatment and their effect on financial statements and assessment of sustainability performance at pt alove bali. *Journal of Applied Sciences in Accounting Finance and Tax*, *4*(2),97-104. https://doi.org/10.31940/jasafint.v4i2.97-104.

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, *20*(3), 571-610. https://doi.org/10.2307/258788.

Sugiyono. (2020). *Metode Penelitian Kualitatif*. Bandung: Alfabeta

Taliento, M., Favino, C., & Netti, A. (2019). Impact of Environmental, Social, and Governance Information on Economic Performance: Evidence of a Corporate 'Sustainability Advantage' from Europe. *Sustainability, 11,* 1-26. https://doi.org/10.3390/su11061738.

Thornton, P. H., Ocasio, W., & Lounsbury, M. (2012). *The institutional logics perspective: A new approach to culture, structure, and process*. Oxford University Press.

Ting, I. W. K., Azizan, N. A. B., & Kweh, Q. L. (2019). Environmental, social, and governance disclosure and firm performance in Malaysia: An agency theory perspective. International *Journal of Managerial and Financial Accounting*, *11*(2), 145-163.

Yan, S., Ferraro, F., & Almandoz, J. (2019). The rise of socially responsible investment funds: The paradoxical role of the financial logic. *Administrative Science Quarterly*, *64*(2), 466-501. https://doi.org/10.1177/0001839218773324.

Appendix 3. Focus Areas, Implementation, Overall Impact, Challenges Aspect of ESG Initiatives and Sustainability Accounting Integration

Aspect	PKT (Parent Company)	KIE (Subsidiary)	Sustainability Accounting Practices
Focus Areas	Environmental initiatives: Decarbonization projects roadmap (use advanced technologies), Waste management, Emission reduction, and Energy efficiency Social initiatives: Community empowerment programs and CSR initiatives Governance initiatives: Transparency and Good governance policies (GRI & SE-OJK)	Environmental initiatives: Waste reduction through circular economy energy efficiency Social initiatives: Community development programs and PKT's CSR initiatives (Provision of Infrastructure for SMEs) Governance initiatives: Transparency in reporting to PKT Compliance (State Officials' Wealth Report / LHKPN)	Cost-benefit analysis for ESG investments to inform decision-making: investment costs, long-term benefits, potential savings, overall impact on sustainability goals, dedicated budgets for specific projects such as decarbonization, cost-effectiveness evaluations, and long-term benefits (plant overhaul) Integrating ESG initiatives into financial reporting and budgeting, tracking and reporting of ESG performance indicators, engaging with stakeholders on ESG issues Reporting and complying with government regulations, business ethics, and anti-fraud measures
Implementation	Cost-benefit analysis for ESG investment Integration of ESG into core operations Recognition the achievement of KIE into PKT's sustainability reporting	Implementing renewable technology Collaborating with PKT for knowledge sharing and technology	Integrating ESG data into its accounting systems Reporting ESG performance to PKT and external stakeholders
Overall Impact	Reduced greenhouse gas emissions Long-term benefits Enhanced reputation and competitiveness Increased attractiveness to ESG investors Shared value creation for stakeholders	Contributing to PKT's overall positive impact	Improving the quality of sustainability reporting by disclosing ESG initiatives
Challenges	Lack of standardized ESG reporting frameworks High costs of ESG investment Tactical decision making for ESG investment	Supporting PKT's decarbonization roadmap Integrating ESG considerations into its accounting and budgeting processes	Improving overall performance through ESG disclosure

Source: Data Processed, 2024