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# Analysis of How Environmental Accounting Practices Are Developed in Oil Palm Companies in East Aceh

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A R T I C L E I N F O

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A B S T R A C T

This study examines the effects of human resource competence, regulatory compliance, and internal control on financial reporting quality and further investigates the effect of financial reporting quality on managerial decision-making in vertical hospitals under the Ministry of Health of the Republic of Indonesia. The study employed a quantitative approach with a causal research design. Primary data were collected through structured questionnaires distributed to 37 financial reporting staff selected using a saturated sampling technique. Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4 to evaluate the proposed relationships among the research variables. The findings indicate that regulatory compliance has a positive and significant effect on financial reporting quality, whereas human resource competence and internal control do not have significant effects. In addition, financial reporting quality has a positive and significant effect on managerial decision-making. These results indicate that compliance with accounting standards and applicable regulatory requirements plays an important role in maintaining the quality of financial reporting within the observed hospital context. The findings also demonstrate that high-quality financial reports provide reliable and relevant information that supports more effective managerial decision-making. The study contributes to public sector accounting literature by providing empirical evidence regarding the determinants of financial reporting quality and its implications for organizational decision-making in government-affiliated hospitals. Practically, the findings emphasize the need to strengthen regulatory compliance and improve financial reporting processes. The study is limited by its small sample size and sector-specific setting, suggesting that future research should involve larger samples and broader institutional contexts.

## 1. Introduction

The palm oil industry is a strategic sector for Indonesia, contributing to exports, foreign exchange earnings, employment, and rural economic activity. Indonesia accounts for approximately 60% of global palm oil production (Husin et al., 2023), while crude palm oil (CPO) exports remain an important source of non-oil and gas foreign exchange (Dermoredjo et al., 2025). The sector also supports agricultural income, employment, and rural livelihoods (Sibhatu, 2023). In Aceh, oil palm plantations contribute to household income and surrounding communities, with East Aceh being one of the province's palm oil-producing areas (Zainal et al., 2024).

These economic contributions coexist with environmental pressures. Aceh recorded deforestation of 9,383 hectares in 2022, 8,906 hectares in 2023, and 10,610 hectares in 2024 (HAKA, 2024), while East Aceh recorded 1,096 hectares of deforestation (Antara News, 2025). Palm oil production is also associated with liquid and solid waste and environmental risks

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related to peatland conversion and carbon emissions (Nabila et al., 2023). International research further links palm oil sustainability with deforestation control, supply-chain traceability, and deforestation-free production (Lambin & Furumo, 2023).

These conditions increase the relevance of environmental accounting as an information framework for identifying, recognizing, measuring, recording, presenting, and disclosing environmental costs and impacts (Nyakuwanika & Panicker, 2025). Environmental management accounting can also provide information on materials, energy, waste, and other environmental costs relevant to environmental management and organizational decision-making (Ngoc, 2025). Thus, environmental accounting can be understood not only as a reporting practice but also as an organizational information system through which environmental costs and activities become visible within managerial processes.

Fiscal policy provides an additional context for environmental management. Environmental taxes and incentives are designed to incorporate environmental considerations into economic decisions and may support environmentally oriented investment and innovation. Recent studies associate environmental taxes with green innovation and ESG-related investment, although their relevance depends on policy design and organizational context (Li et al., 2024). Accordingly, this study treats green tax incentives as a contextual analytical theme rather than a causal determinant, focusing on organizational understanding, access, utilization, and reported administrative issues.

Environmental accounting practices are also shaped by broader social and institutional contexts. Legitimacy Theory relates environmental management and disclosure to organizational efforts to maintain social acceptance (Gezgin et al., 2024), while Stakeholder Theory emphasizes accountability toward parties affected by organizational activities (Mu et al., 2023). Relevant stakeholders in the palm oil sector may include government authorities, local communities, investors, consumers, and other parties concerned with environmental performance. Differences in sustainability disclosure and stakeholder engagement have also been associated with ESG assessments among Indonesian palm oil companies (Kujala et al., 2022). The Indonesian policy context further includes Government Regulation No. 38 of 2023 concerning the Oil Palm Plantation Revenue Sharing Fund, Qanun Aceh No. 2 of 2011 concerning environmental management, and fiscal facilities applicable to certain environmentally oriented activities and investments. However, the existence of these policies does not necessarily imply uniform environmental accounting or green fiscal practices because organizational capacity to identify, measure, document, and disclose environmental costs may differ.

Previous empirical studies have identified limitations in environmental cost classification and disclosure in palm oil companies. (Asmar & Tuqan, 2024) reported an 80% compliance rate in the case examined but identified weaknesses in disclosing external environmental failure costs. (Dharmawan et al., 2024) reported weaknesses in environmental disclosure, while (Azarkamand et al., 2024) identified limitations in detailed environmental cost classification. (Chiriacò et al., 2022) examined social, economic, and environmental impacts associated with palm oil companies without specifically connecting these impacts to environmental cost recording. Collectively, these studies suggest that environmental activities, environmental impacts, and fiscal policies have often been examined separately.

Within the literature reviewed, limited attention has been given to how environmental accounting practices are developed in palm oil companies in East Aceh while simultaneously considering stakeholder expectations, legitimacy considerations, institutional conditions, and green tax incentives as contextual analytical themes. This study addresses this gap through a qualitative case-

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study approach examining how these themes appear in the empirical accounts of the investigated cases. Its contribution therefore lies not simply in extending the geographical setting, but in providing a context-specific interpretation of environmental accounting within a particular institutional and fiscal environment.

Accordingly, this study explores how environmental accounting practices are developed in palm oil companies in East Aceh Regency and examines the contextual themes emerging from the investigated cases. Particular attention is given to six stages of environmental accounting: identification, recognition, measurement, recording, presentation, and disclosure, alongside stakeholder expectations, legitimacy considerations, institutional conditions, and green tax incentives. The study does not statistically test causal relationships; rather, it examines how these themes are reflected in organizational practices described by informants and supported by available evidence. The study is expected to contribute empirical insights into environmental accounting in the East Aceh palm oil context and demonstrate how existing theoretical perspectives can be jointly used to interpret these practices, while providing contextual information relevant to environmental cost reporting, accountability, and green fiscal policies.

## 2. Literature Review

### 2.1 Conceptual and Theoretical Foundations

Environmental accounting is a strategic information system that enables companies to identify, measure, record, present, and disclose environmental costs and impacts arising from operational activities. In the palm oil industry, it also represents an organizational response to sustainability pressures related to deforestation, environmental degradation, carbon emissions, and social responsibility. Accordingly, environmental accounting connects environmental responsibility with corporate decision-making and sustainability considerations.

The theoretical perspectives in this study are positioned as complementary analytical lenses rather than statistically testable variables. Legitimacy Theory explains how organizations seek alignment with societal values, norms, and expectations (Dowling & Pfeffer, 1975). In the palm oil context, environmental accounting can make environmental activities and responsibilities visible to external audiences. Stakeholder Theory emphasizes organizational accountability to parties affected by or interested in corporate activities, including government authorities, communities, employees, customers, investors, and environmental organizations (Crossley et al., 2021). It therefore provides a lens for interpreting stakeholder expectations and environmental accountability without assuming a predetermined causal relationship.

Institutional Theory provides a lens for examining formal and informal conditions surrounding environmental accounting practices (Dimaggio & Powell, 1983). The study distinguishes three forms of institutional pressure: coercive, arising from government regulations, legal obligations, and reporting requirements; normative, associated with professional and sustainability standards, certification systems, and accepted practices; and mimetic, involving conscious imitation or benchmarking of other organizations. Similarities in practices alone are not treated as evidence of institutional isomorphism. Coercive or normative conditions are considered where supported by empirical evidence, while mimetic isomorphism is considered only where informants explicitly indicate organizational imitation or reference to other organizations.

The Triple Bottom Line (TBL) perspective complements these theories by considering economic, social, and environmental dimensions of organizational sustainability. The Triple Bottom Line (TBL) perspective complements these theories by considering economic, social, and environmental

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dimensions of organizational sustainability (Elkington, 1998). It is used to interpret how environmental considerations coexist with social responsibilities and economic objectives in the investigated cases, rather than as an additional causal factor.

Green tax incentives are included as an economic and policy-related contextual theme. Environmental accounting may provide information on environmental costs and investments, while fiscal incentives represent policy instruments relevant to environmentally oriented activities. However, the presence of an incentive does not necessarily imply its utilization, and the qualitative design does not permit causal assessment of its effects on environmental accounting. The analysis therefore focuses on organizational awareness, understanding, administrative experience, and reported use or non-use of such incentives.

Taken together, these perspectives provide a multidimensional interpretation of environmental accounting practices within the investigated cases. Legitimacy Theory addresses social acceptance and environmental accountability; Stakeholder Theory addresses expectations and accountability toward relevant parties; Institutional Theory examines coercive, normative, and empirically supported mimetic conditions; and the TBL perspective connects environmental considerations with social and economic dimensions. Accordingly, environmental accounting is positioned as the central phenomenon, while legitimacy considerations, stakeholder expectations, institutional conditions, and green tax incentives serve as contextual analytical themes. This framework guides the interview questions, observation, and documentary analysis while allowing additional themes to emerge from the empirical data. The findings are then used to refine the theoretical interpretation rather than statistically test predetermined relationships.

## 2.2 Review of Empirical Studies

Recent studies indicate growing attention to environmental accounting as a means of improving environmental cost transparency, corporate accountability, and sustainability strategies (Meiryani et al., 2022). Empirical evidence also suggests that environmental accounting practices are contextually shaped by regulatory pressures, stakeholder expectations, and legitimacy considerations (Nguyen, 2024). In Indonesia, studies of palm oil companies in regions such as North Sumatra, Riau, and Kalimantan generally report that companies identify and classify environmental costs but remain limited in disclosing environmental failure costs and integrating environmental accounting into comprehensive management accounting systems (Supriatna et al., 2024). Existing studies therefore provide useful evidence of environmental accounting practices but often examine reporting compliance, institutional conditions, or economic incentives separately.

International and cross-sector studies further demonstrate the contextual nature of environmental accounting. (Xia et al., 2025) for example, found a contribution of environmental management accounting to company performance in the manufacturing sector in Bangladesh, limiting direct applicability to the palm oil plantation context. Similarly, research on MSMEs and the fisheries sector has examined environmental accounting stages but has not integrated organizational conditions and fiscal incentive policies into the analysis (Derhab & Elkhwesky, 2022).

Overall, previous research provides evidence on environmental accounting practices across sectors and contexts, but limited attention has been given to the integrated interpretation of environmental accounting, stakeholder expectations, legitimacy considerations, institutional conditions, and green tax incentives within palm oil companies at the local level.

## 2.3 Identification of the Research Gap

Based on recent empirical studies, several gaps remain in environmental accounting research in the palm oil industry. First, previous studies in Indonesia have mainly examined

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environmental accounting in regions such as North Sumatra, Riau, and Kalimantan, while empirical evidence from East Aceh remains limited. This contextual gap is relevant because environmental accounting practices are shaped by specific organizational, environmental, regulatory, and institutional conditions.

Second, previous studies have identified weaknesses in environmental cost classification, recording, and disclosure (Asmar & Tuqan, 2024). However, limited attention has been given to examining the six stages of environmental accounting, namely identification, recognition, measurement, recording, presentation, and disclosure, as an interconnected qualitative process within palm oil companies.

Third, environmental accounting, stakeholder expectations, legitimacy considerations, institutional conditions, and fiscal policies have often been examined separately. Limited qualitative evidence explains how these contextual themes coexist within environmental accounting practices, particularly regarding companies' awareness, understanding, and utilization of green tax incentives. Therefore, this study treats these concepts as complementary analytical themes rather than statistically testable causal variables.

Fourth, previous research has provided limited in-depth qualitative cross-case evidence concerning how environmental accounting practices are developed within palm oil companies and how institutional and fiscal contexts are interpreted by organizational actors. Accordingly, this study addresses the identified gaps by examining five purposively selected palm oil company cases in East Aceh through semi-structured interviews and cross-case qualitative analysis. The contribution of the study is therefore not merely geographical, but lies in providing contextual empirical evidence on the development of environmental accounting practices and the role of stakeholder, legitimacy, institutional, and green tax incentive themes within the investigated cases.

### 2.4 Development of the Conceptual Framework

The conceptual framework was developed from the environmental accounting literature and theoretical perspectives discussed above. Rather than representing a causal model, it provides an analytical structure for examining environmental accounting as the central phenomenon, focusing on six stages: identification, recognition, measurement, recording, presentation, and disclosure of environmental costs and activities. Four contextual analytical themes are considered alongside this phenomenon: legitimacy considerations, concerning environmental responsibility, transparency, and social acceptance; stakeholder expectations, concerning accountability relationships with government authorities, communities, customers, investors, and other relevant parties; institutional conditions, examined through coercive, normative, and, where empirically supported, mimetic mechanisms; and green tax incentives, examined in relation to organizational awareness, understanding, administrative requirements, and utilization.

The framework does not assume that these themes cause or determine environmental accounting practices. Instead, they guide empirical inquiry and provide categories for organizing and interpreting interview statements, observations, and documentary evidence while allowing additional themes to emerge. These categories informed the semi-structured interview guide, observation checklist, and document-analysis format. Data collection focused on the six environmental accounting stages and the four contextual themes, while observations and documentary evidence were used, where available, to corroborate or qualify interview accounts.

During analysis, the empirical evidence was organized according to the six environmental accounting stages and contextual themes, followed by cross-case comparison to identify similarities, differences, and distinctive patterns among the investigated

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cases. The theoretical perspectives were subsequently used to interpret these patterns rather than test predetermined causal propositions. The framework therefore functions as a flexible analytical guide connecting theoretical concepts, empirical evidence, and qualitative interpretation.

### 2.5 Hypotheses or Research Propositions

The research propositions are derived from the conceptual framework, which positions environmental accounting as the central phenomenon and stakeholder expectations, legitimacy considerations, institutional conditions, and green tax incentives as contextual analytical themes. Legitimacy Theory, Stakeholder Theory, Institutional Theory, and the Triple Bottom Line provide complementary perspectives for interpreting how environmental accounting practices are situated within social, institutional, and economic contexts (Brown & Deegan, 1998).

Proposition 1**:** Legitimacy considerations may provide a contextual lens for understanding how environmental accounting and environmental disclosure are described by palm oil companies responding to societal expectations concerning environmental responsibility and impacts(Swalih et al., 2024). Proposition 2**:** Stakeholder expectations may help explain how environmental accounting practices are described in relation to accountability toward government authorities, local communities, international institutions, and other relevant stakeholders (Putri et al., 2022). Proposition 3: Institutional conditions, particularly regulatory and normative requirements, may provide a contextual explanation for the development of formal environmental accounting practices in palm oil companies (Bhuiyan et al., 2023). Mimetic mechanisms are considered only where empirical evidence indicates explicit organizational imitation or benchmarking. Proposition 4: Green tax incentives may provide an economic and policy-related context for understanding organizational awareness, utilization, and administrative experiences concerning environmentally oriented activities (Shahimi et al., 2023). Their presence is not assumed to constitute a causal driver of environmental accounting practices.

Collectively, these propositions guide the qualitative inquiry into how environmental accounting practices are described and contextualized within the investigated cases. They are not intended as statistically testable hypotheses or causal relationships, but as analytical propositions that inform data collection and interpretation.

## 3. Research Methods

This study employs a qualitative approach to examine how environmental accounting practices are developed in palm oil companies in East Aceh Regency. The approach was selected to explore the contextual meanings, processes, and practices of environmental accounting from the perspectives of relevant organizational actors (Almeflh & Almofleh, 2025). The study uses a qualitative descriptive-exploratory case-study design, appropriate for examining environmental accounting practices within their real organizational context (Grabs & Garrett, 2023). The conceptual framework positions stakeholder expectations, legitimacy considerations, institutional conditions, and green tax incentives as contextual analytical themes rather than causal variables.

The research was conducted in East Aceh Regency, Aceh Province, focusing on palm oil companies operating in the region. Informants were selected purposively based on their knowledge and involvement in environmental accounting, environmental management, accounting or finance, sustainability, or related activities. Primary data were obtained through semi-structured interviews and, where available, observations of environmental management practices, while secondary evidence included sustainability reports, financial documents, environmental policies, and relevant government regulations. These sources were used to support qualitative interpretation and triangulation.

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Data were collected through semi-structured interviews, non-participant observations, and documentation. Interviews explored the six environmental accounting stages, stakeholder expectations, legitimacy considerations, institutional conditions, and awareness and utilization of green tax incentives. Observations and documentary analysis were used, where accessible, to corroborate or qualify interview accounts. The researcher served as the main research instrument, supported by interview guidelines, observation checklists, and document-analysis formats developed from the conceptual framework. Expert judgment and readability assessment were conducted before data collection to assess the relevance and clarity of the instruments.

Data trustworthiness was supported through source and method triangulation, comparison of interview accounts with available observations and documents, and member checking to reconfirm relevant interpretations with informants. These procedures were used to strengthen credibility and reduce potential misinterpretation, consistent with qualitative trustworthiness principles (Zainal et al., 2024).

The analysis followed the interactive approach of (Miles et al., 1994), involving data reduction, data presentation, and conclusion drawing. Interview and supporting evidence were organized according to the six environmental accounting stages and contextual analytical themes, followed by thematic and cross-case comparison to identify recurring patterns, differences, and distinctive case characteristics.

The analysis remained exploratory, allowing additional themes to emerge when relevant evidence did not fit the initial analytical categories. Theoretical perspectives were subsequently used to interpret the empirical patterns rather than to statistically test predetermined causal relationships. This analytical procedure maintained consistency between the qualitative case-study design, conceptual framework, data collection, and interpretation of findings.

Ethical procedures included informing informants about the research purpose, obtaining informed consent before interviews, and maintaining the confidentiality of informant and organizational identities. Academic integrity was maintained throughout the research process, including accurate treatment and reporting of empirical evidence. Overall, the methodology was designed to provide an in-depth, context-specific account of environmental accounting practices within the investigated palm oil company cases in East Aceh.

### 3.1 Research Design

This study employs a qualitative descriptive-exploratory case-study design to examine how environmental accounting practices are developed in palm oil companies in East Aceh Regency. The qualitative approach focuses on participants' experiences, organizational practices, explanations, and contextual meanings rather than statistically testing relationships among predetermined variables. The broader research context comprises palm oil companies operating in East Aceh, while the empirical cases consist of purposively selected companies represented by relevant informants. Accordingly, the findings are not intended to be statistically representative of all palm oil companies in East Aceh.

The study describes environmental accounting across six stages: identification, recognition, measurement, recording, presentation, and disclosure, while exploring stakeholder expectations, legitimacy considerations, institutional conditions, and green tax incentives as qualitative analytical themes. The conceptual framework informed the semi-structured interview guide and broad areas of inquiry, while the exploratory design allowed participants to introduce additional relevant information. During analysis, interview evidence was organized according to the six stages and contextual themes, with emerging

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patterns retained for further interpretation. Thus, the framework informed data collection and analysis without functioning as a deductive causal model.

Cross-case comparison was used to identify similarities, differences, and distinctive patterns among the investigated cases. The interpretation remained bounded by the evidence obtained from the participating informants and available supporting evidence. The resulting findings are therefore presented as context-specific qualitative evidence and analytical insights from the investigated cases rather than generalized causal conclusions.

### 3.2 Research Context and Setting

This study is situated in the palm oil industry of East Aceh Regency, Aceh Province, Indonesia. East Aceh was selected because of its established palm oil sector and the limited empirical attention given to environmental accounting practices in this local context. The setting provides an appropriate context for examining environmental accounting alongside the social, institutional, and fiscal conditions described by the investigated cases.

The broader research context was identified using administrative records of palm oil companies holding Right to Cultivate (HGU) rights in East Aceh for 2024–2025. Here, Right to Cultivate (HGU) refers to *Hak Guna Usaha*, the Indonesian legal category of land rights applicable to plantation activities. The records identified 32 palm oil company entities, which represent the broader research population or sampling frame rather than directly investigated cases. The empirical analysis is bounded by the purposively selected cases and informants from whom primary qualitative evidence was obtained; therefore, the findings are not statistically generalized to all 32 entities.

The research setting supports examination of the six environmental accounting stages: identification, recognition, measurement, recording, presentation, and disclosure, together with stakeholder expectations, legitimacy considerations, institutional conditions, and green tax incentives as qualitative analytical themes. East Aceh therefore serves a contextual rather than statistical purpose, with the findings providing in-depth evidence from the investigated cases that may inform comparison with other palm oil settings where contextual conditions are comparable.

### 3.3 Population and Sample / Research Participants

The broader research population comprised 32 palm oil company entities operating in East Aceh Regency and identified through the 2024–2025 Right to Cultivate (HGU) records. These entities represent the broader population and sampling frame rather than directly investigated cases. Five company cases were purposively selected based on their relevance to the research questions and the availability of informants with direct knowledge of environmental accounting, environmental management, accounting or finance, sustainability, or related activities. Inclusion criteria required relevant organizational knowledge or involvement, sufficient experience, familiarity with environmental costs, reporting or management practices, and willingness to participate; individuals lacking relevant knowledge or unwilling to participate were excluded.

Five key informants representing five investigated cases constituted the direct empirical basis of the qualitative analysis. Their organizational roles provided relevant information on environmental cost identification, recognition, measurement, recording, presentation, disclosure, environmental management, and the contextual analytical themes. To maintain confidentiality, the companies and informants are identified as Case A, Case B, Case C, Case D, and Case E. The empirical evidence was derived primarily from semi-structured interviews, supported where available by relevant observations and documentary evidence. Participant selection emphasized relevance and information richness rather than statistical representation.

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The adequacy of the sample was assessed through an iterative process of thematic analysis and information saturation. Saturation was considered when subsequent interview information no longer generated substantially new themes relevant to the research questions, rather than according to a predetermined numerical threshold. Accordingly, the five cases provide in-depth qualitative evidence from which similarities, differences, and contextual interpretations can be developed, while the findings are not statistically representative of the broader population of 32 companies.

### 3.4 Data Sources and Data Collection

Primary empirical data were obtained through semi-structured interviews with five purposively selected key informants representing the five investigated company cases. Informants had relevant knowledge or organizational involvement in environmental accounting, environmental management, finance or accounting, sustainability, or related activities. The interview guide covered three areas: (1) the six environmental accounting stages of identification, recognition, measurement, recording, presentation, and disclosure; (2) contextual themes concerning stakeholder expectations, legitimacy considerations, institutional conditions, and organizational support or constraints; and (3) awareness, understanding, utilization, barriers, and organizational responses concerning green tax incentives. The semi-structured format ensured consistency across cases while allowing clarification and follow-up questions.

The interviews focused on informants' actual knowledge and experiences rather than numerical measurement of perceptions. No Likert scale or statistical scoring procedure was used. Interview responses were treated as qualitative information and interpreted according to their content and meaning. The evidence was organized according to the six environmental accounting stages and the four contextual analytical themes, while information outside the initial categories was retained for further examination to allow emerging themes to be identified.

Cross-case comparison was conducted by comparing accounts from Case A, Case B, Case C, Case D, and Case E to identify similarities, differences, and case-specific patterns. Credibility was supported by comparing information across cases and reconfirming relevant interpretations with informants through member checking. The study therefore relies primarily on interview-based evidence and does not claim methodological triangulation through observation or company-document analysis where such evidence was not directly collected.

Before each interview, participants were informed of the research purpose and provided informed consent. They were also informed that the information would be used for academic purposes and that their identities and company identities would remain confidential through anonymized case codes. The interview data were subsequently prepared for qualitative analysis while maintaining participant confidentiality.

### 3.5 Measurement of Variables and Research Instruments

The research instrument was developed in accordance with the qualitative case-study design and conceptual framework. The study does not operationalize theoretical concepts as statistically measurable variables; instead, environmental accounting practices constitute the central analytical theme, while stakeholder expectations, legitimacy considerations, institutional conditions, and green tax incentives serve as contextual analytical themes. Environmental accounting was examined through six stages: identification, recognition, measurement, recording, presentation, and disclosure of environmental costs and activities. The contextual themes were explored through participants' accounts of stakeholder relationships, environmental responsibility and social acceptance, regulatory and professional requirements, certification and organizational practices, and awareness,

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utilization, administrative experiences, and barriers concerning green tax incentives.

The semi-structured interview guide was organized into three areas: environmental accounting practices; contextual conditions surrounding environmental accounting; and awareness, utilization, barriers, and organizational responses concerning green tax incentives. The questions were designed to obtain descriptive and explanatory accounts rather than numerical ratings. No Likert scale, numerical scoring, or statistical measurement was used. Responses were analyzed qualitatively based on their content, meaning, recurrence, similarities, and differences across cases. Categories therefore represented thematic classifications derived from the conceptual framework and empirical evidence rather than numerical levels of measurement.

The interview guide was developed with reference to environmental accounting and sustainability literature, including concepts associated with Schaltegger, Burritt, Gray, and Deegan, and was adapted to the organizational and environmental context of the East Aceh palm oil industry. Before data collection, the questions were reviewed for clarity and relevance to the research questions. The researcher served as the primary research instrument, supported by the interview guide and procedures for recording and organizing interview information. Instrument credibility was supported through consistency of questioning across cases, comparison of informant responses, clarification of ambiguous information, and member checking where necessary.

### 3.6 Data Analysis Techniques

Data analysis followed a qualitative thematic and cross-case approach consistent with the descriptive-exploratory case-study design. The process was iterative and involved data condensation, coding, thematic categorization, cross-case comparison, interpretation, and conclusion drawing and verification, following the interactive qualitative analysis principles of (Miles et al., 1994). Interview information was first organized according to the six environmental accounting stages: identification, recognition, measurement, recording, presentation, and disclosure, while contextual information was classified into stakeholder expectations, legitimacy considerations, institutional conditions, and green tax incentives. At this stage, the analysis remained close to informants' statements to distinguish reported practices from subsequent interpretation.

Thematic coding then identified recurring meanings, similarities, differences, and distinctive patterns within and across cases. Both deductive categories from the conceptual framework and inductive themes emerging from the data were retained. Statements that did not fit the initial categories were examined as potential emerging themes rather than excluded. Cross-case comparison of Case A, Case B, Case C, Case D, and Case E examined convergence and divergence in environmental accounting practices, particularly environmental cost classification, recording, presentation, disclosure, environmental activities, and awareness or utilization of green tax incentives. The comparison was used to identify patterns within the investigated cases rather than statistically generalize findings to the broader population of 32 companies.

The identified patterns were subsequently interpreted through the theoretical framework. Legitimacy Theory was used to interpret environmental accountability and social acceptance; Stakeholder Theory to examine expectations and accountability relationships; Institutional Theory to identify coercive, normative, and, where explicitly supported, mimetic conditions; and the Triple Bottom Line perspective to interpret environmental, social, and economic considerations. Green tax incentives were interpreted as an economic and policy-related contextual theme rather than a causal determinant.

Throughout the analysis, empirical evidence was distinguished from theoretical interpretation. Informants' statements were

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treated as empirical evidence, while connections between those statements and theoretical perspectives were treated as researcher interpretation. Conclusions were developed progressively by reviewing coded evidence against the research questions and reconfirming relevant information with informants when clarification was required. The final interpretation therefore resulted from iterative coding, within-case analysis, cross-case comparison, and theoretical interpretation.

### 3.7 Validity, Reliability, and Trustworthiness

The trustworthiness of the qualitative findings was assessed using the criteria of credibility, dependability, confirmability, and transferability (Shenton, 2004). As the study relies primarily on semi-structured interviews, trustworthiness procedures were aligned with the actual data sources and analytical process. Credibility was supported through purposive selection of knowledgeable informants, consistent use of the interview guide, comparison of responses across cases, clarification of ambiguous information, and member checking where necessary. The distinction between participants' statements and subsequent researcher interpretation was maintained throughout coding and analysis.

Dependability was supported by systematically documenting participant selection, interview procedures, coding, thematic categorization, and cross-case comparison, with consistent analytical procedures applied across the five cases. Confirmability was strengthened by tracing interpretations to interview evidence, avoiding predetermined theoretical conclusions, and retaining statements that did not fit the initial analytical categories. This ensured that the findings remained grounded in participants' accounts rather than solely in researcher expectations.

Transferability was addressed through clear description of the research context, population, case-selection process, participant characteristics, analytical themes, and boundaries of the investigated cases. The findings are not presented as statistically representative of all palm oil companies in East Aceh; instead, the contextual description enables readers to assess their relevance to settings with similar organizational, environmental, and institutional characteristics. Overall, these procedures were intended to ensure that the findings were credible, traceable, and appropriately bounded by the evidence obtained from the five investigated cases.

### 3.8 Ethical Considerations

This study adhered to the ethical principles of qualitative research, particularly the protection of participants' rights, dignity, privacy, and confidentiality. Participants were informed about the research purpose, participation, use of interview information for academic purposes, and the limits of their organizational knowledge and authority, and informed consent was obtained before interviews. Participant and company identities were protected through anonymized case codes (Case A–Case E), while potentially identifying information was excluded unless disclosure was necessary and authorized. Interview information was handled confidentially and used solely for academic purposes, with care taken to avoid unnecessary reputational, professional, or organizational risks.

The study also maintained research integrity by reporting participants' accounts accurately and avoiding fabrication, manipulation, or selective alteration of findings. Participants' statements were clearly distinguished from subsequent analytical interpretations, and consistency was maintained among the empirical evidence, analytical procedures, and conclusions.

### 3.9 Research Procedure

The research procedure followed interconnected stages consistent with the qualitative descriptive-exploratory case-study design. First, the research problem and questions were defined, followed by a literature

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review to establish the conceptual and theoretical framework and relevant analytical themes. The research context and broader population were then identified using Right to Cultivate (HGU) records, which identified 32 palm oil company entities. From this context, the investigated cases and informants were purposively selected according to the inclusion criteria described in Section 3.3. A semi-structured interview guide was subsequently developed around environmental accounting practices, contextual analytical themes, and green tax incentives and reviewed for clarity and relevance.

The next stage involved conducting semi-structured interviews with five key informants representing the investigated cases, with the interview information serving as the principal empirical basis of the study. The data were then condensed and coded according to the six environmental accounting stages and contextual analytical themes, while additional themes emerging from participants' accounts were retained for analysis. Within-case and cross-case analysis was subsequently conducted to identify similarities, differences, and distinctive patterns and to distinguish common findings from case-specific evidence.

Finally, the empirical patterns were interpreted through the theoretical perspectives established in the conceptual framework and conclusions were drawn in relation to the research questions. The analysis maintained a distinction between participants' statements and subsequent theoretical interpretation, and conclusions remained bounded by evidence from the five investigated cases. Where clarification was required, relevant information was reconfirmed with the respective informant.

### 3.10 Methodological Limitations

This study has several methodological limitations. First, the empirical analysis is based on five purposively selected company cases and five key informants from a broader research context of 32 palm oil company entities identified through Right to Cultivate (HGU) records. The 32 entities represent the broader population and sampling frame rather than directly investigated cases; therefore, the findings are not statistically representative of all palm oil companies in East Aceh. Second, the primary evidence was obtained through semi-structured interviews, which may be influenced by participants' recall, interpretation, organizational position, limited access to internal information, or reluctance to disclose sensitive information. Normative or socially desirable responses may also affect the accounts provided.

Third, the findings reflect the specific institutional and organizational context of East Aceh, and their transferability to other regions depends on contextual similarity. The qualitative design also does not permit statistical estimation of the relative influence of stakeholder expectations, legitimacy considerations, institutional conditions, or green tax incentives. These concepts are therefore interpreted as contextual analytical themes rather than statistically testable causal variables. In addition, the available evidence does not establish all forms of institutional isomorphism with equal certainty. Similarities between cases are not interpreted as mimetic isomorphism unless informants explicitly describe imitation, benchmarking, or reference to other organizations, while interpretations of coercive and normative conditions remain bounded by the evidence provided.

These limitations define the boundaries within which the findings should be interpreted rather than invalidating the qualitative evidence. Future research may expand the number of cases, include additional stakeholder groups, incorporate documentary or observational evidence where available, and employ longitudinal or mixed-method designs to examine whether the identified patterns are also observed in other palm oil settings.

## 4. Results and Discussion

The empirical findings are based on five investigated company cases selected purposively from the broader research context

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of 32 palm oil company entities identified through Right to Cultivate (HGU) records for the 2024–2025 period. The 32 entities represent the broader population and sampling frame, whereas the five investigated cases constitute the direct empirical basis of the qualitative analysis. To protect organizational confidentiality, the cases are presented as Case A, Case B, Case C, Case D, and Case E.

The HGU records provide contextual information concerning the scale and organizational composition of the palm oil sector in East Aceh, but they are not treated as evidence of environmental accounting practices for all 32 entities. The environmental accounting findings presented in this section are derived primarily from the accounts of the five selected informants representing the investigated cases. Accordingly, statements concerning similarities or differences in environmental accounting practices refer to the five investigated cases unless explicitly stated otherwise.

The cross-case analysis focuses on the six stages of environmental accounting identified in the conceptual framework: identification, recognition, measurement, recording, presentation, and disclosure. The analysis also examines stakeholder expectations, legitimacy considerations, institutional conditions, and green tax incentives as contextual analytical themes. The findings are presented first as empirical patterns reported by the informants and are subsequently interpreted in relation to the theoretical perspectives discussed in the literature review.

### 4.1 Research Results

The findings are presented based on the interview evidence obtained from the five investigated cases. The analysis does not use numerical scoring or statistical testing. Instead, the findings were developed through thematic coding and cross-case comparison of the informants' accounts. The presentation distinguishes between information directly reported by the informants and the subsequent interpretation of recurring patterns across the cases.

The findings are organized into four interconnected areas: (1) the development of environmental accounting practices across the six accounting stages; (2) contextual themes surrounding environmental accounting, including stakeholder expectations, legitimacy considerations, and institutional conditions; (3) organizational understanding and utilization of green tax incentives; and (4) similarities and differences identified through cross-case comparison.

The quality of the data in this study is determined based on the completeness of the information obtained in the field, the consistency of the informant's answers, and the suitability of the data with the focus of the research on how environmental accounting practices are developed in palm oil companies in East Aceh. Strengthening data quality is carried out through triangulation of sources, namely by comparing information obtained from company informants, results of field observations, and company documents such as financial statements and sustainability reports. In addition, triangulation methods are also used through a combination of semi-structured interviews, non-participant observations, and documentation. Data validation is strengthened through a member check process for informants to ensure the suitability between the data collected and the information submitted. The data is declared worthy of analysis after showing a pattern of information recurrence that indicates the achievement of data saturation (data saturation).

The interview findings indicate that environmental accounting practices in the five investigated cases can be examined through six stages: identification, recognition, measurement, recording, presentation, and disclosure. The evidence indicates that the six stages were not developed with the same degree of consistency across cases. In particular, the reported practices were more clearly evident at the identification, recognition, measurement, and recording stages, whereas

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presentation and disclosure showed greater variation among the investigated cases.

The following analysis distinguishes the information directly reported by the informants from the researchers' cross-case interpretation. The cases are identified as Case A, Case B, Case C, Case D, and Case E to maintain organizational confidentiality.

**Table 1. Evidence Matrix of Environmental Accounting Practices Across Investigated Cases**

| Environmental accounting stage | Empirical focus | Evidence identified from interviews | Cross-case interpretation |
|---|---|---|---|
| Identification | Identification of environmental-related costs and activities | Informants described environmental costs and activities associated with waste management, environmental maintenance, rehabilitation, conservation, monitoring, CSR, and other environmental activities. | Environmental-related expenditures are recognized as identifiable components of company activities, although the scope of identified costs differs across cases. |
| Recognition | How identified environmental costs are recognized in accounting practices | Informants reported that environmental-related costs may be recorded within operational, general, CSR, or other organizational cost categories. | Recognition exists within organizational accounting practices, but the classification of environmental costs is not fully uniform across cases. |
| Measurement | Basis used to determine environmental cost amounts | Informants described environmental costs in relation to actual expenditures incurred for environmental management activities. | Measurement is present as part of routine cost recording, but the interview evidence does not establish a single standardized measurement procedure across all cases. |
| Recording | Recording and storage of environmental cost information | Informants described routine recording of environmental-related expenditures and the use of organizational accounting or digital information systems. | Recording is more systematically embedded in organizational processes than presentation and disclosure, although separate environmental accounts are not consistently reported across cases. |
| Presentation | Presentation of environmental information in internal or external reporting | Informants reported different practices concerning the presentation of environmental information, including CSR and sustainability-related reporting. | Presentation practices vary across cases, indicating that environmental information is not presented through a fully uniform reporting structure. |
| Disclosure | Disclosure of environmental activities and costs | Informants reported environmental information through CSR and/or sustainability-related reporting, but the extent and detail of disclosure differed across cases. | Disclosure represents the most heterogeneous stage, particularly in the level of detail and degree of standardization. |

At the identification stage, the interview accounts indicate that environmental-related expenditures are recognized as part of operational environmental activities. The

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reported categories include waste management, environmental maintenance, rehabilitation, conservation, monitoring, and social or environmental CSR activities. The evidence therefore indicates that environmental costs are identifiable within the companies' activities, although the types of costs emphasized by informants differed across cases.

At the recognition and recording stages, the informants described environmental expenditures as being incorporated into organizational cost records. The available accounts indicate that such expenditures may be included within operational, general, CSR, or other relevant cost classifications. This suggests that environmental costs are recognized within existing accounting and administrative processes, but the empirical evidence does not support the conclusion that all investigated cases apply an identical classification system.

The measurement stage was described mainly in relation to expenditures actually incurred for environmental management activities. The interview evidence therefore indicates the existence of monetary measurement of environmental activities, but it does not establish a standardized environmental cost measurement framework that is uniformly applied across the five cases. This distinction is important because the presence of monetary cost information does not by itself demonstrate the existence of a fully integrated environmental accounting system.

At the recording stage, the interview findings indicate that environmental-related expenditures are recorded as part of organizational financial or administrative processes. Some cases reported more systematic handling of environmental information, including digital storage or separate environmental-related accounts, whereas the evidence does not indicate that an identical recording structure is applied across all investigated cases.

Greater variation becomes apparent at the presentation and disclosure stages. The informants described the use of CSR and sustainability-related reporting to communicate environmental activities and information. However, the extent, format, and level of detail of such information differed among the investigated cases. The cross-case evidence therefore suggests that presentation and disclosure are less standardized than the earlier stages of environmental accounting.

Overall, the evidence indicates that the investigated cases have incorporated environmental-related costs and activities into organizational accounting and management processes, but the degree of formalization varies across the six stages. The strongest evidence concerns the identification, recognition, measurement, and recording of environmental-related costs, while presentation and disclosure remain more heterogeneous. This finding is interpreted as a pattern within the five investigated cases and is not generalized to all 32 palm oil company entities in the broader research population.

In addition, the results of the study also show that there are four main factors related to how environmental accounting practices are developed. Stakeholder pressure arises from local governments, surrounding communities, and environmental institutions that demand transparency in environmental management. The company's legitimacy is shown through the implementation of CSR programs, sustainability reporting, and various social and environmental activities. Institutional pressure can be seen from the company's compliance with environmental regulations and applicable HGU licensing. Meanwhile, green tax incentives show different levels of understanding and utilization between companies.

Overall, the findings show that environmental accounting practices in palm oil companies in East Aceh are still at the basic to medium stage. The most dominant practice is seen in the aspect of identifying and recognizing environmental costs, while the disclosure aspect is still not uniform between companies. External factors such as stakeholder pressure and institutional regulations play a role in driving this practice, but green tax incentives

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have not been optimally utilized by all companies.

#### 4.1.1 Sample Description and Descriptive Statistics

The empirical sample comprised five purposively selected palm oil company cases and five key informants from a broader population of 32 palm oil company entities identified through Right to Cultivate (HGU) records for 2024–2025. The 32 entities represent the broader population and sampling frame, while the five investigated cases constitute the direct empirical basis of the qualitative analysis. To maintain confidentiality, the companies and informants are identified as Case A, Case B, Case C, Case D, and Case E. Informants were selected based on their knowledge or involvement in environmental accounting, environmental management, accounting or finance, sustainability, or related organizational activities. The selection emphasized information richness and organizational relevance rather than statistical representativeness.

**Table 2. Profile of the Investigated Cases**

| Case | Number of Informants | Selection Approach | Organizational Identification | Role in Analysis |
|---|---|---|---|---|
| Case A | 1 | Purposive sampling | Anonymized palm oil company | Key informant |
| Case B | 1 | Purposive sampling | Anonymized palm oil company | Key informant |
| Case C | 1 | Purposive sampling | Anonymized palm oil company | Key informant |
| Case D | 1 | Purposive sampling | Anonymized palm oil company | Key informant |
| Case E | 1 | Purposive sampling | Anonymized palm oil company | Key informant |
| Total | 5 | | 5 investigated cases | 5 key informants |

The 32 entities identified through HGU records were not treated as individual research cases unless included among the five purposively selected cases. Therefore, the sample profile describes the qualitative cases only and does not represent all 32 entities statistically. Conventional descriptive statistics, including means, standard deviations, percentages, and normality tests, were not calculated because the study employed a qualitative case-study design without numerical measurement scales. The substantive findings were instead derived from thematic coding and cross-case comparison of the five investigated cases.

#### 4.1.2 Data Quality and Preliminary Analysis

Because this study employed a qualitative descriptive-exploratory case-study design, no quantitative preliminary tests, such as normality, multicollinearity, reliability coefficients, or model-fit tests, were conducted. Data quality was instead assessed through qualitative trustworthiness procedures, including examination of the completeness and relevance of interview information, comparison of accounts across the five investigated cases, source and method triangulation where supporting observations or organizational documentation were available, and member checking to reconfirm relevant interpretations with informants. These procedures were used to reduce misinterpretation and strengthen the

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credibility of the findings.

Preliminary analysis involved organizing interview evidence according to the six environmental accounting stages: identification, recognition, measurement, recording, presentation, and disclosure, together with stakeholder expectations, legitimacy considerations, institutional conditions, and green tax incentives as contextual analytical themes. Information that did not fit the initial categories was retained for further examination. The data were considered sufficiently informative for thematic and cross-case analysis when recurring patterns were identified and no substantial new information relevant to the research questions emerged during the later review. This was treated as an indication of information saturation within the investigated cases rather than a statistical test of data adequacy.

### 4.1.3 Main Analytical Results

The main analytical results were derived from thematic coding and cross-case comparison of interview evidence from the five investigated cases. The analysis focused on six environmental accounting stages: identification, recognition, measurement, recording, presentation, and disclosure. The findings are presented as qualitative patterns derived from informants' accounts and distinguished from subsequent researcher interpretation.

At the identification stage, informants reported environmental-related costs and activities involving waste management, environmental maintenance, rehabilitation, conservation, monitoring, and social or environmental CSR. At the recognition stage, such expenditures were incorporated into existing accounting or administrative processes and classified under operational, general, CSR, or other relevant cost categories, although classification was not fully uniform across cases. At the measurement stage, environmental costs were mainly described in terms of actual expenditures for environmental management activities. While monetary cost information was available, no single standardized measurement procedure was identified across all cases.

At the recording stage, environmental-related expenditures were reported as being recorded through organizational financial or administrative systems. Some cases described more systematic practices, including digital storage or environmental-related accounts, but recording structures were not identical across cases. Greater variation was observed at the presentation stage, where environmental information was presented through different CSR and sustainability-related reporting approaches, with differences in format and extent across cases.

At the disclosure stage, environmental information was communicated through CSR and/or sustainability-related reporting, but the extent, format, and level of detail varied among the investigated cases. Thus, while environmental accounting practices were evident across all six stages, presentation and particularly disclosure showed greater variation and less standardization than the earlier stages of identification, recognition, measurement, and recording.

### 4.1.4 Hypothesis Testing Results / Key Findings

No statistical hypothesis testing was conducted because this study employed a qualitative descriptive-exploratory case-study design. Instead, the key findings were derived from thematic analysis and cross-case comparison of the five investigated cases. Environmental accounting practices were evident across six stages: identification, recognition, measurement, recording, presentation, and disclosure. The first four stages were more consistently reported, while presentation and disclosure showed greater variation. Environmental-related costs and activities were incorporated into existing accounting and management processes, although their classification, recording, presentation, and disclosure were not fully uniform across cases.

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considerations, and institutional conditions emerged as contextual analytical themes rather than statistically tested factors. Institutional conditions were particularly evident through regulatory requirements, environmental standards, and organizational procedures, providing support for coercive and normative pressures. However, the evidence was insufficient to establish mimetic isomorphism based solely on similarities in organizational practices. The cases also differed in awareness, understanding, organizational involvement, and reported utilization of green tax incentives, with informational and administrative barriers identified. Green tax incentives are therefore interpreted as an economic and policy-related contextual theme rather than a demonstrated causal determinant.

Overall, the cross-case comparison indicates that environmental accounting practices were not implemented through an identical organizational structure across the five cases. The main differences concerned the classification and formalization of environmental costs and, more visibly, the presentation and disclosure of environmental information. These findings are bounded by the five investigated cases and should not be interpreted as statistical generalizations to the broader population of 32 palm oil company entities.

#### 4.1.5 Visual Presentation of Results

The qualitative findings are presented visually through an evidence matrix to improve transparency and facilitate comparison across the five investigated cases. Table 1 summarizes the empirical evidence associated with the six stages of environmental accounting, namely identification, recognition, measurement, recording, presentation, and disclosure. The table distinguishes the evidence reported by informants from the subsequent cross-case interpretation, allowing readers to assess how the analytical findings were derived from the empirical data.

The evidence matrix also facilitates comparison of similarities and differences across the investigated cases without assigning numerical scores or statistical rankings. The visual presentation therefore supports the qualitative analysis by organizing the evidence systematically rather than presenting descriptive statistics or hypothesis-testing results.

### 4.2 Research Discussion

The findings indicate that environmental accounting practices in the five investigated cases are incorporated into organizational activities, although their degree of integration varies across the six stages. Identification, recognition, measurement, and recording were relatively consistent, while presentation and disclosure showed greater variation. This finding is consistent with previous studies reporting that environmental accounting in the Indonesian palm oil sector remains more developed in identifying and recognizing environmental activities than in standardized environmental disclosure (Wahyuningrum et al., 2026). The present study adds a qualitative cross-case perspective by showing how these practices are situated within the specific institutional and fiscal context of East Aceh.

Legitimacy Theory provides a contextual interpretation of environmental management, CSR, environmental reporting, and sustainability-related activities reported by the investigated cases. These practices indicate that environmental information serves communication and accountability purposes alongside its internal accounting function. However, the findings do not establish legitimacy considerations as an independent causal determinant. Stakeholder Theory provides a complementary interpretation, as informants identified government institutions, surrounding communities, customers, investors, certification-related bodies, and internal management as relevant stakeholders. Their expectations were reflected in environmental management, compliance, social activities, and reporting, although their relevance differed across cases.

Institutional Theory provides the

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strongest interpretive connection to the observed organizational conditions because environmental accounting practices were associated with regulatory requirements, environmental standards, organizational procedures, and certification-related expectations. The evidence most directly supports coercive institutional conditions, particularly government regulations, environmental compliance requirements, and Right to Cultivate (HGU) licensing conditions. Normative conditions were also evident through environmental standards, certification requirements, organizational policies, and expectations concerning appropriate environmental management. However, the evidence does not establish mimetic isomorphism, because similarities across cases alone do not demonstrate explicit imitation or benchmarking. Such similarities are therefore interpreted as cross-case convergence rather than evidence of mimetic pressure.

The findings concerning green tax incentives show differences in awareness, understanding, organizational involvement, and perceived barriers across the investigated cases. Informants identified limitations related to information, socialization, administrative requirements, and internal tax knowledge. Green tax incentives are therefore interpreted as an economic and policy-related contextual theme rather than an empirically established causal determinant of environmental accounting. The Triple Bottom Line perspective provides a complementary interpretation of the coexistence of environmental, social, and economic considerations, reflected in environmental management, conservation, rehabilitation, waste management, emission reduction, monitoring, CSR, and organizational financial processes. However, the evidence does not demonstrate full integration of these dimensions into a comprehensive sustainability accounting system.

Compared with previous research, the findings remain consistent with studies reporting uneven environmental accounting practices, particularly in environmental disclosure and reporting standardization (Wahyuningrum et al., 2026). The contribution of this study therefore does not rest solely on its geographical setting, but on its qualitative cross-case examination of environmental accounting within a specific institutional, organizational, social, and fiscal context. The study does not claim that East Aceh represents all palm oil-producing regions or that the identified themes operate identically across the industry.

Overall, Institutional Theory provides the strongest interpretive connection to the observed regulatory and organizational conditions, particularly coercive and normative conditions. Stakeholder Theory and Legitimacy Theory provide complementary interpretations of accountability, external expectations, environmental communication, and organizational acceptance, while the Triple Bottom Line perspective helps interpret the coexistence of environmental, social, and economic considerations. Green tax incentives provide an economic and policy context rather than a demonstrated causal mechanism. Accordingly, the theoretical contribution lies not in empirically validating or extending these theories, but in demonstrating how they can be jointly applied as complementary analytical lenses to interpret environmental accounting practices within the investigated cases.

### 4.2.1 Interpretation of Key Findings

The findings indicate that environmental accounting practices were present across the five investigated cases through six stages: identification, recognition, measurement, recording, presentation, and disclosure. The first four stages were more consistently reported, while presentation and disclosure showed greater variation. This indicates that environmental accounting has been incorporated into organizational activities, although a fully standardized reporting structure was not evident across the investigated cases.

The findings also identified stakeholder expectations, legitimacy considerations,

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institutional conditions, and green tax incentive awareness as contextual analytical themes rather than statistically tested causal factors. Institutional conditions provide the strongest interpretive connection to the observed practices, particularly through regulatory requirements, environmental standards, and organizational procedures. The evidence supports coercive and normative conditions, while mimetic isomorphism cannot be established because similarities in practices do not demonstrate explicit imitation or benchmarking.

Stakeholder and legitimacy considerations provide complementary interpretations of environmental accountability through environmental management, reporting, and relationships with external stakeholders. Green tax incentives represent an economic and policy-related context, with differences in awareness, understanding, administrative requirements, and organizational coordination across the investigated cases. Overall, the findings answer the research objective by showing that environmental accounting practices develop within interacting organizational, institutional, social, and fiscal contexts, without establishing predetermined causal relationships.

### 4.2.2 Comparison with Previous Studies

The findings are broadly consistent with previous studies showing that environmental accounting practices in the palm oil sector remain uneven, particularly in environmental cost classification and disclosure (Maali et al., 2026). The present study similarly found that identification, recognition, measurement, and recording were more consistently evident than presentation and disclosure across the investigated cases.

However, this study provides additional qualitative evidence by examining environmental accounting through a cross-case perspective and by considering stakeholder expectations, legitimacy considerations, institutional conditions, and green tax incentive awareness as contextual analytical themes. This differs from studies that primarily focus on environmental disclosure, environmental costs, or environmental performance as separate areas of analysis. The findings concerning green tax incentives also indicate that awareness and utilization may differ across organizational contexts due to information, administrative, and internal coordination conditions.

The contribution of the present study therefore lies not simply in examining East Aceh as a different geographical setting, but in showing how environmental accounting practices are situated within specific institutional, organizational, social, and fiscal conditions. The findings remain bounded by the five investigated cases and should not be generalized statistically to the broader population of palm oil companies.

### 4.2.3 Theoretical Contributions

The theoretical contribution of this study lies in demonstrating how existing theoretical perspectives can jointly interpret environmental accounting practices within the specific context of the investigated palm oil companies. Legitimacy Theory helps explain the accountability and communication dimensions of environmental reporting, while Stakeholder Theory highlights the relevance of relationships with government institutions, communities, customers, investors, and other stakeholders. Institutional Theory provides the strongest interpretive connection to the empirical evidence, particularly through coercive regulatory requirements and normative environmental standards, although the evidence does not establish mimetic isomorphism. The Triple Bottom Line perspective provides a complementary interpretation of the coexistence of environmental, social, and economic considerations in environmental accounting practices.

Accordingly, the study does not claim to empirically validate or substantially extend these theories. Rather, its theoretical value lies in demonstrating their complementary use as analytical lenses for interpreting environmental

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accounting practices in a specific institutional, organizational, social, and fiscal context. This interpretation provides a more cautious and context-sensitive theoretical contribution consistent with the qualitative case-study design.

#### 4.2.4 Practical and Policy Implications

The findings have several practical implications for the investigated palm oil companies. The variation identified in environmental cost presentation and disclosure indicates the need to improve the consistency of environmental cost classification, recording, and reporting. Companies may strengthen coordination between environmental, accounting, finance, and taxation functions so that environmental information can be used more consistently for environmental evaluation, planning, and managerial decision-making.

The findings also indicate the need for clearer information and internal understanding regarding green tax incentives. For companies, relevant personnel may improve their knowledge of incentive requirements and strengthen coordination between environmental and tax functions. For policymakers and relevant authorities, clearer guidance, accessible information, and practical socialization concerning eligibility and administrative procedures may help companies better understand available green tax incentives. These implications are derived from the conditions reported in the investigated cases and should not be interpreted as universally applicable recommendations.

#### 4.2.5 Integration with the Research Gap

The findings address the identified research gaps in several ways. First, the study provides qualitative evidence on environmental accounting practices within the relatively underexplored context of East Aceh, while avoiding generalization beyond the five investigated cases. Second, the cross-case findings provide empirical evidence across six environmental accounting stages and show that greater variation occurs in presentation and disclosure than in identification, recognition, measurement, and recording. Third, the study integrates stakeholder expectations, legitimacy considerations, institutional conditions, and green tax incentive awareness as contextual analytical themes rather than statistically tested causal factors. Finally, the findings provide additional qualitative evidence on the organizational awareness and reported barriers surrounding green tax incentives, thereby connecting environmental accounting with the fiscal context of the investigated cases. These findings address the identified gaps while positioning the study as a context-specific qualitative contribution rather than a universal explanation of environmental accounting practices.

#### 4.2.6 Acknowledgement of Study Limitations

The findings should be interpreted within the boundaries of the five investigated cases. The study provides in-depth qualitative evidence from selected company contexts, but the differences observed across cases may also reflect organizational conditions that are specific to those cases. In addition, the availability and level of detail of supporting organizational information differed across the investigated cases, which limits the extent to which some environmental accounting practices could be examined beyond informant accounts. The findings concerning green tax incentives should likewise be interpreted cautiously because differences in awareness and reported utilization may reflect variations in organizational knowledge and access to information. These limitations do not invalidate the findings but indicate that their interpretation should remain context-specific.

## 5. Conclusion

Based on qualitative evidence from five investigated company cases, this study finds that environmental accounting practices are incorporated through six stages: identification, recognition, measurement, recording, presentation, and disclosure. The first four stages were more consistently evident, while

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presentation and disclosure showed greater variation across cases. Four contextual themes emerged from the interview evidence: stakeholder expectations, legitimacy considerations, institutional conditions, and awareness of green tax incentives. These themes are interpreted as qualitative analytical perspectives rather than statistically tested causal factors, and the findings are limited to the investigated cases rather than being statistically representative of all 32 palm oil company entities.

The findings provide contextual support for Legitimacy Theory, Stakeholder Theory, Institutional Theory, and the Triple Bottom Line perspective as complementary interpretive lenses. Institutional Theory provides the strongest interpretive connection to the observed organizational context, particularly through regulatory requirements and environmental standards, with stronger evidence of coercive and, to a lesser extent, normative conditions. Mimetic isomorphism could not be established without explicit evidence of imitation or benchmarking. Green tax incentives represent an economic and policy-related contextual theme, with differences in awareness, understanding, organizational involvement, and perceived administrative barriers across the investigated cases.

The empirical contribution lies in providing a qualitative cross-case account of environmental accounting within the specific institutional, organizational, social, and fiscal context of East Aceh, without claiming representation of all palm oil companies in Indonesia. Practically, the findings indicate the need to improve the consistency of environmental cost recording, presentation, and disclosure and to strengthen information, internal understanding, and administrative support concerning green tax incentives. These implications are context-specific considerations rather than universally applicable policy prescriptions.

Future research may expand the number and diversity of cases, include additional stakeholder groups, and incorporate accessible documentary or observational evidence. Comparative research across palm oil-producing regions could examine whether the patterns identified in East Aceh are also observed elsewhere, while longitudinal or mixed-method studies could further explore the relationship between environmental accounting, sustainability performance, and green fiscal policies.

### 5.1 Summary of Key Findings

The findings show that environmental accounting practices in the five investigated palm oil company cases encompass six stages: identification, recognition, measurement, recording, presentation, and disclosure of environmental-related costs and activities. The first four stages were more consistently evident, while presentation and disclosure varied across cases and were less standardized.

Four contextual themes emerged from the qualitative evidence: stakeholder expectations, legitimacy considerations, institutional conditions, and awareness of green tax incentives. These themes are interpreted as analytical perspectives rather than statistically tested causal factors. Institutional conditions were particularly evident through regulatory requirements and environmental standards, while the findings concerning green tax incentives revealed differences in organizational awareness, understanding, involvement, and perceived barriers, including limited information, socialization, administrative requirements, and taxation knowledge.

Overall, the study addresses its objective by providing a qualitative cross-case account of how environmental accounting practices are developed within the investigated palm oil companies and how these practices are situated within broader organizational, social, institutional, and fiscal contexts. The findings are bounded by the five investigated cases and should not be interpreted as statistically representative of the broader population of 32 palm oil company entities.

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### 5.2 Theoretical Contributions

This study contributes theoretically by demonstrating how Legitimacy Theory, Stakeholder Theory, Institutional Theory, and the Triple Bottom Line perspective can be used as complementary analytical lenses to interpret environmental accounting practices within the investigated palm oil companies. Legitimacy Theory helps explain the accountability and communication dimensions of environmental activities and reporting, while Stakeholder Theory highlights the relevance of relationships and expectations involving government institutions, communities, customers, investors, certification-related bodies, and internal management.

Institutional Theory provides the strongest interpretive connection to the empirical evidence, particularly through regulatory requirements, environmental standards, and organizational procedures. The findings provide stronger support for coercive and normative institutional conditions, while mimetic isomorphism cannot be established without explicit evidence of imitation or benchmarking. Accordingly, similarities in environmental accounting practices are interpreted as cross-case convergence rather than sufficient evidence of institutional isomorphism.

Green tax incentives provide an additional economic and policy-related context for interpreting environmental accounting practices. The findings indicate differences in organizational awareness, understanding, involvement, and perceived administrative barriers, but do not establish green tax incentives as a causal driver of environmental accounting. Similarly, the Triple Bottom Line perspective provides a complementary lens for understanding the coexistence of environmental, social, and economic considerations without demonstrating full integration into a comprehensive sustainability accounting system.

### 5.3 Practical and Policy Implications

For palm oil company management, the findings indicate that environmental accounting practices have incorporated the identification and disclosure of environmental-related costs, but their degree of formalization and consistency varies across the investigated cases. Companies should therefore strengthen environmental cost classification, recording, measurement, and disclosure within their existing accounting systems, supported by appropriate human-resource capacity. Greater consistency in sustainability and environmental reporting would also improve the transparency of environmental information available to relevant stakeholders.

For local governments and environmental regulators, the variation across cases indicates the need for clearer technical guidance and monitoring mechanisms concerning environmental cost reporting and environmental disclosure. Greater coordination between environmental requirements and organizational accounting practices may help companies translate regulatory expectations into more consistent operational and reporting practices. For fiscal policymakers, particularly regarding green tax incentives, the findings indicate differences in organizational awareness and utilization. Improved dissemination of information, clearer eligibility and administrative procedures, and practical guidance may help companies better understand and access available incentives.

Overall, the findings indicate that improvements in environmental accounting require attention to both organizational practices and the surrounding regulatory and fiscal context. Coordination among company management, local government, environmental regulators, and fiscal policymakers may therefore support more consistent and transparent environmental accounting practices within the investigated East Aceh palm oil context. These implications are derived from the investigated cases and should not be interpreted as universally applicable policy

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prescriptions.

### 5.4 Limitations of the Study

This study is limited to five investigated palm oil company cases in East Aceh Regency; therefore, the findings reflect specific local, organizational, social, regulatory, and environmental conditions and should not be generalized statistically to other regions or the broader palm oil industry. The limited number of informants and restricted access to certain internal company information, particularly detailed environmental costs and green tax incentive utilization, also constrained the breadth and depth of the empirical evidence. Some sensitive information was not fully documented or disclosed, which may have limited the completeness of the analysis.

The qualitative descriptive-exploratory case-study design enabled an in-depth understanding of environmental accounting practices but does not provide statistical generalization and remains subject to potential informant subjectivity, including normative responses or concerns about organizational image. These limitations were addressed, where possible, through source and method triangulation, member checking, and audit-trail procedures. The findings should therefore be interpreted as context-specific qualitative evidence concerning the investigated cases rather than as universally representative conclusions.

### 5.5 Directions for Future Research

Future research may expand the study to other regions in Aceh and major palm oil-producing provinces such as Riau, North Sumatra, and Kalimantan to enable comparison across different industry and institutional contexts. Methodologically, future studies may employ multiple case-study designs or combine qualitative and quantitative approaches to provide broader and more measurable evidence on environmental accounting practices. Future research may also incorporate additional analytical themes, including sustainability performance, Environmental, Social, and Governance (ESG), environmental cost efficiency, and environmental and fiscal policy implementation, to further examine their relationship with environmental accounting practices and company performance.

From a theoretical perspective, future studies may integrate perspectives such as the Resource-Based View (RBV), Institutional Isomorphism, and corporate sustainability theory to provide broader interpretations of environmental accounting practices. Longitudinal research is also recommended to examine how environmental accounting practices evolve over time and how green tax incentive policies relate to organizational behavior in the longer term. Such research could clarify whether environmental accounting practices remain stable, develop progressively, or reflect temporary compliance, while providing additional empirical evidence for contextual environmental and fiscal policy development in the Indonesian palm oil industry.

## 6. References

Almeflh, A., & Almofleh, M. (2025). Institutional drivers of environmental accounting and responses of organizations. *Discover Sustainability*, *7*. https://doi.org/10.1007/s43621-025-02400-5

Antara News. (2025, March 1). Kabupaten Aceh Timur kehilangan 1.096 hektare hutan. *1 Maret 2025*. https://megapolitan.antaranews.com/berita/364933/kabupaten-aceh-timur-kehilangan-1096-hektare-hutan

Asmar, M., & Tuqan, A. (2024). Integrating machine learning for sustaining cybersecurity in digital banks. *Heliyon*, *10*. https://doi.org/10.1016/j.heliyon.2024.e37571

Azarkamand, S., Fernández Ríos, A., Batlle-Bayer, L., Bala, A., Sazdovski, I., Roca, M., Margallo, M., Aldaco, R., Laso, J., Puig, R., Cantero, R., & Fullana-I-Palmer, P. (2024). Calculating the true costs of protein sources by integrating environmental costs and market prices. *Sustainable Production and Consumption*. https://doi.org/10.1016/j.spc.2024.06.006

DOI: 10.26618

Bhuiyan, F., Rana, T., Baird, K., & Munir, R. (2023). Strategic outcome of competitive advantage from corporate sustainability practices: Institutional theory perspective from an emerging economy. *Business Strategy and the Environment*. https://doi.org/10.1002/bse.3362

Brown, N., & Deegan, C. (1998). The public disclosure of environmental performance information—A dual test of media agenda setting theory and legitimacy theory. *Accounting and Business Research*, *29*, 21–41. https://doi.org/10.1080/00014788.1998.9729564

Chiriacò, M., Bellotta, M., Jusić, J., & Perugini, L. (2022). Palm oil's contribution to the United Nations sustainable development goals: Outcomes of a review of socio-economic aspects. *Environmental Research Letters*, *17*. https://doi.org/10.1088/1748-9326/ac6e77

Crossley, R., Elmagrhi, M., & Ntim, C. (2021). Sustainability and legitimacy theory: The case of sustainable social and environmental practices of small and medium-sized enterprises. *Business Strategy and the Environment*. https://doi.org/10.1002/bse.2837

Derhab, N., & Elkhwesky, Z. (2022). A systematic and critical review of waste management in micro, small and medium-sized enterprises: Future directions for theory and practice. *Environmental Science and Pollution Research International*, *30*, 13920–13944. https://doi.org/10.1007/s11356-022-24742-7

Dermoredjo, S., Darmawan, D., Sumedi, Mutaqin, Dani, F., Yusuf, E., Pasaribu, S., Sayaka, B., Wardana, I., Adnyana, I., Estiningtyas, W., & Antriyandarti, E. (2025). The Global Sway of Indonesian Palm Oil: An Export Analysis. *Journal of Agriculture and Food Research*. https://doi.org/10.1016/j.jafr.2025.102064

Dharmawan, I., Heriyanto, N., Garsetiasih, R., Kwatrina, R., Sawitri, R., Denny, Setyawati, T., Pratiwi, Narendra, B., Siregar, C., & Abywijaya, I. (2024). The Dynamics of Vegetation Structure, Composition and Carbon Stock in Peatland Ecosystem of Old Secondary Forest in Riau and South Sumatra Provinces. *Land*. https://doi.org/10.3390/land13050663

Dimaggio, P., & Powell, W. (1983). THE IRON CAGE REVISITED: *The New Economic Sociology*. https://doi.org/10.2307/2095101

Dowling, J., & Pfeffer, J. (1975). Organizational Legitimacy. *Sociological Perspectives*, *18*, 122–136. https://doi.org/10.2307/1388226

Elkington, J. (1998). ACCOUNTING FOR THE TRIPLE BOTTOM LINE. *Measuring Business Excellence*, *2*, 18–22. https://doi.org/10.1108/eb025539

Gezgin, T., Özer, G., Merter, A. K., & Balcıoğlu, Y. (2024). The Mediating Role of Corporate Governance in the Relationship between Net Profit and Equity and Voluntary Disclosure in the Context of Legitimacy Theory. *Sustainability*. https://doi.org/10.3390/su16104097

Grabs, J., & Garrett, R. (2023). Goal-Based Private Sustainability Governance and Its Paradoxes in the Indonesian Palm Oil Sector. *Journal of Business Ethics*, *188*, 467–507. https://doi.org/10.1007/s10551-023-05377-1

HAKA. (2024). *HAKA : Aceh Kehilangan Tutupan Hutan 8.906 Hektare dalam Setahun*. HAKA. https://haka.or.id/haka-aceh-kehilangan-tutupan-hutan-8-906-hektare-dalam-setahun-2/

Husin, S., Wijaya, C., Hanief, A., Ghafur, S., Machmud, T., & Mardanugraha, E. (2023). Palm Oil Downstream Strategy: Enhancing Indonesia's Bargaining Position in International Palm Oil Trade. *Migration Letters*. https://doi.org/10.59670/ml.v20i5.4057

Kujala, J., Sachs, S., Leinonen, H., Heikkinen, A., & Laude, D. (2022). Stakeholder Engagement: Past, Present, and Future. *Business & Society*, *61*, 1136–1196. https://doi.org/10.1177/00076503211066595

Lambin, E., & Furumo, P. (2023). Deforestation-Free Commodity Supply Chains: Myth or Reality? *Annual Review of Environment and Resources*. https://doi.org/10.1146/annurev-environ-112321-121436

Li, W., Zhu, J., & Liu, C. (2024). Environmental, social, and governance performance, financing constraints, and corporate

DOI: 10.26618

investment efficiency: Empirical evidence from China. *Heliyon*, *10*. https://doi.org/10.1016/j.heliyon.2024.e40401

Maali, B., Bader, A., Morshed, A., & Khrais, L. (2026). Carbon costing integration, environmental disclosure, and carbon intensity: Evidence from Jordanian listed firms. *Environmental Economics*. https://doi.org/10.21511/ee.17(2).2026.13

Meiryani, Huang, S.-M., Soepriyanto, G., Audrelia, J., Fahlevi, M., Aljuaid, M., & Grabowska, S. (2022). An exploration of circular water management accountability: A case from Indonesia. *Heliyon*, *8*. https://doi.org/10.1016/j.heliyon.2022.e10556

Miles, M., Huberman, A., & Saldaña, J. (1994). *Qualitative Data Analysis: A Methods Sourcebook*. https://consensus.app/papers/qualitative-data-analysis-a-methods-sourcebook-miles-huberman/f415fb2fe90f5beabad87846f96f96de/

Mu, H., Xu, J., & Chen, S. (2023). The impact of corporate social responsibility types on happiness management: A stakeholder theory perspective. *Management Decision*. https://doi.org/10.1108/md-02-2023-0267

Nabila, R., Hidayat, W., Haryanto, A., Hasanudin, U., Iryani, D. A., Lee, S.-Y., Kim, S., Kim, S., Chun, D., Choi, H., Im, H., Lim, J.-H., Kim, K., Jun, D., Moon, J., & Yoo, J. (2023). Oil palm biomass in Indonesia: Thermochemical upgrading and its utilization. *Renewable and Sustainable Energy Reviews*. https://doi.org/10.1016/j.rser.2023.113193

Ngoc, T. T. T. (2025). Unlocking environmental management accounting and environmental performance: A mediated moderation model through green technology innovation and environmental strategy. *Meditari Accountancy Research*. https://doi.org/10.1108/medar-07-2024-2558

Nguyen, T. M. A. (2024). Adoption of environmental management accounting in Vietnamese enterprises: An empirical analysis of influencing determinants. *PLOS ONE*, *19*. https://doi.org/10.1371/journal.pone.0304902

Nyakuwanika, M., & Panicker, M. (2025). The Role of Environmental Accounting in Mitigating Climate Change: ESG Disclosures and Effective Reporting—A Systematic Literature Review. *Journal of Risk and Financial Management*. https://doi.org/10.3390/jrfm18090480

Putri, E., Dharmawan, A., Hospes, O., Yulian, B., Amalia, R., Mardiyaningsih, D., Kinseng, R., Tonny, F., Pramudya, E., Rahmadian, F., & Suradiredja, D. (2022). The Oil Palm Governance: Challenges of Sustainability Policy in Indonesia. *Sustainability*. https://doi.org/10.3390/su14031820

Shahimi, S., M., H.-S., & F., H. (2023). Sustainability Practices and Financial Profitability: The Case of the World's Top 20 Crude Palm Oil Producers. *SAGE Open*, *13*. https://doi.org/10.1177/21582440231203832

Shenton, A. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, *22*, 63–75. https://doi.org/10.3233/efi-2004-22201

Sibhatu, K. (2023). *Oil palm boom: Its socioeconomic use and abuse*. *7*. https://doi.org/10.3389/fsufs.2023.1083022

Supriatna, J., Djumarno, D., Saluy, A., & Kurniawan, D. (2024). Sustainability Analysis of Smallholder Oil Palm Plantations in Several Provinces in Indonesia. *Sustainability*. https://doi.org/10.3390/su16114383

Swalih, M., Ram, R., & Tew, E. (2024). Environmental management accounting for strategic decision-making: A systematic literature review. *Business Strategy and the Environment*. https://doi.org/10.1002/bse.3828

Wahyuningrum, I., Djajadikerta, H., Trireksani, T., Budihardjo, M., & Sriningsih, S. (2026). Environmental disclosure in Indonesia: A study of manufacturing and mining companies. *Asian Journal of Accounting Research*. https://doi.org/10.1108/ajar-11-2023-0367

Xia, L., Fatema, N., Rahman, Md. M., & Hossain, A. (2025). Nexus of environmental management accounting, and carbon

DOI: 10.26618

emission management on environmental, social, and governance performance: Evidence from symmetrical and asymmetrical approach. *Humanities and Social Sciences Communications*, *12*. https://doi.org/10.1057/s41599-025-05465-9

Zainal, S., Ilham, I., Fakhrurrazi, F., Arifin, A., & Aulia, F. (2024). Conflict Resolution in Aceh: A Sociological Study of Ecological Sustainability and Palm Oil. *Samarah: Jurnal Hukum Keluarga Dan Hukum Islam*. https://doi.org/10.22373/sjhk.v8i3.21069