

**Strategic Implementation of Integrated Domestic Waste
Management to Support Sustainable Operations: As seen in The
Evidence from PT Bisma Dharma Kencana Palm Oil Mill &
Plantation**



THESIS

By:

Wahyu Rochman Aditama (24221019)

Thesis Supervisor:

Dr. Ir. Amelia Naim Indrajaya, MBA

MASTER OF BUSINESS ADMINISTRATION

IPMI INSTITUT

JAKARTA

2026

**Strategic Implementation of Integrated Domestic Waste Management to
Support Sustainable Operations: As seen in The Evidence from PT Bisma
Dharma Kencana Palm Oil Mill & Plantation**

Prepared By:

Wahyu Rochman Aditama (24221019)

A THESIS

**Submitted in a partial fulfilment of the requirements for the degree of Master of
Business Administration**

CERTIFICATE OF APPROVAL

Name & Student ID : Wahyu Rochman Aditama (24221019)

Topic : Strategic Implementation of Integrated Domestic Waste Management to Support Sustainable Operations: As seen in The Evidence from PT Bisma Dharma Kencana Palm Oil Mill & Plantation

We hereby declare that this Thesis is from student's own work, has been read and presented to Institute IPMI Board of Examiners, and has been accepted as part of the requirements needed to obtain a Master of Business Administration Degree and has been found to be satisfactory.

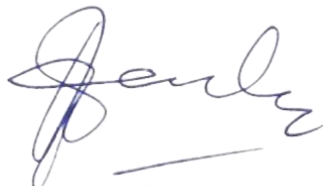
Jakarta, 11 August 2026

Examined by,



Dr. Ir. Amelia Naim Indrajaya, MBA

Thesis Advisor



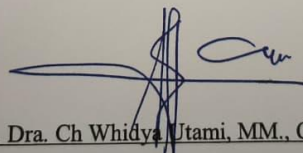
Prof. Dr. Wiwiek Mardawiyah, S.E., Ak., M.M.

Chair of Examiners



Dr. Samuel PD Anantadjaya

Examiner



Prof. Dr. Dra. Ch Whidya Utami, MM., CLC., CPM (Asia), CRME

Vice Rector of Academic and Student Affairs

NON-PLAGIARISM DECLARATION FORM

This Thesis is a presentation of our original research work. Wherever contribution of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions.

Also, this work is being submitted in partial fulfilment of the requirements for the Master of Business Administration degree and has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Jakarta, 11 August 2026



Wahyu Rochman Aditama
NIM 24221019

TABLE OF CONTENTS

CERTIFICATE OF APPROVAL	iii
NON-PLAGIARISM DECLARATION FORM	iv
TABLE OF CONTENTS	v
LIST OF FIGURES.....	8
LIST OF TABLES.....	9
ACKNOWLEDGEMENT	10
ABSTRACT.....	11
CHAPTER I INTRODUCTION	Error! Bookmark not defined.
1.1 Research Background.....	Error! Bookmark not defined.
1.2 Research Gap.....	Error! Bookmark not defined.
1.3 Problem Statement	Error! Bookmark not defined.
1.4 Research Questions	Error! Bookmark not defined.
1.5 Research Objectives	Error! Bookmark not defined.
1.6 Scope of the Study.....	Error! Bookmark not defined.
1.7 Benefits and Limitations of the Study	Error! Bookmark not defined.
1.7.1 Benefits of the Study.....	Error! Bookmark not defined.
1.7.2 Limitations of the Study	Error! Bookmark not defined.
1.8 Structure of the Thesis.....	Error! Bookmark not defined.
CHAPTER II LITERATURE REVIEW	Error! Bookmark not defined.
2.1 Introduction	Error! Bookmark not defined.
2.2 PESTLE Analysis	Error! Bookmark not defined.
2.2.1 Political Factors	Error! Bookmark not defined.
2.2.2 Economic Factors	Error! Bookmark not defined.
2.2.3 Social Factors.....	Error! Bookmark not defined.
2.2.4 Technological Factors	Error! Bookmark not defined.
2.2.5 Legal Factors.....	Error! Bookmark not defined.
2.2.6 Environmental Factors.....	Error! Bookmark not defined.
2.2.7 Application of PESTLE Analysis in Environmental Management	Error! Bookmark not defined.
2.3 Domestic Waste Management in Industrial Housing Environments....	Error! Bookmark not defined.

2.4 Integrated Sustainable Waste Management (ISWM) .	Error! Bookmark not defined.
2.5 Organizational Implementation	Error! Bookmark not defined.
2.6 Multi Stakeholder and Regulatory Coordination	Error! Bookmark not defined.
2.7 Operational Planning and Workflow Integration.....	Error! Bookmark not defined.
2.8 PROPER 2025 Environmental Performance Framework .	Error! Bookmark not defined.
2.9 Conceptual Framework of the Study	Error! Bookmark not defined.
2.10 Synthesis and Chapter Summary	Error! Bookmark not defined.
CHAPTER III RESEARCH METHODOLOGY ..	Error! Bookmark not defined.
3.1 Introduction	Error! Bookmark not defined.
3.2 Research Design	Error! Bookmark not defined.
3.3 Research Context.....	Error! Bookmark not defined.
3.4 Unit of Analysis	Error! Bookmark not defined.
3.5 Data Collection Methods	Error! Bookmark not defined.
3.5.1 Interviews.....	Error! Bookmark not defined.
3.5.2 Observations	Error! Bookmark not defined.
3.5.3 Document Analysis	Error! Bookmark not defined.
3.6 Data Analysis Procedures	Error! Bookmark not defined.
3.7 Analytical Framework	Error! Bookmark not defined.
3.8 Validity and Reliability	Error! Bookmark not defined.
3.9 Ethical Considerations.....	Error! Bookmark not defined.
3.10 Summary of Methodology.....	Error! Bookmark not defined.
CHAPTER IV RESULTS AND DISCUSSION	Error! Bookmark not defined.
4.1 Existing Domestic Waste Management Practices at PT BDK.....	Error! Bookmark not defined.
4.2 Factors Affecting the Effectiveness of Domestic Waste Management.	Error! Bookmark not defined.
4.2.1 External Factors Influencing the Effectiveness of Domestic Waste Management.....	Error! Bookmark not defined.
4.2.2 Institutional Factors	Error! Bookmark not defined.
4.2.3 Operational Factors.....	Error! Bookmark not defined.
4.2.4 Synthesis of PESTLE Analysis.....	Error! Bookmark not defined.

4.3 Organizational Readiness for Implementing an Integrated Domestic Waste Management System	Error! Bookmark not defined.
4.3.1 Leadership Commitment.....	Error! Bookmark not defined.
4.3.2 Human Resource Readiness.....	Error! Bookmark not defined.
4.3.3 Infrastructure Readiness	Error! Bookmark not defined.
4.3.4 Governance and Coordination Readiness	Error! Bookmark not defined.
4.3.5 Monitoring and Performance Readiness	Error! Bookmark not defined.
4.4 Proposed Integrated Domestic Waste Management Implementation Framework.....	Error! Bookmark not defined.
4.4.1 External Drivers	Error! Bookmark not defined.
4.4.2 Organizational Readiness	Error! Bookmark not defined.
4.4.3 Integrated Domestic Waste Management System	Error! Bookmark not defined.
4.4.4 Continuous Improvement and Organizational Learning	Error! Bookmark not defined.
4.4.5 Expected Outcomes	Error! Bookmark not defined.
CHAPTER V CONCLUSIONS AND RECOMMENDATIONS	Error! Bookmark not defined.
5.1 Conclusion.....	Error! Bookmark not defined.
5.2 Theoretical Implications.....	Error! Bookmark not defined.
5.3 Managerial Implications.....	Error! Bookmark not defined.
5.4 Strategic Implications.....	Error! Bookmark not defined.
5.5 Research Limitations	Error! Bookmark not defined.
5.6 Future Research Recommendations	Error! Bookmark not defined.
REFERENCES.....	Error! Bookmark not defined.
APPENDIX A: Information Sheet	Error! Bookmark not defined.
APPENDIX B: REPORT DOCUMENTS	Error! Bookmark not defined.
APPENDIX C: INTERVIEW RESULTS – MANAGER HRD..	Error! Bookmark not defined.
APPENDIX D: INTERVIEW RESULTS – MANAGER HSE ..	Error! Bookmark not defined.
APPENDIX E: INTERVIEW RESULTS – STAFF HSE	Error! Bookmark not defined.
APPENDIX F: INTERVIEW RESULTS – STAFF HSE PLANTATION	Error! Bookmark not defined.

APPENDIX G: INTERVIEW RESULTS – STAFF HSE MILL **Error! Bookmark not defined.**

APPENDIX H: SIGNED CONSENT FORMS – MANAGER HRD..... **Error! Bookmark not defined.**

APPENDIX I: SIGNED CONSENT FORMS – MANAGER HSE **Error! Bookmark not defined.**

APPENDIX J: SIGNED CONSENT FORMS – STAFF HSE ... **Error! Bookmark not defined.**

APPENDIX K: SIGNED CONSENT FORMS – MILL ENVIRONMENTAL OFFICER**Error! Bookmark not defined.**

APPENDIX L: SIGNED CONSENT FORMS – STAFF HSE MILL..... **Error! Bookmark not defined.**

LIST OF FIGURES

Figure 1. Number of Countries Producing Palm Oil in The World	1
Figure 2: Research Framework	28
Figure 3. Household Waste Segregation Facilities	45
Figure 4. Temporary Waste Collection Points	46
Figure 5. Daily Waste Collection Using Motorcycle-Pulled Waste Cart	46
Figure 6. Proposed Integrated Domestic Waste Management Implementation Framework (IDWMIF)	83

LIST OF TABLES

Table 1. Research Gap	7
Table 2. List of Semi-Structured Interview Questions.....	34
Table 3. List of Informants for In-Depth Interview	35
Table 4. Summary of Domestic Waste Generation During the Pilot Project (May 2026)	47
Table 5. Synthesis of PESTLE Analysis.....	63
Table 6. Organizational Readiness Assessment for Implementing an Integrated Domestic Waste Management System at PT BDK	78
Table 7. Implementation Roadmap	98

ACKNOWLEDGEMENT

First and foremost, I give thanks to God Almighty for His endless grace and blessings that have enabled me to complete this research.

To my greatest supporters at home, my wife, Dety Laela Nuroniah, and my beloved daughter, Tavisha Dea Aditama, thank you for your prayers, encouragement, and understanding throughout this journey. Your unwavering support has allowed me to balance my professional responsibilities, academic commitments, and family life. My special gratitude goes to my wife for being my true partner in managing our home and responsibilities, making it possible for me to give my best in every role.

I would like to express my sincere appreciation to the Management of PT Bisma Dharma Kencana, Bapak Iskandar Muda Kamil, Bapak Hadian Iswara, Bapak Pudji Satrijo, Ibu Rosita, Ibu Reno Yori, and Bapak Yusron Fuadi, for granting me the opportunity to pursue this master's degree. I am committed to contributing meaningfully to the company in return.

I would also like to express my sincere appreciation to my colleagues at PT Bisma Dharma Kencana, particularly Fendra Agusta and Intan Puspitasari, for their continuous support, assistance, and encouragement throughout the completion of this thesis.

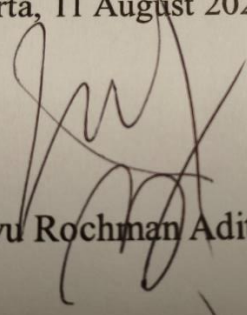
I would like to convey my deepest appreciation to Dr. Ir. Amelia Naim Indraajaya, MBA, for his guidance and mentorship in completing this research.

I am equally grateful to my extended family, parents, and siblings for their continuous prayers and encouragement.

To my fellow classmates in the EMBA September 2024 cohort, thank you for the remarkable camaraderie, collaboration, and sense of family we have built together. May our connection and friendship continue long beyond this academic journey.

Finally, I would like to extend my sincere appreciation to the entire IPMI faculty and supporting staff—including the back-office, finance, IT, and administrative teams—for their assistance and support throughout my studies at IPMI.

Jakarta, 11 August 2026



Wahyu Rochman Aditama

ABSTRACT

The revision of the PROPER 2025 environmental assessment criteria has increased the importance of domestic waste management within plantation companies as part of environmental performance evaluation. Although domestic waste management has received growing regulatory attention, previous studies have predominantly emphasized technical waste handling practices, with limited attention given to the organizational capabilities required for successful implementation. This study aims to develop a managerial implementation framework for strengthening integrated domestic waste management at PT Bisma Dharma Kencana (PT BDK) to support environmental compliance and sustainable operational performance.

A qualitative case study approach was employed in this research. Data were collected through semi-structured interviews with five key informants, direct observations, and document analysis. The data were analyzed using thematic analysis, supported by organizational readiness assessment and data triangulation to enhance the credibility of the findings.

The findings indicate that effective domestic waste management depends on the integration of external environmental drivers, organizational readiness, and operational implementation. While PT BDK has established a pilot domestic waste management system consisting of waste segregation, collection, transportation, waste weighing, documentation, and monitoring, sustainable implementation is primarily influenced by leadership commitment, organizational governance, cross-functional coordination, infrastructure readiness, and continuous organizational learning. These organizational capabilities enable environmental requirements to be translated into effective managerial and operational practices.

This study proposes the Integrated Domestic Waste Management Implementation Framework (IDWMIF) as its principal contribution. The framework integrates external environmental drivers, organizational readiness, operational implementation, continuous organizational learning, and expected organizational outcomes into a systematic managerial implementation model. By emphasizing organizational capability as the critical link between environmental regulations and operational implementation, the framework provides a practical managerial reference that may be adapted by plantation companies and other organizations facing similar environmental management challenges.

Keywords: Domestic waste management; organizational readiness; implementation framework; environmental compliance; sustainable operations.

CHAPTER I

INTRODUCTION

1.1 Research Background

The palm oil industry is one of the most strategic sectors in Indonesia's economy and plays a dominant role in the global vegetable oil market. Indonesia is currently the world's largest producer of palm oil, contributing more than half of global production. According to data published by BPS-Statistics Indonesia, national palm oil production exceeded 45 million tons in 2024 and has demonstrated a consistent upward trend in recent years (BPS, 2024). Furthermore, the Indonesian Palm Oil Association (GAPKI) reported that total production of crude palm oil (CPO) and palm kernel oil (PKO) reached approximately 51.66 million tons in 2025. This growth has been supported by increasing domestic consumption driven by the national biodiesel mandate, while exports continue to contribute significantly to Indonesia's non-oil and gas export revenues (GAPKI, 2026). As a result, the palm oil industry has become a major contributor to economic growth, employment generation, and national development.

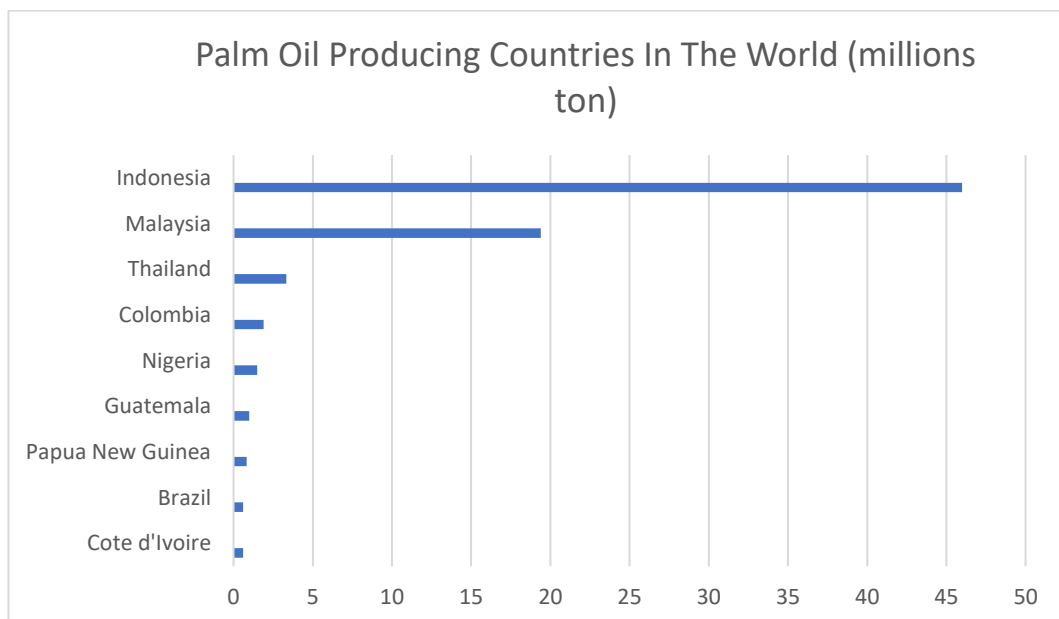


Figure 1. Number of Countries Producing Palm Oil in The World

Source: (USDA, 2025)

Despite its substantial economic contribution, the rapid expansion of the palm oil industry has also intensified environmental challenges associated with plantation and milling operations. Palm Oil Mill Effluent (POME), solid trash, hazardous waste (B3), and household waste from employee residential areas are among the waste streams produced by palm oil production activities. In addition to contributing to greenhouse gas emissions, improper management of these waste streams may have detrimental effects on soil conditions, water quality, air quality, and ecosystem sustainability (Maulida, Saputri, Natanael, & Wikaningrum, 2023). As a result, environmental management is now a crucial component of the palm oil industry's operational sustainability.

Waste governance has become a crucial element of sustainable industrial operations, among other environmental management concerns. Sustainable waste management has taken center stage in industrial management in recent years, especially in industries like palm oil that have significant environmental impacts. Because waste management directly affects ecological quality, regulatory compliance, resource efficiency, and community well-being, it is now seen as a crucial aspect of environmental governance rather than just a sanitation issue. Research carried out in Indonesia shows that, when bolstered by institutional coordination, stakeholder participation, and strategic planning, circular and integrated waste management systems considerably improve environmental performance. Waste banks, source segregation systems, composting facilities, and recycling programs, for instance, have been demonstrated to enhance waste flows and lessen environmental burdens while promoting sustainability goals (Istiyani & Handayani, 2022).

The Indonesian government created the Program Penilaian Peringkat Kinerja Perusahaan (PROPER), a public disclosure-based environmental performance assessment system, to promote corporate environmental responsibility and bolster environmental governance. Through an open rating system intended to promote responsibility and ongoing environmental progress, PROPER assesses company environmental compliance and performance (Ministry of Environment

and Forestry, 2024). Over time, PROPER has transformed from a tool for pollution management into a more comprehensive framework for sustainability governance that encourages innovation, resource efficiency, environmental excellence, and stakeholder involvement. Research indicates that business environmental performance can be successfully enhanced by environmental rating programs like PROPER through increased public accountability and reputational incentives (Maside-Sanfiz, Suarez-Fernandes, Lopez-Penabed, & Alzghoul, 2026).

A five-level color rating system that represents a company's environmental performance and compliance status is used in PROPER's implementation. Companies who continuously exhibit environmental excellence via innovation, resource efficiency, sustainable business practices, and community empowerment initiatives that go above and beyond legal standards are given the highest rating, Gold. Green certification is given to businesses who use proactive environmental management programs and ongoing improvement techniques to achieve environmental performance above and beyond compliance. Blue denotes complete adherence to all relevant environmental laws and guidelines. Red, on the other hand, indicates that a business has undertaken environmental management initiatives but has not yet fully complied with legal standards. A Red grade indicates serious compliance gaps that need to be fixed, even though business operations may continue. It may also have a detrimental impact on stakeholder confidence, the company's reputation, and future environmental performance reviews. Businesses that deliberately violate the law or are careless and cause significant environmental pollution or damage are given the lowest rating, Black. Stricter regulatory enforcement, legal penalties, operational limitations, heightened government monitoring, and serious reputational repercussions that could impact market access and business continuity are all possible outcomes of such a rating (Ministry of Environment and Forestry, 2024).

Following recent regulatory developments, waste management has become much more important within the PROPER framework. The Ministry of Environment and Forestry (KLHK) continued to oversee the 2024 PROPER assessment, which was released before Indonesia's environmental governance institutions were restructured (Ministry of Environment and Forestry, 2024). The

Ministry of Environment/Environmental Control Agency (KLH/BPLH) was given responsibility for environmental monitoring after the government was reorganized in 2024, while the Ministry of Forestry was reinstated. Expectations for environmental compliance are nonetheless strict in spite of these institutional changes. Significantly, the evaluation parameters for the 2025 PROPER assessment were expanded from three to five categories: water, air pollutants, hazardous waste (limbah B3), hazardous materials (B3), and household trash (sampah domestik). The regulatory emphasis on household waste management as a crucial aspect of business environmental performance is reflected in this modification.

For palm oil firms that run estate-based settlements, the increasing focus on residential waste management is especially pertinent. In contrast to many other industrial sectors, palm oil plantations and mills sometimes offer accommodation for workers and their families, resulting in a special operating environment where home and industrial waste streams coexist in the same space. As a result, trash from residential areas is included in the environmental impact of palm oil operations, which goes beyond production activities. Domestic waste streams, especially organic waste, plastics, and packaging materials, require systematic segregation, collection, transportation, and disposal mechanisms to prevent environmental degradation and support sustainable operations, according to research on waste governance in rural and semi-urban areas (Sapanli, et al., 2023). However, production-related waste streams have historically gotten more attention than domestic trash management, which has led to operational inefficiencies and difficulties with environmental compliance.

A pertinent example in this regard is PT Bisma Dharma Kencana (PT BDK), a palm oil plantation and processing business situated in Katingan Regency, Central Kalimantan Province. The company was founded in 1996 and started operating a palm oil mill in 2004, processing 20–40 tons of Fresh Fruit Bunches (FFB) per hour. The enterprise generates a number of waste streams, including POME, solid waste, hazardous waste, and domestic trash from employee residential areas, in addition to producing palm kernel and crude palm oil (CPO). The management of domestic trash produced within its housing complexes is one of the environmental

management issues PT BDK faces as an estate-based business with a sizable resident workforce. These issues go beyond production-related activities.

Since 2014, PT BDK has taken part in the PROPER program. The company obtained a red rating during its first year of participation, which reflects the difficulties that newly participating organizations frequently encounter in adjusting to the program's environmental compliance standards. After this first stage, PT BDK continuously achieved a blue grade from 2015 through the July 2023–June 2024 assessment period, indicating a significant improvement in environmental performance. This accomplishment demonstrated complete adherence to relevant environmental laws and demonstrated the presence of a comparatively stable environmental management system across the business's operations.

However, PT BDK's overall red grade in the 2025 PROPER assessment marked a serious setback for the company's environmental performance. Crucially, non-compliance in the residential waste management category was the specific cause of this outcome rather than problems in other environmental categories. Regardless of performance in other environmental elements, a single category obtaining a red rating under the PROPER assessment system may result in an overall Red rating (Ministry of Environment and Forestry, 2024). This situation shows how home waste management has changed from being a supporting operational concern to a strategic factor that determines company sustainability performance and environmental compliance.

According to preliminary findings, PT BDK's housing compounds still have a generally unorganized domestic waste management system. There is no waste segregation at the source, irregular collection schedules, unclear operational procedures, and no formal coordination mechanisms for final disposal with the local Environmental Agency (Dinas Lingkungan Hidup/DLH). These challenges are consistent with findings from previous studies, which identify inadequate operational procedures, weak institutional coordination, and limited monitoring mechanisms as major barriers to effective waste governance in Indonesia (Jannah Nasution, Wulandari, Prasetyo Wahono, & Bakri, 2025). Because of this, current

waste management procedures might not sufficiently support more general sustainability goals or regulatory compliance.

Recent research also shows how home waste management systems might incorporate the concepts of the circular economy. Clear operational procedures and cooperative governance frameworks enable the successful implementation of organic waste treatment, composting projects, food waste recycling, and material recovery programs, according to research done in a number of Indonesian locations (Hamdani, Shidiqie, Priyadi, Dinurrianah, & Adli, 2025). In addition to improving compliance performance, these strategies give businesses the chance to increase resource efficiency, save operating costs, lessen their impact on the environment, and generate extra value from waste streams. Few studies explicitly look at residential waste management in industrial estate settings, especially in remote palm oil operations, despite the expanding body of literature on integrated waste management and circular economy implementation in Indonesia. There is a knowledge gap regarding the design and implementation of integrated home waste management systems within plantation-based organizational structures since the majority of current research focuses on municipal waste systems or community-based initiatives. Because palm oil estates entail intricate relationships between corporate divisions, estate managers, operational units, residential communities, and government agencies operating in a semi-contained environment, this gap is especially crucial.

In light of these circumstances, the purpose of this study is to evaluate PT BDK Palm Oil Mill's current home waste management procedures and create a framework for the strategic implementation of integrated domestic waste management. This study aims to offer useful suggestions that promote sustainable waste management, enhance environmental performance, and fortify future PROPER compliance by looking at operational difficulties, institutional coordination mechanisms, and the alignment between corporate practices and regulatory expectations.

1.2 Research Gap

To establish the academic foundation of this study, it is important to review previous research related to waste management systems, particularly in the context of integrated approaches, governance, and implementation challenges. Prior studies have explored waste management from various perspectives, including global frameworks, developing country contexts, and community-based systems in Indonesia. However, these studies differ in terms of focus, scope, and application. The following table summarizes selected previous studies, highlighting their key findings and identifying the research gaps relevant to this study.

Table 1. Research Gaps

No	Author(s) & Year	Context	Key Findings	Identified Gap
1	(Wilson, et al., 2015)	Global waste management (developing countries)	Introduced Integrated Sustainable Waste Management (ISWM) framework emphasizing integration of technical, institutional, and stakeholder dimensions	Does not address implementation in industrial estate or corporate-managed residential areas
2	(Velis, Wilson, & Cheeseman, 2009)	Developing countries	Waste management challenges are primarily linked to governance, institutional capacity, and system integration rather than technology	Limited focus on corporate-led waste management systems
3	(Maalouf, A., & Agamuthu, P., 2023).	Developing countries review	Waste systems often suffer from poor infrastructure, weak governance, and inconsistent collection systems	No specific analysis of plantation-based or industrial housing environments
4	(Viljoen, Schenck, Volschenk, Blaauw, & Grobler, 2021)	Rural household waste management	Effective waste management depends on infrastructure availability, role clarity, and coordination	Focus limited to municipal/rural context, not industrial settlements
5	(Istiyani & Handayani, 2022)	Indonesia (community-based waste system)	Circular economy approaches (waste banks, segregation) improve sustainability when supported by governance systems	Focus on community-driven systems, not corporate governance
6	(Nasution, Wulandari, Wahono, & Samsul, 2025)	Indonesia (policy implementation)	Waste management policies often fail due to weak coordination and poor implementation mechanisms	Lack of operational framework for practical implementation at company level
7	(Hemidat, et al., 2022)	MENA region (circular economy waste)	Integrated waste management requires alignment between policy, stakeholders, and operational systems	Does not explore estate-based industrial environments or

No	Author(s) & Year	Context	Key Findings	Identified Gap
				internal company systems

Based on Table 1, it can be observed that most research focuses on municipal and community-based waste management systems, while limited attention is given to corporate-led waste management within industrial estate environments. Furthermore, there is a lack of practical implementation frameworks tailored to plantation-based residential settings. Therefore, this study aims to fill this gap by developing an integrated domestic waste management framework aligned with the operational context of a palm oil mill estate.

1.3 Problem Statement

PT BDK Palm Oil Mill is evaluated through an internal environmental assessment framework that follows the five-category structure of the 2025 PROPER regulation, consisting of water management, air emissions, hazardous waste (limbah B3), hazardous materials (B3), and solid waste. The most recent assessment shows that PT BDK performs satisfactorily in four categories—water, air, limbah B3, and B3—each receiving a blue rating, which indicates regulatory compliance and acceptable operational performance. On the other hand, solid waste management was given a red rating. A single red rating automatically results in an overall red classification, regardless of the positive performance in the other categories, because the PROPER assessment rules dictate that a company's overall classification follows the lowest category score obtained.

Domestic waste produced within the firm's estate-based housing area, an operational unit that is a part of the larger company environment, is the main cause of the red grade in solid waste management. The management of domestic organic waste, plastics, and other municipal-type waste produced on a daily basis by employees and their families has a significant impact on indicators within the solid waste category, even though the evaluation is conducted at the corporate level. Source segregation, proper operating methods, regular collection schedules, sufficient facilities, and organized coordination with the local Environmental

Agency (DLH) for final disposal are all absent from PT BDK's existing system. These flaws have led to unmanaged waste accumulation and noncompliance with PROPER 2025's stricter regulations, which evaluate solid waste as a separate and more thorough category.

This circumstance highlights a structural weakness in PT BDK's management of residential trash. The lack of an integrated and coordinated domestic waste management system exposes the company to ongoing regulatory risk, even while it exhibits compliance in other environmental dimensions. The company's capacity to achieve sustainability standards is hampered by the shortcomings in planning, monitoring, institutional responsibility, and interagency communication, which also put its overall environmental performance rating at risk.

PT BDK is impacted by external environmental issues in addition to internal operational shortcomings. Companies are under more pressure to improve household waste management systems as a result of the implementation of PROPER 2025, more regulatory monitoring, rising sustainability standards, and changing environmental governance arrangements. The necessity of an organized and comprehensive waste management strategy is further highlighted by these outside changes.

Given these circumstances, the primary issue this study attempts to solve is the absence of an organized and integrated home waste management system that can both support PT BDK's larger sustainability goals and satisfy PROPER 2025 criteria. In order to create an integrated domestic waste management system appropriate for the company's estate-based operational context, the research aims to evaluate current operational and institutional shortcomings.

1.4 Research Questions

The following research questions are addressed in this study in accordance with the identified problem statement:

1. How is domestic waste currently managed within PT BDK's operational environment, and what specific practices or shortcomings contribute to the red classification in the PROPER solid waste category?

2. What external, institutional, and operational factors hinder the effectiveness of PT BDK's domestic waste management system in meeting PROPER 2025 requirements?
3. To what extent is PT BDK organizationally prepared to implement an integrated domestic waste management system, considering its existing resources, coordination mechanisms, and regulatory obligations?
4. What integrated domestic waste management framework can be developed for PT BDK to strengthen compliance with PROPER 2025 and enhance sustainable operational performance?

1.5 Research Objectives

Based on the problems that have been identified, this research aims to achieve the following objectives:

1. To examine the existing domestic waste management practices within PT BDK's estate-based operational environment and assess the key factors that contributed to the red classification in the PROPER solid waste category.
2. To determine the institutional, operational, coordination, and external elements that affect PT BDK's domestic waste management system's efficacy.
3. To assess PT BDK's organizational preparedness for putting in place an integrated household waste management system, taking into account its internal procedures, resources, and regulatory compliance systems.
4. To develop an integrated framework for managing home trash that is compatible with PT BDK's operational environment, promotes better PROPER 2025 compliance, and improves the company's sustainability performance.

1.6 Scope of the Study

The domestic waste management system in the Central Kalimantan employee housing area of PT BDK is the subject of this study. The scope covers the stages of waste generation, segregation, temporary storage, internal collection

procedures, transportation practices, and the coordination process with the local Environmental Agency for final disposal. It also includes a thorough analysis of the current state of domestic waste handling. Additionally, the study examines how current management practices and adherence to the 2025 PROPER solid waste criteria are shaped by institutional arrangements and operational procedures.

Household garbage generated by workers and their families who live in the company's estate housing is the main focus of the study. Paper, plastics, biological trash, and other municipal waste frequently found in home settings fall under this category. The study creates an operational framework for the implementation of an integrated home waste management system in addition to characterizing and evaluating current practices. In order to create a waste management system that is both functional and compliant, the framework describes the organizational responsibilities, necessary facilities, workflow design, monitoring methods, and interaction pathways. Therefore, the goal of the study is to create a strategic and useful model that can assist PT BDK's larger sustainability goals and improve its environmental performance.

1.7 Benefits and Limitations of the Study

By investigating the use of integrated home waste management within a plantation-based industrial housing setting, this study offers both academic and practical value. However, the research has a number of limitations because of its stated focus, methodological approach, and case-specific context. The study's primary advantages and constraints are described in the ensuing subsections.

1.7.1 Benefits of the Study

This study provides several important contributions, both for PT BDK and for broader academic and practical discussions on domestic waste management in remote industrial settings:

1. Practical Guidance for PT BDK

The study offers a methodical and practically workable framework for setting up an integrated domestic waste management system in the residential area of

PT BDK. Organizational responsibilities, facility needs, workflow design, and coordination mechanisms are all included in the recommendations, which can help the business improve its performance in the PROPER 2025 evaluation's solid waste category.

2. Contribution to Academic Literature on Waste Management in Plantation-Based Residential Areas

There are currently few empirical studies on the governance of residential trash in industrial housing built on plantations. This study contributes theoretical and practical understanding of behavioral dynamics, infrastructure planning, institutional preparedness, and implementation issues in remote estate settings. The results add to the body of knowledge on sustainable waste management outside of urban and municipal settings.

3. Support for Local Government and Environmental Agencies

The study determines the operating circumstances and capacity requirements necessary for successful cooperation between PT BDK and the government because final waste processing is associated with the District Environmental Agency. This contribution clarifies service integration, logistical alignment, and legal obligations between public waste management systems and private industrial estates.

4. Replicable Model for Other Remote Industrial Communities

The methodological approach and implementation framework developed in this study can be adapted by other palm oil companies or remote industrial settlements that face similar domestic waste challenges. The model offers a reference for designing integrated and compliant waste systems in environments where formal municipal services are limited.

1.7.2 Limitations of the Study

Despite its contributions, this study has several limitations inherent to its scope and methodology:

1. Single-Case Design

The study examines only one palm oil mill, PT BDK in Central Kalimantan so the findings may not be broadly generalizable to mills operating under different geographical, regulatory, or operational conditions.

2. Dependence on Site-Specific Stakeholder Perspectives

The analysis relies primarily on interviews and internal documents from PT BDK and local stakeholders. This reliance may introduce bias or limit the diversity of perspectives represented in the findings.

3. Operational Rather Than Technical or Environmental Focus

The study does not include engineering-based analyses such as detailed waste characterization, emission quantification, or full financial cost–benefit modeling. As a result, the recommendations emphasize strategic and operational considerations rather than technical or quantitative assessments.

4. Exclusion of Community Behavioral Assessment

The study does not investigate the behavioral or sociocultural dynamics of worker households, which may limit insights into long-term adoption and compliance with proposed waste management practices.

1.8 Structure of the Thesis

The overall structure of this thesis is systematically structured to guide the reader, from identifying the research problem to formulating conclusions and recommendations. This thesis consists of five main chapters, each of which is described as follows:

1. Introduction

The study's background, problem description, research questions, objectives, and scope are all described in this chapter, along with the anticipated advantages and constraints. Additionally, it provides an overview of PT BDK in order to demonstrate the case's significance and make clear the research's intended contribution.

2. Literature Review

The theoretical underpinnings of the study, such as integrated residential waste management, operational sustainability in industrial settings, system integration, multi-stakeholder collaboration, and institutional practices in

waste governance, are covered in this chapter. A synthesis that connects these frameworks to the thesis's analytical focus wraps off the chapter.

3. Research Methodology

The research design and case study methodology, data collection techniques (interviews, observations, and document analysis), and the analytical framework used in the study are all covered in this chapter. It also describes the methods employed to guarantee the data's quality, dependability, and credibility.

4. Findings and Discussion

This chapter describes the construction of the suggested integrated waste management system, talks about implementation tactics, and gives the empirical findings regarding residential waste management circumstances at PT BDK. In order to determine alignment, contributions, and departures from established frameworks, the results are analyzed using pertinent literature.

5. Conclusion and Recommendations

This chapter summarizes the main conclusions, responds to the study questions, and offers PT BDK useful suggestions for institutional, operational, and policy enhancements. Additionally, it makes recommendations for further studies on household waste management in industrial environments.

CHAPTER II LITERATURE REVIEW

2.1 Introduction

The theoretical foundation of this study is anchored in the Integrated Environmental Governance System (IEGS), which serves as the overarching framework guiding the analysis. Integrated environmental governance highlights the need to handle environmental issues—including household waste—through the interaction of institutions, operational systems, laws, and community behavior rather than as discrete technical challenges. According to governance experts, operational procedures, organizational structures, multi-stakeholder collaboration, and regulatory compliance must all be in harmony for environmental management to be effective (Zhang, 2025). This viewpoint is especially pertinent in plantation-based industrial settings, where residential communities, various organizational units, and outside regulatory bodies are involved in the management of home trash.

Environmental governance, however, is not limited to corporate borders. Broader external environmental factors also have an impact on organizations, influencing sustainability standards, compliance requirements, and strategic priorities. Political, economic, social, technological, legal, and environmental considerations can have a substantial impact on organizational decision-making and operational performance, according to strategic management literature (Yüksel, 2012). Therefore, it's critical to comprehend the external environment in order to recognize the opportunities, limitations, and pressures that could impact sustainability projects and environmental management practices.

Because of recent advancements in environmental governance and regulatory requirements, external environmental factors are especially pertinent to PT Bisma Dharma Kencana (PT BDK). Companies in environmentally sensitive industries like palm oil now face new compliance requirements as a result of the PROPER 2025 assessment framework change, the growing emphasis on sustainability performance, and the increased emphasis on household waste

management. In order to evaluate the external factors influencing the implementation of domestic waste management and environmental compliance, this study uses PESTLE Analysis as an environmental scanning framework.

Domestic waste management in estate-based industrial housing, like PT BDK, offers a unique organizational and institutional environment from the standpoint of governance. Waste is produced at the home level, but the company's operations are responsible for managing it, resulting in a hybrid governance structure that involves both internal management systems and external stakeholders. Therefore, it is best to think of domestic waste management in this context as an integrated system that includes institutional structures, operational coordination, technological procedures, and regulatory compliance requirements.

Building on this viewpoint, the chapter examines the intricacy of residential waste management in plantation-based industrial housing contexts using a number of complementing frameworks. In order to investigate the macroenvironmental elements that impact environmental management techniques and organizational sustainability initiatives, PESTLE analysis is first presented. As a result, the Integrated Sustainable Waste Management (ISWM) framework offers a comprehensive perspective for analyzing trash flows, stakeholder responsibilities, and system performance (Wilson, et al., 2015). The construction of efficient waste management systems is influenced by institutional structures, internal coordination, and managerial preparedness, as explained by organizational implementation theory. The significance of cooperation between businesses, estate communities, and governmental organizations is made clear by multi-stakeholder and regulatory coordination frameworks, especially with relation to trash collection and final disposal obligations.

Understanding how scheduling, routing, resource allocation, and monitoring systems impact the effectiveness and dependability of waste management operations is aided by operational planning and workflow integration viewpoints. Lastly, the PROPER 2025 Environmental Performance Framework serves as an assessment tool and regulatory standard for evaluating organizational accountability and environmental compliance. When combined, these frameworks offer a thorough theoretical framework for evaluating PT BDK's current household

waste management system and creating an integrated implementation framework that complies with legal and sustainable standards.

As a result, this chapter is organized to cover each theoretical element sequentially. The PROPER 2025 Environmental Performance Framework, organizational implementation, stakeholder and regulatory coordination, operational planning, domestic waste management, and Integrated Sustainable Waste Management (ISWM) are all covered after PESTLE Analysis, a framework for comprehending the external environment influencing environmental management practices. A conceptual framework that incorporates these viewpoints and directs the analysis that follows in this study is offered at the end of the chapter.

2.2 PESTLE Analysis

A strategic management framework called PESTLE Analysis is used to find and assess macroenvironmental elements that could have an impact on long-term sustainability, strategic planning, and organizational performance. Political, economic, social, technological, legal, and environmental aspects are the six aspects of the external environment that the framework looks at. Organizations can find external opportunities and dangers that could impact operational efficacy and strategic decision-making by conducting systematic environmental scanning (Yüksel, 2012). The concept of environmental scanning was initially introduced by (Aguilar, 1967), who underlined how crucial it is to keep an eye on developments in the external environment in order to assist strategic planning. With the addition of legal and environmental components, the framework changed over time from PEST to PESTLE, reflecting the increasing significance of sustainability and regulatory compliance in organizational management. According to (Johnson, Scholes, & Whittington, 2008), organizational performance and strategic choices are constantly impacted by the dynamic external environment in which they operate. In order to make sure that organizational strategies continue to be applicable and adaptable to external changes, it is crucial to comprehend macro-environmental elements.

2.2.1 Political Factors

Political factors refer to government policies, political priorities, institutional structures, and public-sector interventions that influence organizational activities and strategic decisions (Johnson, Scholes, & Whittington, 2008). Organizational operations can be greatly impacted by government initiatives pertaining to public administration, industrial development, sustainability programs, and environmental governance. Because government policies frequently dictate environmental standards, regulatory enforcement systems, and sustainability expectations, political considerations are especially significant in environmentally sensitive industries. Organizations looking to maintain compliance and enhance environmental performance may face both opportunities and problems as a result of changes in government goals or environmental governance systems (Gupta, 2013).

2.2.2 Economic Factors

Economic considerations include macroeconomic circumstances that affect an organization's success, such as inflation, economic growth, labor market conditions, operating expenses, resource availability, and investment capacity (Yüksel, 2012). The distribution of organizational resources and long-term viability are directly impacted by these characteristics. Because businesses must balance sustainability expenditures with operational effectiveness and financial performance, economic factors are equally pertinent to environmental management programs. Therefore, the viability and efficacy of environmental development initiatives and investments related to sustainability are influenced by economic conditions (Johnson, Scholes, & Whittington, 2008).

2.2.3 Social Factors

Societal values, demographic trends, cultural norms, stakeholder expectations, and public awareness are examples of social factors that might affect organizational behavior and decision-making (Johnson, Scholes, & Whittington, 2008). Growing public awareness of environmental sustainability has had a major impact on organizational practices in a number of different

industries in recent years. Organizations are expected by stakeholders to exhibit sustainable operational practices, efficient waste management, and responsible environmental conduct. Consequently, business sustainability programs and environmental management activities are now heavily influenced by social pressures (Carrol & Brown, 2018).

2.2.4 Technological Factors

Innovations, technological developments, infrastructural development, and operational systems that affect an organization's performance and efficiency are all considered technological aspects (Gupta, 2013). Technological advancements frequently present chances to enhance environmental performance, operational efficiency, and resource use. Technological advancements include waste segregation systems, composting technologies, recycling facilities, environmental monitoring systems, and digital reporting platforms can greatly increase the efficacy of waste management. Adopting suitable technologies may also help achieve sustainability goals and regulatory compliance (Yüksel, 2012).

2.2.5 Legal Factors

Laws, rules, standards, policies, and compliance requirements that control organizational operations are examples of legal factors (Yüksel, 2012). These legislative frameworks provide baseline standards that businesses must meet in order to preserve their operating legitimacy and stay out of trouble with the authorities. Environmental rules are especially crucial for industries that have a big impact on the environment. Organizational operations and environmental performance are directly impacted by compliance requirements pertaining to waste management, pollution prevention, environmental monitoring, and sustainability reporting (Johnson, Scholes, & Whittington, 2008). As a result, modifications to environmental laws frequently serve as important catalysts for organizational adaptation and advancements in environmental management.

2.2.6 Environmental Factors

Environmental variables include pollution, waste production, climate change, resource conservation, and environmental sustainability issues, among

other ecological circumstances and environmental difficulties that may have an impact on organizational operations (Gupta, 2013). Organizations are under more pressure to implement sustainable operational procedures and lessen their influence on the environment as environmental degradation becomes more widely recognized. Because of stakeholder expectations, governmental restrictions, and international sustainability programs, environmental factors have grown in importance. Therefore, it is expected of organizations to put in place environmental management systems that support long-term sustainability and resource efficiency while reducing environmental risks (Carrol & Brown, 2018).

2.2.7 Application of PESTLE Analysis in Environmental Management

PESTLE analysis has been used extensively as a strategic environmental scanning technique to assess external factors impacting environmental performance and organizational sustainability. Organizations can use the framework to determine how environmental management practices may be impacted by political agendas, economic constraints, societal expectations, technical opportunities, legal obligations, and environmental dangers (Yüksel, 2012). PESTLE analysis offers an organized method for comprehending external factors that require organizational adaptation and compliance enhancements in environmental governance scenarios. The framework is especially helpful for evaluating stakeholder expectations, technological advancements, legal changes, and sustainability issues that could have an impact on environmental management systems (Gupta, 2013).

The Legal, Environmental, and Political dimensions of PESTLE are frequently the most important in determining how organizations respond to environmental compliance obligations, even though all six categories are pertinent to environmental management. These factors are especially crucial in sectors of the economy that are governed by sustainability laws and environmental performance reviews. As a result, PESTLE analysis offers a suitable framework for investigating the outside variables affecting PT Bisma Dharma Kencana's implementation of household waste management and environmental compliance.

2.3 Domestic Waste Management in Industrial Housing Environments

Domestic waste management in industrial housing environments presents challenges that closely resemble those observed in urban and semi-urban settlements, particularly where institutional capacity and operational systems are limited. Studies show that the effectiveness of household waste management depends on clear role division, adequate collection infrastructure, and strong coordination between managing institutions and local communities (Viljoen, Schenck, Volschenk, Blaauw, & Grobler, 2021). Although these studies focus on municipal settings, their underlying principles are also applicable to plantation-based industrial housing, where residential clusters generate continuous domestic waste but often lack formal municipal waste services.

Research in developing regions further indicates that when settlements fall outside structured waste-management jurisdictions, domestic waste tends to accumulate due to irregular collection, insufficient facilities, and the absence of standardized procedures (Maalouf & Agamuthu, Waste management evolution in the last five decades in developing countries - A review, 2023). This situation is best shown by industrial housing communities situated in isolated plantation areas. Although they function as independent residential settings, their waste management is usually based on internal business agreements rather than integrated metropolitan systems.

These observations immediately apply to PT BDK, whose estate-based staff housing produces daily household organic waste, plastics, paper, and other domestic waste streams. The company must handle waste segregation, storage, internal collection, transportation, and coordination with the local Environmental Agency (DLH) for final disposal on its own since the settlement is situated in a remote plantation area and is not covered by regular municipal waste services. This is consistent with more general data that fragmented waste-handling procedures and operational inefficiencies are frequently caused by weak governance frameworks and ambiguous institutional duties (Hemidat, et al., 2022).

These theoretical tendencies are reflected in PT BDK's lack of an integrated residential waste management system. Waste management is still not standardized, departmental tasks are ambiguous, and there are few ways to coordinate with local authorities. Despite the company's excellent performance in other environmental dimensions, these flaws have led to a red grade in the solid-waste area, as indicated by the PROPER 2025 environmental performance evaluation. This supports the theoretical claim that domestic waste problems in industrial housing are governance concerns resulting from institutional and operational inadequacies rather than just technological ones.

2.4 Integrated Sustainable Waste Management (ISWM)

By combining technical, environmental, institutional, and socioeconomic aspects, the Integrated Sustainable Waste Management (ISWM) framework offers a thorough method for evaluating and enhancing waste systems. UN-Habitat led international policy work that resulted in the development of the ISWM framework, especially through its worldwide evaluations of waste systems in low- and middle-income nations. By offering empirical proof of how sustainable waste management depends on the integration of system components, stakeholder participation, and institutional drivers of performance, further scholarly research further enhanced the concept (Wilson, et al., 2015). ISWM contends that without institutional frameworks, financial mechanisms, and cross-actor coordination, technical solutions alone cannot guarantee system effectiveness.

The three main pillars of the ISWM model are the waste system's components, the stakeholders engaged, and the sustainability factors that influence system performance. Each of the waste-system's components—generation, segregation, collection, transfer, treatment, and final disposal—needs an organized workflow and operational assistance. Research indicates that deficiencies in any of these components lead to systemic inefficiencies, especially in low- and middle-income areas with unevenly developed institutional and operational capacities (Wilson, et al., 2015). ISWM is particularly appropriate for settings where responsibilities are dispersed or not explicitly regulated because of this integrated viewpoint.

For plantation-based industrial housing areas such as PT BDK, the ISWM framework provides a relevant analytical lens. The corporation must take on responsibilities that are normally performed by local government because the settlement operates outside of official municipal garbage systems. Waste segregation at the source, scheduling collection, assigning transportation resources, and making sure disposal complies with environmental regulations are all included in this. The lack of these integrated elements at PT BDK is consistent with research from around the world showing that uncoordinated practices, a lack of oversight, and a lack of institutional ownership frequently plague informal or domestically managed waste systems (Beard, Satterthwaite, Mitlin, & Du, 2022). According to the PROPER 2025 evaluation, the company's poor performance in the solid-waste category was caused by weaknesses in system design, governance, and operational planning, which can be found by applying the ISWM framework.

This study is able to map the technical paths of domestic trash within the residential area of PT BDK and assess how each component interacts with institutional duties and regulatory requirements by using ISWM as a sub-framework. This advances the more general goal of creating an integrated residential waste management strategy that takes into account both regulatory compliance requirements and environmental considerations.

2.5 Organizational Implementation

How organizations convert sustainability pledges and environmental policies into uniform operational procedures is explained by organizational implementation theory. According to foundational studies, firms that create clear internal structures, allocate roles efficiently, and match resources with operational goals are more successful in implementation (Sajjad, Mustafa, & Alfaro, 2023). Subsequent public administration research confirms that many environmental efforts fail due to fragmented coordination, administrative follow-through, and monitoring mechanisms rather than poor policy formulation (Trein & Ansell, 2020).

Recent research highlights the importance of cross-unit integration and institutional preparedness in environmental management. (Aarons, et al., 2016)

argue that successful implementation requires leadership commitment, procedural consistency, and mechanisms that ensure collaboration across administrative and field-level units. More recent research demonstrates that organizational factors including internal responsibility, interdepartmental communication, and operational routine clarity have a significant impact on environmental compliance in industrial operations (Ma, Ock, Wu, & Zhang, 2022). Environmental programs typically stay symbolic rather than functional when these components are insufficient.

Internal reporting and monitoring systems are the foundation of implementation, according to environmental governance literature. Even with written policies, firms find it difficult to maintain compliance when oversight is inadequate (Ban & Hill, 2025). This problem is most noticeable in industrial housing settings where management units and resident communities must continuously coordinate daily waste-handling chores, such as segregation and collection.

PT BDK can immediately benefit from these insights. The company's domestic waste problems are caused by organizational gaps, including unclear responsibilities, a lack of standard operating procedures, poor interdepartmental coordination, and inadequate integration between estate management and supporting units, rather than just technical limitations. As a result, rather than through official channels, household trash behaviors develop informally. Therefore, organizational implementation theory offers a crucial analytical lens for comprehending why PT BDK has not yet developed a cohesive domestic waste management system and what institutional changes are necessary for successful system growth. Using this framework, the study assesses whether PT BDK's managerial control, resource allocation, and internal structures are strong enough to facilitate the shift to an integrated household waste management system that complies with PROPER 2025 requirements.

2.6 Multi Stakeholder and Regulatory Coordination

Strong collaboration between several stakeholder groups, such as estate management, household communities, local government institutions, and

environmental regulators, is essential for effective domestic waste management in industrial housing situations. Because waste governance entails shared duties across operational, social, and regulatory activities, institutional alignment is essential. According to (Lähdesmäki, Siltaoja, & Spence, 2017), Organizations' recognition and response to stakeholder expectations are influenced by stakeholder salience, which is governed by power, legitimacy, and urgency. Estate managers must precisely identify important players in waste management settings, evaluate their impact, and include their demands into planning and decision-making.

Coordination between many stakeholders increases system performance and regulatory compliance from a governance standpoint. (Bodin, 2017) notes that collaborative environmental governance strengthens policy alignment, clarifies division of responsibilities, and reduces implementation gaps, especially in regions where enforcement capacity is uneven. In domestic waste settings, effective coordination typically requires shared planning structures, transparent communication channels, and consistent monitoring mechanisms to ensure that standards are followed (Ewim, Achumie, Adeleke, Okeke, & Mokogwu, 2024).

In plantation based industrial housing environments such as PT BDK in Central Kalimantan, this collaborative dimension becomes even more essential. Workers' housing areas are geographically dispersed, supporting infrastructure for waste handling may be limited, and municipal waste services often do not extend into plantation areas. Consequently, PT BDK must operate not only as an estate manager but also as a governance actor that aligns community behavior, estate level operational procedures, and regulatory requirements. Measures such as establishing joint waste committees, formalizing cooperation with local authorities, and implementing household level compliance monitoring can significantly improve system reliability. This coordinated approach ensures that domestic waste handling becomes a shared governance effort that supports environmental compliance and operational sustainability within the industrial housing community.

2.7 Operational Planning and Workflow Integration

Operational planning is essential for ensuring that domestic waste management functions as a coherent and reliable system within industrial housing

environments. Effective planning requires clear definition of tasks, allocation of responsibilities, scheduling of waste handling activities, and alignment between onsite operational procedures and broader organizational objectives. As described by (Del Carmen-Niño, Herrera-Navarrete, Juárez-López, Sampedro-Rosas, & Reyes-Umaña, 2023), operational effectiveness in waste services depends on the consistency of daily routines, adequacy of equipment, and the reliability of personnel deployment, especially in areas where institutional capacity is limited.

In order to close the gap between planning and execution, workflow integration is essential. Each step of waste handling—collection, interim storage, internal transportation, final disposal, and environmental monitoring—can function as a cohesive sequence rather than as separate tasks thanks to integrated workflows. According to (Addas, Khan, & Naseer, 2024), Integrated waste workflows increase productivity by cutting down on pointless handling, cutting down on delays, and guaranteeing that every operational unit gets the data and inputs it needs to function well.

Workflow integration is even more important in industrial housing settings like PT BDK because domestic waste systems don't have direct municipal support. In order to accommodate the daily routine of the worker housing community, the estate must organize personnel schedules, route planning, vehicle preparedness, waste segregation procedures, and monitoring routines. Operational gaps arise and waste builds up when workflows are fragmented, such as when collection schedules are uneven, segregation methods are unclear, or transport duties are not coordinated.

Establishing structured collection schedules, standardizing tools and equipment, recording procedures for every handling stage, and coordinating estate workers' routines with environmental requirements are all part of PT BDK's efforts to tighten operational planning and integrate workflows. Daily operations can be kept consistent and traceable by integrating reporting systems, monitoring checkpoints, and basic performance indicators. These upgrades will enable PT BDK's household waste management to transition from ad hoc procedures to a reliable and effective operational system that promotes environmental compliance and enhances housing area conditions.

2.8 PROPER 2025 Environmental Performance Framework

The PROPER program, administered by the Indonesian Ministry of Environment and Forestry (KLHK), is a national environmental performance assessment scheme designed to evaluate corporate compliance and performance across multiple environmental categories. Since its establishment, PROPER has acted as a regulatory standard for Indonesian industry, providing external monitoring and public responsibility via a color-coded rating system. Solid waste management was added to PROPER in 2025 as an independent evaluation category, bringing home and municipal waste handling up to the same regulatory level as hazardous waste control, water management, and air emissions (Ministry of Environment and Forestry, 2024).

This version represents a major change: businesses are now required to demonstrate comprehensive waste governance, which includes trash from employee housing, domestic life, and other non-industrial activities, rather than just industrial waste or effluent. The government's acknowledgement that corporate environmental responsibility encompasses all waste streams related to business operations and goes beyond manufacturing processes is demonstrated by the inclusion of solid trash. In order to comply with PROPER 2025, industrial housing estates such as PT BDK must have integrated waste management systems that guarantee segregation, appropriate storage, transportation, documentation, and final disposal in compliance with regulatory standards.

The stakes for businesses are also altered by PROPER 2025's inclusion of home garbage. Regardless of compliance in other areas, a red grade in the solid waste category might lead to an overall low level of environmental performance. Because of this unity of evaluation requirements, a company's overall environmental grade is at risk even if it performs exceptionally well in water management, emissions, or hazardous waste treatment. As a result, PROPER 2025 guides the design and evaluation criteria for the integrated residential waste management model created for PT BDK, acting as both a conceptual anchor and a legislative requirement for this project. The report matches its analysis and suggested model with the precise requirements and indicators that national authorities would utilize by adopting PROPER 2025 as a regulatory framework.

This guarantees that the suggestions are based on actual regulatory requirements rather than conjecture, making the study immediately applicable and useful for PT BDK's compliance requirements.

2.9 Conceptual Framework of the Study

The conceptual framework of this study is developed based on the integration of the main theories discussed in this chapter, including environmental governance, ISWM, organizational implementation, stakeholder coordination, operational planning, and PROPER 2025. This framework explains how these elements interact in shaping domestic waste management practices in PT BDK. It also serves as a guide for analyzing current conditions and developing an integrated waste management system. The overall structure of this framework is presented in Figure 1.

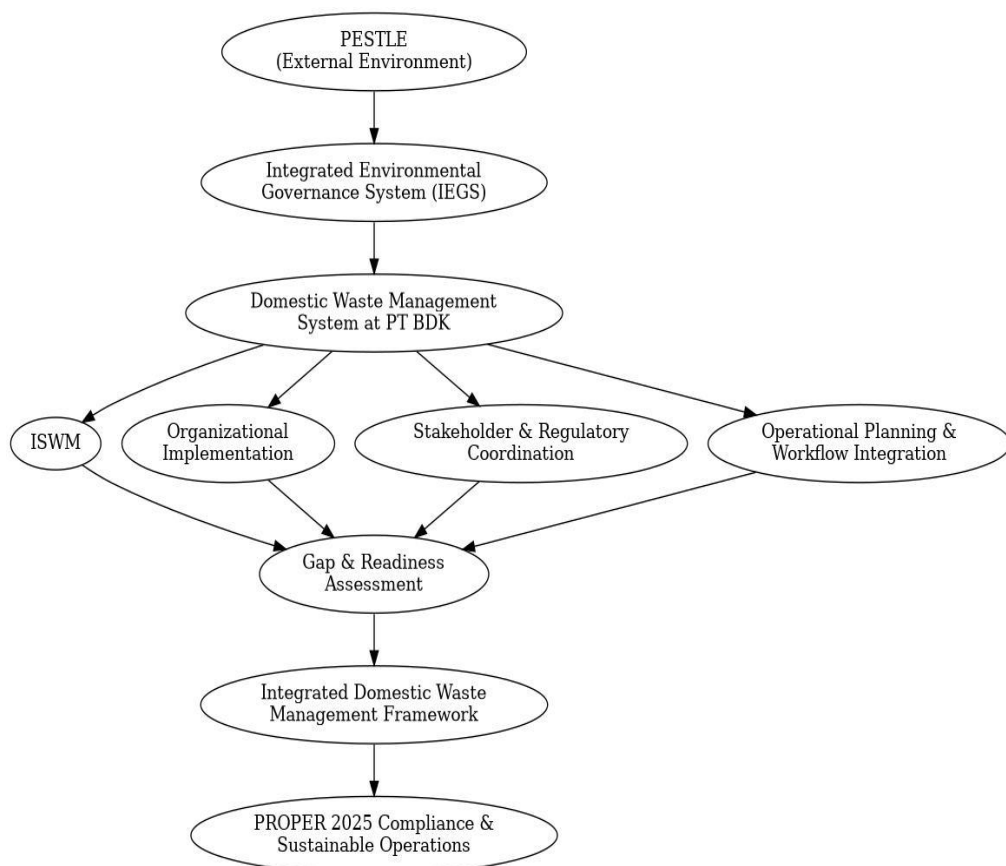


Figure 2: Research Framework

2.10 Synthesis and Chapter Summary

The theoretical perspectives reviewed in this chapter collectively provide a comprehensive foundation for analyzing domestic waste management in PT BDK's industrial housing environment. Domestic garbage is viewed as a regulated governance issue rather than a technical operation through the broad lens established by the Integrated Environmental Governance System. This paradigm emphasizes the significance of coordinated responsibilities among internal and external actors, regulatory compliance, and institutional alignment. The Integrated Sustainable Waste Management framework provides a methodical understanding of the interactions between waste-system components, stakeholder roles, and sustainability drivers within this broad governance structure. As demonstrated by PT BDK's solid waste performance evaluation, ISWM explains why operational failures can result from a lack of integration across functional elements including facilities, procedures, and actor duties. This perspective is supported by organizational implementation theory, which explains how internal coordination, managerial choices, and institutional preparedness affect the success of establishing an integrated waste system. These ideas show how the absence of an organized household waste system in estate-based housing is caused by deficiencies in planning, role definition, and internal oversight in the framework of PT BDK.

In light of PT BDK's reliance on the District Environmental Agency for final waste disposal, the chapter also highlights the significance of multi-stakeholder and regulatory coordination. It has been demonstrated that maintaining compliance, logistical viability, and long-term operational continuity requires effective integration between the business and municipal authorities. The last analytical dimension is provided by operational planning and workflow integration, which describe how scheduling, resource allocation, routing, collection techniques, and monitoring mechanisms affect daily system reliability. These ideas aid in the explanation of the real-world issues that arose as a result of PROPER 2025's increased solid waste management requirements. All of the theoretical elements are connected by the PROPER 2025 Environmental Performance Framework, which serves as the regulatory anchor. It offers systematic indicators for assessing system

performance and operationalizes compliance standards. The framework is especially pertinent because PT BDK's shortcomings in domestic solid waste management led to a red rating, highlighting the necessity of an integrated and governance-driven solution.

In conclusion, this chapter unifies several theoretical perspectives into a cohesive conceptual framework. The result of interactions between governance systems, integrated waste-system components, organizational implementation, stakeholder coordination, operational planning, and regulatory compliance requirements is known as domestic waste management in PT BDK. This synthesis provides the analytical basis for the evaluation described in Chapter 4 and informs the conceptual framework that directs the investigation.

CHAPTER III RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the methodological approach used to investigate the domestic waste management challenges within the residential area of PT BDK and to develop an integrated waste management model aligned with the 2025 PROPER environmental performance framework. A qualitative case study design is used to provide a thorough examination of the system as it operates within its actual organizational and regulatory framework, since the goal of this study is to examine actual operating conditions, institutional arrangements, and coordination mechanisms. To guarantee that the results are reliable, methodical, and competent to answer the research objectives, a methodological framework is required. Thus, the research design, the case study environment, the unit of analysis, the data collection techniques, and the analytical methodologies used are all described in this chapter. The methodological decisions are in line with the theoretical underpinnings discussed in Chapter 2, including the PROPER 2025 regulatory framework, the Integrated Environmental Governance System, and the Integrated Sustainable Waste Management (ISWM) framework.

The methods utilized to guarantee the accuracy and consistency of the data are also covered in this chapter, along with the ethical principles followed during the investigation. The methodological approach outlined here provides the basis for producing insights, building the suggested waste management model, and guaranteeing that the study's findings are well supported by data.

3.2 Research Design

The research design of this study adopts a qualitative case study approach to generate an in-depth understanding of how domestic waste management is organized and implemented within PT BDK's estate-based housing environment. Because the problem being studied involves intricate relationships between institutional arrangements, operational procedures, and regulatory expectations, this design is suitable. Instead of measuring variables, the study aims to investigate how waste management procedures are organized, how duties are allocated among

departments like housing management, HSE, and operational supervisors, and how these arrangements affect how well waste is handled in residential areas.

Additionally, the qualitative case study methodology allows the researcher to look at operational elements that are not possible with quantitative methodologies. Domestic waste management in the context of BDK's estate housing includes procedures including daily garbage collection, route planning, cleaning staff distribution, resident-supervisor communication, and the provision of facilities like bins and temporary storage locations. To determine where gaps exist, how coordination occurs, and how the system complies with internal regulations and external environmental constraints, these activities necessitate careful observation and descriptive analysis. This methodology allows the study to analyze the institutional dynamics, practices, and obstacles that affect waste governance in the company's residential area.

3.3 Research Context

Located in Katingan, Central Kalimantan, PT BDK is a palm oil plantation and mill that operates in a plantation-based industrial setting with a company-owned residential area for its workers. The housing complex supports employees' and their families' daily activities, producing domestic household trash that contributes to the company's overall environmental impact. The residential area's waste output is technically evaluated under the company's environmental performance even if it is not a component of the mill's manufacturing process because it is inside the organizational operating boundary acknowledged by local regulators.

In the past, PT BDK has shown excellent environmental compliance in areas pertaining to hazardous materials, hazardous waste management, air emissions, and water quality. However, the 2025 PROPER assessment and other recent environmental evaluations found serious shortcomings in the way domestic solid waste from the residential area is managed. These flaws are caused by a lack of coordinated mechanisms with the District Environmental Agency (DLH) for final disposal, a lack of infrastructure for temporary storage, irregular collection schedules, and an absence of systematic waste segregation.

These difficulties are exacerbated by the distinct organizational and physical features of PT BDK's estate context. Because the plantation and mill are situated in a remote area with little municipal garbage services, the enterprise is in charge of handling the majority of household waste. For collection, transportation, and temporary garbage placement, the residential settlement is entirely reliant on internal business operations. Due to these circumstances, PT BDK is positioned as an industrial player as well as a supplier of fundamental environmental services to its residential neighborhood.

In light of this, the company's solid waste performance is a reflection of both its technical operational capability and the efficiency of its governance system in organizing duties, scheduling procedures, and adhering to legal requirements. Examining how plantation-based enterprises handle domestic trash under changing environmental requirements and how organizational mechanisms can be enhanced to meet regulatory benchmarks is pertinent and appropriate given the circumstances at PT BDK.

3.4 Unit of Analysis

The unit of analysis in this study is the domestic waste management system operating within PT BDK's employee residential area in Central Kalimantan. The system is examined as an integrated organizational process that involves waste generation at the household level, internal handling routines, operational coordination between estate and mill divisions, and the company's interface with the District Environmental Agency (DLH) for final disposal. This unit is selected because it represents the specific organizational segment that contributed to the company's low performance in the 2025 PROPER assessment.

The analysis focuses on how domestic waste is segregated, stored, collected, transported, and governed within the company's operational boundary. It also examines the institutional arrangements, decision-making mechanisms, and routine operational practices that shape the current waste-handling conditions. By framing the residential waste system as the unit of analysis, the study is able to isolate the structural and operational gaps that underpin PT BDK's compliance challenges

while maintaining alignment with the broader organizational and regulatory context.

3.5 Data Collection Methods

This study employs multiple qualitative data collection methods to ensure a comprehensive and credible understanding of domestic waste management practices within PT BDK. Three primary sources of evidence were used: interviews, field observations, and document analysis. These methods allow the triangulation of data, strengthen the robustness of the findings, and help capture both formal procedures and real operational conditions. Each method is described in detail in the following subsections.

Table 2. List of Semi-Structured Interview Questions

Semi-Structured Interview Questions Code	Semi-Structured Interview Questions	Linked Research Question
IQ-1	How is domestic solid waste currently managed within PT BDK's estate-based housing area?	RQ-1
IQ-2	What challenges are encountered in managing domestic waste under PROPER 2025 requirements?	RQ-2
IQ-3	How are roles and responsibilities related to domestic waste management coordinated across departments?	RQ-2
IQ-4	What operational constraints affect waste collection, segregation, and disposal?	RQ-2
IQ-5	What elements should be included in an integrated domestic waste management system for PT BDK?	RQ-3
IQ-6	How can the proposed system be implemented to improve compliance with PROPER 2025?	RQ-4

3.5.1 Interviews

This study employed In depth interview using semi-structured interviews as the primary method of data collection to explore domestic waste management practices within PT BDK's estate-based housing environment. In order to guarantee consistency in answering the research questions while providing freedom to gather detailed, role-specific insights from various organizational viewpoints, semi-structured interviews were chosen. This method works well for a qualitative case study that aims to comprehend operational procedures, institutional structures, and implementation issues in a particular organizational setting.

Based on the four research questions of the study, a set of fundamental interview questions was created. While probing and follow-up questions were tailored to each informant's job and duties, these inquiries were applied uniformly to all key informants to allow for response comparability. The interviews centered on the current state of domestic waste management, operational and institutional inadequacies, PROPER 2025 regulatory compliance, and the specifications for creating and putting into place an integrated domestic waste management system.

To guarantee clarity, in-depth explanation, and precise interpretation of responses, the interviews were carried out through direct, in-person contacts with chosen informants. Purposive sampling was used to choose key informants, focusing on operational and managerial staff who are directly involved in estate operations, employee housing administration, and environmental management. This choice guaranteed that the data included operational and strategic viewpoints pertinent to the study's goals.

Table 3. List of Informants for In-Depth Interview

No	Name	Job Position	Experience	Background
1	Informant A	Manager HRD	25 years	Master of Management
2	Informant B	Manager HSE	20 years	Master of Business Management
3	Informant C	Staff HSE	5 years	Bachelor of Environmental Engineering
4	Informant D	Staff HSE Plantation	8 years	Bachelor of Public Administration
5	Informant E	Staff HSE Mill	3 years	Bachelor of Public Health

3.5.2 Observations

Direct observations were conducted to understand the actual conditions of domestic waste generation, handling, and disposal within PT BDK's estate-based housing area. This approach was crucial for documenting daily operating reality that might not show up in official documents or explanations from interviews. Household garbage generating patterns, the existence and state of waste containers, the transfer of waste from homes to temporary collection locations, and the state of the transportation routes utilized for waste movement were among the major areas of observation.

Additionally, the researcher observed how housekeeping staff handled garbage, including the regularity and scheduling of waste collection, the methods used for aggregation, and the accessibility of tools and equipment such as carts, storage containers, and segregation facilities. In order to evaluate the level of unmanaged trash, environmental cleanliness, and probable non-conformities with the objectives outlined in the 2025 PROPER framework, site conditions surrounding the residential area were documented.

To guarantee a thorough grasp of operating variances, observations were made on multiple days and at various times. In order to enable data triangulation with interview and document analysis findings, field notes and photographic documentation were methodically recorded. The information gathered from observations was crucial in locating operational bottlenecks, verifying institutional deficiencies, and guiding the development of the suggested integrated home waste management system.

3.5.3 Document Analysis

In order to provide official, verifiable records of the mill's waste management operations, document analysis was done in addition to the interview and observation data. This method involved reviewing internal documents such as Standard Operating Procedures on domestic waste handling, organizational charts, job descriptions relevant to waste-related responsibilities, HSE monitoring reports, internal audit findings, waste transport logs, contractor agreements, and historical PROPER evaluation records. External documents, including relevant national regulations, regional waste management policies, and corporate sustainability

guidelines, were also examined to contextualize the mill's practices within broader regulatory and organizational expectations.

The use of document analysis allowed the researcher to cross-check the consistency between formal policies and actual operational practices, identify gaps in compliance, and trace the evolution of waste management procedures over time. These documents provided essential insights into accountability structures, reporting flows, and institutional expectations, thereby strengthening the triangulation and reliability of the findings in this case study.

3.6 Data Analysis Procedures

The data analysis in this study follows an iterative qualitative approach aimed at developing a comprehensive understanding of domestic waste management practices within PT BDK's estate-based housing environment. The analysis combines external environmental assessment and internal organizational evaluation to identify factors influencing the effectiveness of domestic waste management and to support the development of an integrated implementation framework. To determine the external factors impacting the adoption of residential waste management, a PESTLE evaluation is the first step in the investigation. The political, economic, social, technological, legal, and environmental aspects that could influence organizational decision-making, environmental compliance, and sustainability initiatives are examined in this evaluation. Understanding the larger external environment in which PT BDK operates and identifying stakeholder expectations, technical potential, regulatory pressures, and environmental issues pertinent to domestic waste management are the goals of this stage.

The report assesses PT BDK's current household waste management system after the external assessment. To comprehend existing waste management methods, operating procedures, institutional arrangements, and stakeholder involvement, interview transcripts, observation notes, and corporate records are arranged and evaluated methodically. Finding out how domestic trash is produced, separated, collected, transported, monitored, and coordinated within the business's operating environment is the main goal of this stage. After gathering data, the researcher uses thematic analysis to find recurrent themes and problems. Open coding is the first

step in the analytical process, where important statements, observations, and operational problems are found and classified. Axial coding is then used to improve these initial codes in order to create connections between concepts and organize related discoveries into more comprehensive analytical themes.

The theoretical frameworks discussed in Chapter 2 are then used to analyze the themes that have been identified. The efficacy of waste system components, stakeholder involvement, and sustainability factors are evaluated using the Integrated Sustainable Waste Management (ISWM) framework. Institutional preparedness, managerial dedication, internal coordination systems, and resource distribution are all assessed using organizational implementation theory. The District Environmental Agency (DLH) and other external agencies, as well as company departments and residential areas, are examined using the Multi-Stakeholder and Regulatory Coordination theory. Workflow and Operational Planning Scheduling systems, resource utilization, operational processes, monitoring methods, and workflow efficiency are all assessed using integration ideas. A gap and readiness evaluation is then used to synthesize the results of these analyses. In addition to assessing the organization's preparedness to put suggested changes into action, this step finds differences between current procedures and the specifications of an integrated domestic waste management system. Throughout the analysis, operational flaws, institutional limitations, coordination difficulties, and regulatory compliance issues are given special focus.

Data triangulation is used to compare information from observations, interviews, and document analysis in order to increase the findings' trustworthiness. This procedure lowers the possibility of biased interpretation and helps guarantee consistency across various sources of data. Analytical memos are kept throughout the analysis to record new discoveries, aid in interpretation, and provide a clear connection between theoretical ideas and empirical results. Creating an Integrated Domestic Waste Management Framework specific to PT BDK's operational context is the last phase of the investigation. The PROPER 2025 Environmental Performance Framework's requirements are met by the framework, which was created based on the findings of both internal and external examinations. The suggested framework seeks to develop corporate sustainability practices, promote

better environmental compliance, and improve the efficiency of household waste management in the company's estate-based housing setting.

3.7 Analytical Framework

The analytical framework used in this study is based on the conceptual model developed in Chapter 2 and is designed to examine both the external and internal factors influencing domestic waste management within PT BDK's estate-based housing environment. In order to determine the macroenvironmental factors influencing the implementation of residential waste management, the investigation starts with a PESTLE assessment. The political, economic, social, technological, legal, and environmental aspects that could present opportunities, limitations, and compliance demands impacting the business's waste management procedures are examined in this evaluation. The study uses the Integrated Environmental Governance System (IEGS) as the main analytical lens to assess PT BDK's current domestic waste management system after the external assessment. Examined as an integrated governance issue, domestic waste management involves stakeholder interactions, institutional arrangements, operational procedures, and regulatory compliance needs.

The study uses four complimentary analytical perspectives—Integrated Sustainable Waste Management (ISWM), Organizational Implementation, Multi-Stakeholder and Regulatory Coordination, and Operational Planning and Workflow Integration—to provide a thorough review. These frameworks are used to analyze present procedures, find operational and institutional gaps, gauge organizational preparedness, and identify the causes of the company's domestic waste management issues. The findings from these analyses are subsequently synthesized through a gap and readiness assessment to identify improvement opportunities and implementation requirements. The final stage of the analysis involves developing an Integrated Domestic Waste Management Framework that aligns with PT BDK's operational context and supports compliance with the PROPER 2025 Environmental Performance Framework while contributing to sustainable operational performance.

3.8 Validity and Reliability

Ensuring the credibility and trustworthiness of the research findings is essential in qualitative case study research. This study applies several strategies to strengthen validity and reliability throughout the research process. Data triangulation, which compares information from interviews, field observations, and corporate papers to find recurring patterns and lower the possibility of biased interpretation, is one method used to address validity. This method guarantees that conclusions are based on several sources rather than just one.

Maintaining an open and transparent documentation approach strengthens reliability. To allow for traceability, every stage of data collection—including interview techniques, observation notes, and document review procedures—is methodically documented. Consistency in the data collected from various respondents is further encouraged by the use of a predetermined interview guide. Additionally, in order to guarantee that themes emerge from the data rather than from researcher preconceptions, coding processes for data analysis are implemented consistently.

To further enhance credibility, the study incorporates member checking by validating key interpretations with selected participants who were directly involved in waste management activities at PT BDK. This process helps ensure that the findings accurately reflect actual conditions and operational realities. Taken together, these strategies contribute to producing research results that are robust, credible, and dependable.

3.9 Ethical Considerations

This study was conducted in accordance with the ethical research guidelines of the university. A Thesis Information Sheet outlining the study's objectives, the extent of participation, the interview procedure, and participants' rights—including the ability to decline or withdraw at any time—was given to each informant prior to the interviews. In order to formally affirm their voluntary participation, informants who consented to participate had to fill out and sign the university's official Thesis Consent Form.

Anonymity is preserved throughout this thesis, even though the real names of the informants were noted on the consent forms for administrative and ethical reasons. To maintain confidentiality, coded identifiers like Informant A, Informant B, and Informant C are used to refer to each participant. The information gathered was managed in a way that safeguarded the organization's and individuals' privacy and was only utilized for academic reasons.

3.10 Summary of Methodology

The methodological strategy used in this investigation has been described in this chapter. With an emphasis on organizational procedures, regulatory alignment, and operational practices pertinent to the PROPER 2025 framework, the study uses a qualitative case study design to investigate PT BDK's household waste management system. The distinctive features of the company's estate-based living environment and the institutional, operational, and legal difficulties of handling household garbage in a remote plantation setting established the case study context.

The unit of analysis for the study is the company's domestic waste management system, including its governance structures, operational arrangements, and inter-agency coordination mechanisms. Semi-structured interviews with important organizational actors, direct field observations in residential and operating regions, and examination of internal papers and legal rules were all used to gather data. These various data sources made it possible to conduct a thorough triangulation procedure that increased the findings' depth and believability.

Based on the analytical framework outlined in Chapter 2, the data analysis process was thematic and included coding, category creation, and pattern recognition. The interpretation of empirical results was driven by the conceptual model, which incorporates environmental governance, institutional implementation, ISWM principles, operational planning, and PROPER regulatory criteria. The chapter also described the steps used to guarantee research ethics, validity, and reliability. These included adhering to responsible research techniques in an operational industrial setting, handling participant information in a confidential manner, triangulation, and clear documentation procedures. Overall, the methodological structure presented in this chapter provides a rigorous foundation for analyzing the current waste management conditions at PT BDK and for developing recommendations based on systematic, evidence-based inquiry.

CHAPTER IV

RESULTS AND DISCUSSION

The implementation of the PROPER 2025 assessment introduced a new challenge for PT Bisma Dharma Kencana (PT BDK) Palm Oil Plantation & Mill, as domestic waste management became one of the key environmental performance indicators evaluated under the updated assessment criteria. Before extending the program throughout its operations region, the corporation started a domestic waste management trial project in a few staff housing areas in response to these regulatory changes. Instead of launching a system across the entire organization right away, management decided to assess operational viability, organizational preparedness, resource needs, and implementation difficulties in stages. Because the pilot project is PT BDK's first strategic attempt to create an integrated residential waste management system, it became the main subject of this study.

Data collection for this study was done in PT Bisma Dharma Kencana Palm Oil Plantation & Mill's operational site in Katingan Regency, Central Kalimantan, as well as the company's head office in Jakarta. Understanding the strategic elements of the pilot project, such as policy creation, organizational coordination, resource planning, and management decision-making, was the main goal of data gathering at the head office. In the meantime, fieldwork was carried out in Katingan from June 22 to July 2, 2026, with the goal of observing the pilot project's operational implementation. This was bolstered by interviews with staff members directly in charge of day-to-day residential waste management tasks and an examination of pertinent corporate documentation.

The company's household waste management procedures were improved in a number of ways by the pilot project that was examined during this study. Household waste segregation facilities, a Temporary Waste Collection Point (TPS), daily waste collection and transportation, regular waste weighing and recording, and HSE Department-coordinated monitoring operations were among these. These projects necessitated cooperation between various organizational departments, proving that the pilot project was an organizational endeavor involving operational planning, cross-functional coordination, and ongoing performance monitoring in

addition to being an environmental compliance program. This study used a triangulation approach, combining data from interviews, direct field observations, corporate documentation, and operational waste generation records to bolster the conclusions' reliability. By combining these various sources of information, the researcher was able to compare management's strategic viewpoints with actual operational implementation, giving a thorough grasp of the implementation process and the difficulties faced during the pilot project.

The findings presented in this chapter are structured according to the four research questions established in Chapter One. The discussion begins by examining the existing domestic waste management practices implemented at PT BDK and identifying the operational practices and shortcomings that contributed to the company's PROPER assessment. The chapter then analyses the external, institutional, and operational factors affecting the effectiveness of the current system, evaluates the organization's readiness to implement an integrated domestic waste management system, and concludes by proposing a strategic framework to strengthen compliance with PROPER 2025 while supporting sustainable operational performance.

4.1 Existing Domestic Waste Management Practices at PT BDK

The findings indicate that PT Bisma Dharma Kencana (PT BDK) has initiated significant improvements in its domestic waste management practices following the introduction of domestic waste management as a separate assessment criterion under the PROPER 2025 program. Prior to the implementation of the pilot project, domestic waste generated within the employee housing area was managed using conventional collection practices with limited waste segregation, documentation, and monitoring. As a result, the existing system was insufficient to fully meet the new regulatory expectations introduced under the updated PROPER assessment.

Recognizing these challenges, PT BDK adopted a pilot project strategy rather than implementing an integrated waste management system across the entire operational area simultaneously. Based on interviews with management, this phased implementation was intended to evaluate operational feasibility, organizational

readiness, resource requirements, and implementation constraints before wider deployment. From a management perspective, the pilot project also reduced implementation risks by allowing the company to evaluate the effectiveness of new operational procedures before expanding the program throughout the plantation housing area.

The pilot project introduced several improvements to the company's domestic waste management system. Management invested in basic operational infrastructure, including household waste segregation bins, a dedicated Temporary Waste Collection Point (TPS), a daily waste collection system, and routine waste weighing and recording. These investments established the operational foundation required to support the implementation of an integrated domestic waste management system while providing management with measurable information for monitoring operational performance.



Figure 3. Household Waste Segregation Facilities



Figure 4. Temporary Waste Collection Point (TPS)



Figure 5. Daily Waste Collection Using Motorcycle-Pulled Waste Cart

Participating families in the pilot project region were given distinct garbage bins for organic, inorganic, and residual waste, according to field observations. Every day, a garbage cart carried by a motorcycle was used by approved people to

collect waste, which was then brought to the TPS for short-term storage. Source segregation not only increased operating efficiency but also made it possible for management to start creating uniform waste handling practices in the pilot project area.

The introduction of a daily trash weighing and recording system was one of the most significant administrative advancements seen during the pilot operation. The pilot project implemented quantitative monitoring via daily recording of organic, inorganic, and residual trash, in contrast to the prior waste management approach that collected waste without systematic assessment. Instead of depending just on eye observation, this monitoring system allowed management to assess implementation progress using operational data. Daily trash generation statistics were also made available, which gave baseline data for program evaluation, future planning, and ongoing development.

Table 4 provides an overview of the statistics on home garbage generation collected throughout the pilot project.

Table 4. Summary of Domestic Waste Generation During the Pilot Project
(May 2026)

Parameter	Value
Observation Period	21 operational days
Total Domestic Waste Generated	1,183 kg
Organic Waste	825 kg (69.7%)
Inorganic Waste	244 kg (20.6%)
Residual Waste	114 kg (9.6%)

Source: PT Bisma Dharma Kencana Palm Oil Plantation & Mill (2026).

The recorded data show the implementation of a quantifiable operational monitoring system rather than concentrating only on waste composition. Management can monitor trash generation patterns, evaluate pilot project effectiveness, and support evidence-based decision-making about future extension of the home waste management program thanks to the availability of quantitative data. Because operational performance can now be assessed using documented

indicators rather than just qualitative observations, this is a significant organizational benefit.

Despite these advancements, the results also show that a number of issues persisted throughout the pilot project's execution. Waste segregation procedures were not yet regularly used by all participating families, according to field observations, suggesting that resident behavior modification remained a major implementation difficulty. Additionally, formal Standard Operating Procedure (SOP) boards had not yet been established in the pilot project region, despite the introduction of operational activities. As a result, direct supervision, regular socialization, and support from the HSE Department were the main sources of operational direction.

The integrated domestic waste management system had not yet been fully implemented throughout all employee housing areas, which is another significant discovery. The implementation was restricted to the pilot project area. The management's goal of assessing organizational preparedness before broader deployment was in line with this staged implementation approach. But it also shows that, at the time of this study, the entire home waste management system had not yet attained complete organizational maturity.

Overall, the results indicate that by implementing a more structured management method through the pilot project, PT BDK has advanced beyond traditional home garbage collection. Management's dedication to enhancing domestic waste management performance is demonstrated by the establishment of operational infrastructure, daily monitoring, trash generation recording, and cross-functional coordination. However, the results also show that more work needs to be done in order to completely comply with the PROPER 2025 standards, especially in strengthening standardized operational procedures, broadening program coverage, boosting community participation, and improving organizational readiness. These results serve as the foundation for the analysis of the variables influencing implementation efficacy, which are covered in the section that follows.

4.2 Factors Affecting the Effectiveness of Domestic Waste Management

This section examines the key factors influencing the effectiveness of domestic waste management at PT Bisma Dharma Kencana (PT BDK). Based on the findings from interviews, field observations, and document analysis, the identified factors are grouped into external, institutional, and operational dimensions. These dimensions are analyzed to explain how regulatory pressures, organizational arrangements, coordination mechanisms, resource availability, and operational practices shape the implementation of domestic waste management within the company. The section concludes with a synthesis of the findings using the PESTLE framework to provide a structured understanding of the broader external environment influencing implementation.

4.2.1 External Factors Influencing the Effectiveness of Domestic Waste Management

External factors emerged as one of the major themes identified through the thematic analysis. These factors explain how changes in the external environment have influenced PT Bisma Dharma Kencana (PT BDK) in strengthening its domestic waste management system. The interview findings reveal that the revision of the PROPER 2025 assessment criteria has become the most significant external driver encouraging the company to improve its environmental management practices. The inclusion of domestic waste as a separate assessment criterion has shifted the company's perspective from viewing domestic waste management as a routine housekeeping activity to recognizing it as a strategic component of environmental performance.

This change was clearly explained by Informant B, who stated:

"Perubahan PROPER 2025 memberikan dampak yang signifikan karena sampah domestik menjadi aspek yang dinilai secara lebih spesifik. Hal ini mendorong perusahaan untuk melihat pengelolaan sampah domestik sebagai isu strategis, bukan hanya kegiatan kebersihan rutin." (The changes introduced under PROPER 2025 have had a significant impact, as domestic waste is now assessed more specifically. This has encouraged the company to view domestic waste management as a strategic issue rather than merely a routine cleaning activity.)

The statement demonstrates that the revised PROPER assessment acted as a catalyst for organizational change. Rather than responding solely to regulatory compliance, management began integrating domestic waste management into broader environmental management initiatives aimed at improving overall organizational performance.

A similar perspective was expressed by Informant C, who explained that the revised assessment criteria also affected operational activities conducted in the field.

"Menurut saya yang paling berpengaruh adalah regulasi dan persyaratan PROPER. Setelah kategori sampah domestik mendapat perhatian lebih besar, perusahaan juga mulai meningkatkan upaya perbaikan di lapangan." (In my view, the most influential factors are the regulations and PROPER requirements. As greater attention has been given to the domestic waste category, the company has also begun to strengthen its improvement efforts in the field.)

This response illustrates that the influence of PROPER 2025 extends beyond strategic management decisions and directly affects day-to-day operational activities. Increased monitoring, documentation, and continuous improvement initiatives were introduced to ensure that operational practices aligned with the revised assessment requirements.

The importance of regulatory compliance was further confirmed by Informant E, who emphasized:

"Menurut saya yang paling terasa adalah tuntutan kepatuhan terhadap regulasi dan penilaian PROPER." (In my view, the most significant factor is the pressure to comply with regulatory requirements and the PROPER assessment.)

The consistency of responses among Informants B, C, and E strengthens the credibility of this finding through data triangulation. Although each informant represents a different organizational level, all consistently identified regulatory change as the primary external factor influencing the implementation of domestic waste management at PT BDK.

Beyond regulatory requirements, the interviews also indicate that increasing stakeholder expectations have encouraged the company to improve its environmental performance. Environmental compliance is no longer perceived merely as an administrative obligation but has become an important indicator of corporate responsibility and sustainable business operations. Consequently, management has placed greater emphasis on developing a domestic waste management system capable of meeting both regulatory expectations and broader sustainability objectives.

The interview findings are further supported by the field observations presented in Section 4.2, which demonstrate that PT BDK has translated these external pressures into practical operational improvements through the implementation of a domestic waste management pilot project. These observations reinforce the argument that regulatory changes have stimulated tangible organizational actions rather than remaining solely at the policy level.

(Wilson, et al., 2015) proposed that the successful implementation of Integrated Sustainable Waste Management (ISWM) depends on the integration of technical systems, institutional arrangements, and stakeholder participation. Similarly, (Rodić & Wilson, 2017) argued that governance and institutional capacity are more critical than technological advancement in determining the effectiveness of waste management systems in developing countries. In addition, (Hemidat, et al., 2022) emphasized that effective waste management requires strong alignment between environmental policies, stakeholder collaboration, and operational systems. The findings of the present study are consistent with these previous studies, as the implementation of PROPER 2025 became the primary external driver encouraging PT BDK to strengthen its domestic waste management system through improved governance, operational adjustments, and stronger collaboration among relevant stakeholders.

However, this study also identifies several findings that were not explicitly highlighted in the previous studies. While (Wilson, et al., 2015) focused on the integration of technical, institutional, and stakeholder dimensions, the findings from PT BDK demonstrate that successful implementation also depends on continuous

monitoring, systematic documentation, and phased implementation through a pilot project before full-scale deployment. Likewise, although (Rodić & Wilson, 2017) emphasized governance and institutional capacity, this study further reveals that cross-functional coordination among HSE, HRD, Estate, operational units, and top management became a key organizational mechanism for translating regulatory requirements into operational practices. Furthermore, (Hemidat, et al., 2022) discussed the importance of policy alignment and stakeholder collaboration but did not specifically address how regulatory changes could trigger broader organizational transformation within a corporate-managed plantation housing environment.

These findings suggest that the implementation of domestic waste management in PT BDK extends the conclusions of previous studies by demonstrating that regulatory pressure under the PROPER 2025 framework functions not only as a compliance requirement but also as a strategic driver of organizational transformation. Beyond improving environmental compliance, regulatory changes encouraged stronger leadership commitment, enhanced cross-functional governance, continuous monitoring and documentation, and staged implementation through pilot projects. These findings provide additional empirical evidence on how integrated domestic waste management can be effectively implemented within a corporate-managed plantation housing environment.

Overall, the interview findings consistently demonstrate that regulatory changes under the PROPER 2025 framework have become the principal external driver motivating PT BDK to strengthen its domestic waste management practices. These findings not only support the Political and Legal dimensions of the PESTLE framework discussed in Chapter II but also confirm the findings of (Wilson, et al., 2015), (Rodić & Wilson, 2017), and (Hemidat, et al., 2022) regarding the importance of governance, institutional capacity, and policy alignment in waste management implementation. Furthermore, this study extends previous empirical evidence by demonstrating that regulatory changes can stimulate broader organizational transformation through stronger leadership commitment, cross-functional coordination, continuous monitoring, and phased implementation within a corporate-managed plantation housing environment.

4.2.2 Institutional Factors

Institutional factors emerged as the second major theme influencing the effectiveness of domestic waste management implementation at PT Bisma Dharma Kencana (PT BDK). The thematic analysis indicates that the success of the pilot project is not determined solely by regulatory compliance but also by the organization's internal capacity to coordinate resources, define responsibilities, allocate budgets, and establish governance mechanisms that support long-term implementation. The interviews consistently demonstrate that leadership commitment, cross-functional coordination, and organizational governance are essential elements in ensuring that the domestic waste management system operates effectively.

One of the most significant institutional findings concerns management commitment toward improving domestic waste management. Informant A explained that the implementation of the pilot project reflects management's intention to gradually build an integrated system rather than introducing large-scale changes simultaneously.

"Program ini dirancang sebagai pilot project agar perusahaan dapat mengevaluasi efektivitas sistem sebelum diterapkan secara menyeluruh di seluruh area perumahan." (This program was designed as a pilot project to allow the company to evaluate the effectiveness of the system before implementing it across the entire residential area.)

The statement indicates that management deliberately adopted a phased implementation strategy to minimize operational risks while allowing continuous learning throughout the implementation process. Rather than focusing solely on achieving short-term compliance, the company has emphasized organizational learning and continuous improvement as part of its environmental management strategy.

This commitment was further reinforced by Informant B, who stated:

"Komitmen perusahaan sudah ada dan semakin kuat setelah evaluasi PROPER terakhir." (The company's commitment was already in place and has grown stronger following the most recent PROPER evaluation.)

The response demonstrates that management commitment has evolved beyond policy statements into practical organizational actions. The establishment of the pilot project, allocation of supporting facilities, and strengthening of monitoring activities illustrate management's willingness to improve environmental performance through systematic implementation.

Another institutional factor identified during the interviews is cross-functional coordination among departments. The implementation of domestic waste management involves multiple organizational units rather than relying solely on the HSE Department. Informant B explained:

"Pengelolaan sampah domestik merupakan tanggung jawab bersama yang melibatkan beberapa departemen. Departemen HSE berperan sebagai koordinator dalam aspek kepatuhan lingkungan, penyusunan program, monitoring, dan evaluasi. HRD berperan dalam pembinaan penghuni perumahan, sedangkan departemen operasional mendukung pelaksanaan kegiatan di lapangan." (Domestic waste management is a shared responsibility involving several departments. The HSE Department acts as the coordinator for environmental compliance, program development, monitoring, and evaluation. HRD is responsible for engaging and guiding residents in the housing area, while the operational departments support the implementation of activities in the field.)

A similar perspective was expressed by Informant C, who described how operational coordination is carried out during daily implementation.

"Koordinasi cukup baik. Biasanya kami berkoordinasi dengan HRD terkait penghuni perumahan dan dengan bagian operasional terkait pengangkutan maupun kebutuhan fasilitas." (Coordination is generally effective. We usually coordinate with HRD on matters related to residents in the housing area and with the operational departments regarding waste transportation and facility requirements.)

The consistency of responses between Informants B and C demonstrates that effective domestic waste management depends on collaboration across organizational functions. The findings suggest that environmental management should be viewed as an organizational responsibility rather than the sole responsibility of the HSE Department.

The interviews also identified several institutional gaps that require further improvement. One of the most frequently discussed issues concerns the development of operational governance. Informant C explained:

"SOP sudah ada namun belum secara spesifik menggambarkan pengelolaan yang terintegrasi. SOP ke depan perlu memuat pembagian tanggung jawab, pemilahan, pengumpulan, pengangkutan, monitoring, dokumentasi, dan evaluasi secara jelas." (An SOP is already in place; however, it does not yet specifically reflect an integrated management approach. Going forward, the SOP should clearly define responsibilities and cover waste segregation, collection, transportation, monitoring, documentation, and evaluation.)

This finding indicates that although operational activities have already been implemented, institutional standardization remains under development. A more comprehensive SOP would improve role clarity, strengthen accountability, and enhance consistency across different operational areas.

Resource allocation also emerged as an important institutional consideration. Informant C explained that financial resources had been allocated; however, infrastructure development was intentionally implemented in phases.

"Budget sudah dianggarkan namun pengadaan fasilitas dilakukan secara bertahap dengan mempertimbangkan prioritas implementasi." (The budget has already been allocated. However, facility procurement is being carried out in stages based on implementation priorities.)

This phased investment strategy reflects management's effort to balance financial efficiency with operational effectiveness. Rather than investing simultaneously across all residential areas, PT BDK prioritized the pilot project to evaluate system performance before expanding implementation company-wide.

The interviews further revealed that monitoring activities have already been implemented; however, the company has not yet established formal Key Performance Indicators (KPIs) specifically for domestic waste management. According to Informant C:

"Saat ini evaluasi masih mengacu pada PROPER dan monitoring rutin, namun belum terdapat KPI formal yang secara khusus mengukur keberhasilan pengelolaan sampah domestik." (Currently, evaluation is still based on PROPER requirements and routine monitoring. However, there are no formal KPIs specifically designed to measure the effectiveness of domestic waste management.)

The absence of formal performance indicators suggests that organizational evaluation remains primarily compliance-oriented. Developing measurable KPIs would enable management to monitor implementation effectiveness more systematically and support evidence-based decision-making.

(Nasution, Wulandari, Wahono, & Samsul, 2025) reported that ineffective waste management implementation is often associated with weak institutional coordination and the absence of practical implementation mechanisms. Similarly, (Rodić & Wilson, 2017) emphasized that governance capacity, stakeholder coordination, and institutional arrangements are fundamental elements for achieving sustainable waste management systems. (Hemidat, et al., 2022) further argued that successful integrated waste management depends on the alignment between organizational policies, stakeholder collaboration, and operational implementation. The findings of the present study are consistent with these previous studies, as institutional effectiveness at PT BDK was strongly influenced by leadership commitment, cross-functional coordination, governance mechanisms, and organizational support throughout the implementation of the domestic waste management pilot project.

However, this study also identifies several institutional characteristics that extend previous empirical findings. While (Nasution, Wulandari, Wahono, & Samsul, 2025) primarily discussed institutional weaknesses from the perspective of policy implementation, the findings from PT BDK demonstrate how institutional commitment can be translated into practical organizational actions through phased

implementation strategies, continuous organizational learning, and structured resource allocation. Likewise, although (Rodić & Wilson, 2017) highlighted governance as a critical component of sustainable waste management, this study reveals that governance within a corporate-managed plantation environment relies heavily on cross-functional collaboration among HSE, HRD, Estate, operational departments, and top management. Furthermore, the findings indicate that the development of integrated SOPs, formal performance indicators, and systematic monitoring remains an ongoing organizational process rather than a one-time implementation activity.

These findings suggest that institutional effectiveness in domestic waste management extends beyond formal organizational structures and regulatory compliance. In the context of PT BDK, successful implementation is supported by leadership commitment, phased investment, organizational learning, cross-functional governance, and continuous improvement mechanisms that evolve throughout the implementation process. This study therefore extends previous empirical studies by demonstrating that sustainable domestic waste management within corporate-managed plantation housing requires dynamic organizational capabilities that continuously adapt to regulatory requirements and operational experience.

Overall, the interview findings consistently indicate that institutional effectiveness is influenced by the interaction between leadership commitment, organizational coordination, governance mechanisms, resource allocation, and performance monitoring. These findings not only support the organizational implementation perspective discussed in Chapter II but also confirm the empirical findings of (Nasution, Wulandari, Wahono, & Samsul, 2025), (Rodić & Wilson, 2017), and (Hemidat, et al., 2022), which emphasize the importance of governance, institutional capacity, and stakeholder coordination in successful waste management implementation. Furthermore, this study extends previous empirical evidence by demonstrating that institutional effectiveness within a corporate-managed plantation housing environment is strengthened through phased implementation, cross-functional governance, continuous organizational learning, and the gradual development of integrated management systems. Therefore,

strengthening these institutional dimensions will be essential for PT BDK to sustain its domestic waste management system and achieve long-term compliance with the PROPER 2025 requirements.

4.2.3 Operational Factors

Operational factors emerged as the third major theme affecting the effectiveness of domestic waste management implementation at PT Bisma Dharma Kencana (PT BDK). While management commitment and organizational coordination provide the institutional foundation for the program, the interview findings indicate that long-term success ultimately depends on the consistency of day-to-day operational practices. The thematic analysis reveals that resident participation, operational discipline, monitoring activities, and the adequacy of supporting facilities collectively determine whether the domestic waste management system can function effectively.

One of the most significant operational challenges identified during the interviews relates to household participation in waste segregation. Although segregated waste bins have been introduced within the pilot project area, several informants explained that residents have not yet consistently adopted the expected waste separation practices. Informant C stated:

"Menurut saya faktor utama adalah kebiasaan penghuni. Saat inspeksi lapangan masih sering ditemukan sampah yang tidak dipilah sesuai kategori. Selain itu fasilitas pemilahan dipenuhi secara bertahap. Pemilahan terbagi menjadi tiga kategori, yaitu organik, anorganik, dan residu." (In my view, the main factor is residents' habits. During field inspections, waste is still frequently found to be incorrectly segregated according to the designated categories. In addition, segregation facilities are being provided gradually. Waste segregation is divided into three categories: organic, inorganic, and residual waste.)

Similarly, Informant E explained:

"Yang paling sering saya lihat di lapangan adalah masalah kebiasaan. Masih ada penghuni yang mencampur sampah walaupun tempat sampah terpilah sudah tersedia." (The issue I most frequently observe in the field is related to

residents' habits. Some residents still mix their waste even though segregated waste bins are already available.)

The consistency of responses between Informants C and E demonstrates that behavioural factors remain the primary operational challenge. These findings suggest that improving infrastructure alone is insufficient to ensure effective domestic waste management. Continuous education, routine supervision, and sustained behavioural change are equally important to achieve consistent implementation across all residential areas.

Another operational issue identified through the interviews concerns the adequacy and distribution of supporting facilities. Although the pilot project has introduced waste bins, collection equipment, and routine transportation activities, implementation remains concentrated within selected locations. Informant E explained:

"Di beberapa lokasi sudah cukup baik, tetapi masih ada area yang memerlukan tambahan fasilitas agar pelaksanaan program lebih merata." (Conditions are already adequate in several locations; however, some areas still require additional facilities to ensure more consistent implementation of the program across the residential area.)

This observation was also confirmed by Informant C, who stated:

"Sebagian sudah tersedia, terutama di area pilot project. Namun jika program ingin diterapkan ke seluruh perumahan, jumlah fasilitas yang ada saat ini masih perlu ditambah." (Some facilities are already available, particularly in the pilot project area. However, if the program is to be implemented across the entire residential area, additional facilities will still be required.)

These findings indicate that PT BDK has intentionally adopted a phased operational approach, prioritizing selected pilot locations before expanding infrastructure across the entire employee housing area. This strategy allows management to evaluate operational effectiveness while optimizing resource utilization during the implementation process.

The interviews further highlight the importance of monitoring and operational control in maintaining program effectiveness. Informant D explained that monitoring activities are conducted routinely through field inspections, daily observations, and evaluation of waste management practices. According to Informant D:

"Monitoring dilakukan secara rutin melalui inspeksi lapangan, evaluasi hasil pemilahan, serta pencatatan kegiatan pengelolaan sampah untuk memastikan program berjalan sesuai dengan yang direncanakan." (Monitoring is conducted routinely through field inspections, evaluation of waste segregation results, and documentation of waste management activities to ensure that the program is implemented as planned.)

This finding is supported by Informant E, who emphasized:

"Setelah adanya perhatian yang lebih besar terhadap sampah domestik, kegiatan monitoring menjadi lebih rutin dan dokumentasi juga lebih diperhatikan." (Following the increased attention given to domestic waste management, monitoring activities have become more routine, and greater attention has also been given to documentation.)

The consistency of these responses indicates that routine monitoring has become an integral component of the pilot project. Rather than functioning solely as a compliance activity, monitoring enables management to identify operational problems, evaluate implementation progress, and initiate corrective actions when necessary.

The interviews also demonstrate that operational sustainability depends on continuous improvement. Informant E recommended that the current pilot project should gradually be expanded while maintaining strong monitoring and community engagement.

"Program yang sudah berjalan perlu diperluas secara bertahap ke seluruh area perumahan dan disertai monitoring yang konsisten agar hasilnya berkelanjutan." (The existing program should be gradually expanded across the

entire residential area and supported by consistent monitoring to ensure sustainable outcomes.)

(Wilson, et al., 2015) proposed that effective Integrated Sustainable Waste Management (ISWM) requires the integration of technical waste management processes with active stakeholder participation and continuous operational control. Similarly, (Maalouf and Agamuthu, 2023) highlighted that operational challenges in waste management are commonly associated with inconsistent waste collection systems, limited infrastructure, and weak governance. Furthermore, (Hemidat, et al., 2022) emphasized that operational effectiveness depends on the alignment between waste segregation, collection, stakeholder participation, and continuous monitoring, while (Istiyani & Handayani, 2022) demonstrated that sustainable waste management can be strengthened through active community participation supported by appropriate governance mechanisms. The findings of the present study are consistent with these previous studies, as PT BDK has implemented waste segregation, routine collection, monitoring activities, and gradual infrastructure development as key components of its domestic waste management system.

However, this study also identifies several operational characteristics that extend previous empirical findings. While (Wilson, et al., 2015) primarily described the technical dimensions of integrated waste management, the findings from PT BDK demonstrate that long-term operational effectiveness depends not only on technical implementation but also on sustained behavioural change among residents, continuous monitoring, and phased infrastructure expansion through a pilot project. Likewise, although (Maalouf and Agamuthu, 2023) emphasized infrastructure limitations as a major operational challenge, this study found that resident participation and behavioural consistency were more influential than infrastructure availability during the early implementation stage. In addition, (Istiyani & Handayani, 2022) discussed community participation within community-based waste management systems, whereas this study demonstrates how behavioural engagement can be facilitated through a corporate-managed operational system supported by routine supervision and organizational coordination.

These findings suggest that operational effectiveness should be viewed as a dynamic process that combines technical implementation, behavioural change, monitoring, and continuous improvement rather than relying solely on infrastructure development. In the context of PT BDK, the pilot project has enabled management to evaluate operational performance, strengthen resident participation, and gradually improve supporting facilities before expanding implementation across the entire residential area. This study therefore extends previous empirical studies by demonstrating that sustainable operational implementation within corporate-managed plantation housing requires continuous organizational support, adaptive operational management, and long-term behavioural engagement in addition to conventional technical waste management practices.

Overall, the interview findings indicate that operational effectiveness depends on the successful integration of resident participation, supporting infrastructure, routine monitoring, and continuous operational improvement. These findings not only support the Integrated Sustainable Waste Management (ISWM) framework discussed in Chapter II but also confirm the empirical findings of (Wilson, et al., 2015), (Maalouf and Agamuthu, 2023), (Hemidat, et al., 2022), and (Istiyani & Handayani, 2022), which emphasize the importance of integrating technical systems, stakeholder participation, governance, and operational control in achieving sustainable waste management. Furthermore, this study extends previous empirical evidence by demonstrating that operational success within a corporate-managed plantation housing environment is strongly influenced by continuous behavioural change, phased implementation, and routine monitoring throughout the implementation process. Therefore, strengthening these operational dimensions will be essential to ensure that PT BDK can maintain consistent implementation while progressively expanding the domestic waste management system beyond the pilot project area.

4.2.4 Synthesis of PESTLE Analysis

To obtain a comprehensive understanding of the factors influencing the implementation of domestic waste management at PT Bisma Dharma Kencana (PT BDK), the findings presented in Sections 4.2.1 to 4.2.3 were synthesized using the PESTLE framework introduced in Chapter II. Rather than functioning as a separate

analytical tool, the PESTLE framework provides a structured perspective for interpreting the external environment influencing the organization's domestic waste management strategy. The synthesis demonstrates that political, economic, social, technological, legal, and environmental factors collectively shape PT BDK's organizational response toward achieving compliance with the PROPER 2025 requirements.

Table 5. Synthesis of PESTLE Analysis

PESTLE Dimension	Key Findings from the Study	Organizational Implication
Political	The revision of the PROPER 2025 assessment criteria increased management attention toward domestic waste management.	Regulatory changes became the primary driver encouraging organizational change and strategic commitment.
Economic	Infrastructure development and facility procurement were implemented gradually through a pilot project approach.	Phased investment enables efficient resource allocation while reducing implementation risk.
Social	Resident participation and behavioural consistency remain the primary operational challenges despite the availability of waste segregation facilities.	Continuous awareness programs and stakeholder engagement are essential for long-term implementation success.
Technological	Daily waste weighing, operational documentation, and routine monitoring have been introduced to support implementation.	Monitoring systems improve operational control and provide evidence for performance evaluation and decision-making.

PESTLE Dimension	Key Findings from the Study	Organizational Implication
Legal	Compliance with environmental regulations and PROPER requirements has become a major organizational priority.	Regulatory compliance influences governance mechanisms, organizational coordination, and environmental management strategies.
Environmental	The integrated domestic waste management program supports improved environmental performance through systematic waste segregation, collection, transportation, and monitoring.	Strengthening environmental management contributes to sustainable operational performance and supports future PROPER achievement.

The PESTLE synthesis demonstrates that the implementation of domestic waste management at PT BDK is influenced by a combination of external pressures and internal organizational responses. After the new PROPER 2025 evaluation framework was introduced, political and legal factors became the main external drivers. Simultaneously, social concerns emphasized the significance of bolstering staff and resident participation to achieve durable behavioral change, while economic considerations pushed the organization to pursue a phased implementation method.

The synthesis also shows that the organization's capacity to assess operational performance has been improved by technology advancements, such as routine waste weighing, documenting, and monitoring. Instead of serving only as compliance measures, these technology advancements promote evidence-based decision-making and ongoing improvement. Additionally, the household waste management program's ultimate goal is still environmental concerns, which reflects

PT BDK's dedication to enhancing environmental performance while promoting sustainable operational practices.

Overall, the PESTLE synthesis shows that in order to successfully deploy an integrated domestic waste management system, PT BDK must simultaneously develop its internal organizational skills and strategically respond to changes in its external environment. These findings are consistent with the previous studies of (Wilson, et al., 2015), (Rodić & Wilson, 2017), and (Hemidat, et al., 2022). They highlight the necessity of integrating governance, stakeholder participation, operational systems, and institutional capability for the successful implementation of waste management. However, this study also shows that, rather than operating as distinct dimensions, internal organizational capabilities and external regulatory pressures interact dynamically throughout the implementation process inside a corporate-managed plantation housing setting. By offering a more thorough grasp of the use of residential waste management within industrial plantation operations, this integrated viewpoint expands on earlier empirical research. These results serve as the basis for assessing the organization's preparedness, which is covered in the section that follows.

4.3 Organizational Readiness for Implementing an Integrated Domestic Waste Management System

This section discusses the organizational readiness of PT Bisma Dharma Kencana (PT BDK) to implement an integrated domestic waste management system. This section assesses the organization's overall readiness to maintain and grow the household waste management program beyond the current pilot project, in contrast to the preceding section that looked at the external, institutional, and operational elements influencing implementation efficacy. Five organizational dimensions—leadership commitment, infrastructure readiness, human resource readiness, governance readiness, and monitoring capability—that were found through the thematic analysis form the basis of the analysis.

The results of the interviews show that PT BDK has built a solid organizational framework for putting in place an integrated household waste management system. By starting a pilot project, progressively allocating resources,

enhancing cross-departmental coordination, and incorporating domestic waste management into the company's environmental improvement agenda after the PROPER 2025 assessment criteria were revised, management has shown its dedication. However, the results also indicate that before full-scale adoption can be accomplished throughout all employee housing regions, a number of organizational capacities need to be strengthened further.

4.3.1 Leadership Commitment

The study found that the biggest aspect of organizational preparation was leadership commitment. The thematic analysis demonstrates that PT Bisma Dharma Kencana (PT BDK) has recognized domestic waste management not merely as an environmental compliance obligation but as a strategic organizational initiative requiring long-term commitment. Rather than implementing corrective actions solely to respond to the PROPER 2025 assessment, management adopted a gradual implementation approach through a pilot project to evaluate operational effectiveness before expanding the program throughout the employee housing area.

Informant A explained that the pilot project was intentionally designed as an initial learning stage before full implementation.

"Program ini dirancang sebagai pilot project agar perusahaan dapat mengevaluasi efektivitas sistem terlebih dahulu sebelum diterapkan secara menyeluruh di seluruh area perumahan." (This program was designed as a pilot project to allow the company to first evaluate the effectiveness of the system before implementing it across the entire residential area.)

This statement demonstrates that management has adopted a strategic implementation approach by emphasizing evaluation and continuous improvement rather than pursuing immediate large-scale implementation. Such an approach reflects organizational maturity, as decisions are based on operational learning and risk management instead of short-term compliance objectives.

A similar perspective was expressed by Informant B, who stated:

"Komitmen perusahaan sudah ada dan semakin kuat setelah evaluasi PROPER terakhir." (The company's commitment was already in place and has grown stronger following the most recent PROPER evaluation.)

The interview suggests that the revision of the PROPER assessment framework has strengthened leadership awareness regarding the importance of domestic waste management. Rather than treating the revised assessment as an external obligation, management responded by integrating domestic waste management into the company's broader environmental improvement strategy.

Leadership commitment is also reflected in the allocation of organizational resources and the establishment of cross-functional collaboration. Informant B further explained:

"Pengelolaan sampah domestik merupakan tanggung jawab bersama yang melibatkan beberapa departemen. HSE bertanggung jawab pada aspek kepatuhan lingkungan, HRD melakukan pembinaan kepada penghuni, sedangkan operasional mendukung pelaksanaan kegiatan di lapangan." (Domestic waste management is a shared responsibility involving several departments. HSE is responsible for environmental compliance, HRD provides guidance to residents, while the operational departments support the implementation of activities in the field.)

The interview illustrates that management has established clear organizational roles to support program implementation. Instead of assigning responsibility to a single department, PT BDK has adopted a collaborative governance approach involving multiple functional units. This arrangement demonstrates leadership's commitment to integrating domestic waste management into the organization's routine operations.

The management commitment identified at the strategic level was also recognized by operational personnel. Informant E confirmed:

"Ya, dukungan perusahaan cukup baik. Saat ada kebutuhan fasilitas atau kegiatan sosialisasi biasanya mendapat dukungan dari manajemen." (Yes, the company provides adequate support. When facilities are needed or awareness activities are conducted, management generally provides the necessary support.)

The consistency of responses from Informants A, B, and E strengthens the credibility of this finding through data triangulation. Although each informant occupies a different organizational level, they consistently perceived that management actively supports the implementation of the domestic waste management program through strategic direction, resource allocation, and organizational coordination.

Overall, the interviews demonstrate that leadership commitment constitutes one of PT BDK's strongest organizational capabilities in preparing for the implementation of an integrated domestic waste management system. This finding is consistent with organizational implementation theory discussed in Chapter II, which emphasizes that successful organizational change requires visible leadership commitment, strategic direction, and continuous managerial support. Therefore, leadership commitment provides a solid foundation for PT BDK to expand the current pilot project into a fully integrated domestic waste management system capable of meeting the PROPER 2025 requirements while supporting sustainable operational performance.

4.3.2 Human Resource Readiness

Human resource readiness represents another important dimension of organizational readiness for implementing an integrated domestic waste management system. The thematic analysis indicates that PT Bisma Dharma Kencana (PT BDK) possesses sufficient human resources to support the implementation of the current pilot project. However, the effectiveness of the program depends not only on the availability of personnel but also on the capability of employees and residents to consistently perform their respective roles within the waste management system.

Informant B explained that the existing human resources are generally capable of supporting program implementation. Nevertheless, continuous capacity building remains necessary, particularly in improving public awareness and ensuring consistent implementation across different operational areas.

"Secara umum SDM yang ada sudah cukup siap. Namun peningkatan pemahaman dan sosialisasi tetap diperlukan agar seluruh pihak memiliki persepsi

dan cara kerja yang sama." (Overall, the existing human resources are adequately prepared. However, further awareness-building and communication are still needed to ensure that all parties share a common understanding and consistent working practices.)

The statement suggests that organizational readiness extends beyond workforce availability and includes the development of knowledge, awareness, and shared understanding among all stakeholders involved in domestic waste management. Consequently, human resource development should be viewed as an ongoing organizational process rather than a one-time preparation activity.

A similar perspective was expressed by Informant C , who highlighted that technical personnel are prepared to perform operational activities, while behavioural adaptation among residents remains a major challenge.

"Secara umum cukup siap, tetapi masih diperlukan pelatihan dan sosialisasi, terutama bagi penghuni perumahan. Untuk petugas yang terlibat langsung juga perlu pemahaman yang sama agar pelaksanaannya konsisten." (Overall, the existing human resources are adequately prepared; however, further training and awareness activities are still needed, particularly for residents in the housing area. Personnel directly involved in the program also need a shared understanding to ensure consistent implementation.)

This finding demonstrates that organizational readiness involves two complementary dimensions. The first concerns the readiness of operational personnel responsible for implementing the waste management system, while the second relates to the preparedness of residents as the primary waste generators. Since domestic waste management begins at the household level, the participation of residents is essential for ensuring effective waste segregation and collection.

The operational perspective was further confirmed by Informant E , who stated:

"Secara umum cukup siap, tetapi penghuni perumahan masih perlu terus diberikan pemahaman mengenai pentingnya pemilahan sampah." (Overall, the organization is adequately prepared. However, residents in the housing area still

require continued awareness-building regarding the importance of waste segregation.)

The consistency of responses among Informants B, C, and E strengthens the credibility of this finding through data triangulation. While all informants agreed that the company possesses adequate personnel to operate the system, they consistently emphasized that continuous education and behavioural development remain necessary to improve participation among employees and residents.

The results also show that PT BDK has started enhancing organizational capabilities through socialization exercises and awareness campaigns that go along with the pilot project. Management understands that sustainable home waste management necessitates behavioral change backed by ongoing communication and organizational learning rather than depending just on technical advancements.

According to the interviews, PT BDK exhibits a moderate to high degree of human resource preparedness for putting in place an integrated domestic waste management system. Strengthening employee competency, resident participation, and ongoing awareness initiatives will be crucial to supporting the program's successful growth beyond the current pilot project, even though qualified staff are available to oversee day-to-day operations. These results align with the organizational capability theory covered in Chapter II, which highlights the importance of ongoing stakeholder involvement, organizational learning, and human resource development for sustained organizational performance.

4.3.3 Infrastructure Readiness

Another crucial aspect of PT Bisma Dharma Kencana's (PT BDK) organizational readiness to put in place an integrated domestic waste management system is infrastructure readiness. The results of the interviews show that the company has set up the necessary physical infrastructure, such as transportation facilities, daily trash collection equipment, segregated waste containers, and waste monitoring operations, to support the pilot project. Nevertheless, the theme analysis also shows that the current infrastructure is only sufficient for the pilot project at this time and will need to be expanded before the system can be fully adopted throughout all employee housing areas.

According to Informant C, the business has progressively supplied the facilities required to facilitate the pilot project's execution.

"Sebagian fasilitas sudah tersedia, terutama di area pilot project. Namun jika program ingin diterapkan ke seluruh perumahan, jumlah fasilitas yang ada saat ini masih perlu ditambah. Pengadaan sarana dan prasarana dilakukan secara bertahap." (Some facilities are already available, particularly in the pilot project area. However, if the program is to be implemented across the entire residential area, additional facilities will still be required. The necessary facilities and supporting infrastructure are being provided gradually.)

This statement indicates that management has intentionally adopted a phased infrastructure development strategy. Rather than investing in all facilities simultaneously, PT BDK prioritized the pilot project to evaluate operational effectiveness before committing additional resources for wider implementation. Such an approach demonstrates prudent resource management while reducing implementation risks.

The operational perspective was further confirmed by Informant E, who stated:

"Di beberapa lokasi sudah cukup baik, tetapi masih ada area yang memerlukan tambahan fasilitas agar pelaksanaan program lebih merata." (Conditions are already adequate in several locations; however, some areas still require additional facilities to ensure more consistent implementation of the program across the residential area.)

This response demonstrates that although the existing infrastructure has supported the implementation of the pilot project, disparities still exist between different residential areas. Consequently, future expansion of the program will require additional investment to ensure that all employee housing areas receive comparable facilities and operational support.

The findings are also consistent with the field observations presented in Section 4.2, which showed that segregated waste bins had been installed in front of participating houses, daily waste collection was carried out using a motorcycle-

pulled waste cart, and waste weighing and recording activities had already been implemented within the pilot project area. These observations confirm that the essential infrastructure required for the pilot project is already operational. Nevertheless, the observations also indicate that supporting facilities have not yet been distributed uniformly across all residential areas, reflecting the company's phased implementation strategy.

Another important finding concerns the company's approach to infrastructure investment. Rather than viewing infrastructure development as a one-time expenditure, PT BDK considers facility development as part of a continuous organizational improvement process. This strategy enables management to evaluate infrastructure performance, identify operational deficiencies, and prioritize future investments based on actual implementation experience gained during the pilot project.

The consistency of responses between Informants C and E, supported by field observations, strengthens the credibility of this finding through methodological triangulation. Together, these findings demonstrate that PT BDK possesses sufficient infrastructure to support the current implementation stage while recognizing that additional infrastructure development will be required to facilitate organization-wide implementation.

Overall, the study suggests that PT BDK demonstrates a moderate level of infrastructure readiness. The existing facilities provide a solid operational foundation for the pilot project. However, further investment, infrastructure expansion, and standardization will be necessary before the integrated domestic waste management system can be implemented consistently across the entire employee housing area. These findings are consistent with the resource-based perspective discussed in Chapter II, which emphasizes that adequate organizational resources constitute an important capability supporting successful strategy implementation and long-term operational sustainability.

4.3.4 Governance and Coordination Readiness

Governance and coordination readiness represent essential organizational capabilities supporting the successful implementation of an integrated domestic

waste management system. The interview findings demonstrate that PT Bisma Dharma Kencana (PT BDK) has established an organizational structure that clearly defines the roles and responsibilities of the departments involved in domestic waste management. Nevertheless, the study also identifies opportunities to strengthen governance mechanisms, particularly in relation to the development of comprehensive Standard Operating Procedures (SOPs), clearer performance indicators, and more structured coordination processes as the program expands beyond the current pilot project.

Informant B explained that domestic waste management is implemented through collaboration among several departments, with each unit contributing according to its respective responsibilities.

"Pengelolaan sampah domestik merupakan tanggung jawab bersama yang melibatkan beberapa departemen. Departemen HSE berperan sebagai koordinator dalam aspek kepatuhan lingkungan, penyusunan program, monitoring, dan evaluasi. HRD berperan dalam pembinaan penghuni perumahan, sedangkan departemen operasional mendukung pelaksanaan kegiatan di lapangan." (Domestic waste management is a shared responsibility involving several departments. The HSE Department acts as the coordinator for environmental compliance, program development, monitoring, and evaluation. HRD is responsible for providing guidance to residents in the housing area, while the operational departments support the implementation of activities in the field.)

The interview demonstrates that PT BDK has adopted a cross-functional governance approach rather than assigning responsibility to a single department. Such an arrangement facilitates information sharing, collective decision-making, and stronger organizational ownership of the domestic waste management program.

This governance structure was also confirmed by Informant A, who emphasized the importance of communication and coordination among departments throughout the implementation process.

"Keberhasilan program sangat bergantung pada koordinasi antarbagian. HRD berperan dalam membangun kesadaran penghuni, sementara HSE"

memastikan pelaksanaan program sesuai dengan ketentuan lingkungan." (The success of the program largely depends on cross-functional coordination. HRD plays a role in raising residents' awareness, while HSE ensures that the program is implemented in accordance with environmental requirements.)

The statement illustrates that governance readiness is supported by complementary organizational roles rather than isolated departmental responsibilities. The integration of managerial, administrative, and operational functions enables the organization to respond more effectively to environmental management challenges.

From the operational perspective, Informant C highlighted that routine coordination has already become part of program implementation.

"Koordinasi dilakukan secara rutin dengan HRD, bagian operasional, dan pihak terkait lainnya agar pelaksanaan program berjalan sesuai rencana. Jika terdapat kendala di lapangan, segera dilakukan komunikasi untuk mencari solusi." (Coordination is conducted routinely with HRD, the operational departments, and other relevant parties to ensure that the program is implemented as planned. If any issues arise in the field, they are promptly communicated so that appropriate solutions can be identified.)

The consistency of responses among Informants A, B, and C strengthens the credibility of this finding through data triangulation. The interviews repeatedly show that procedures for coordination have been set up and are working well to support the pilot project's daily execution.

Notwithstanding these encouraging results, a number of governance enhancements are still required. According to the interviews, even though operational processes have been put in place, a more thorough governance framework is still needed to enable the program's future growth. Clearer SOPs, explicit performance indicators, and standardized reporting procedures, in particular, would improve organizational responsibility and enable more methodical performance review.

According to these results, PT BDK has attained a moderate to high degree of coordination and governance readiness. Strengthening governance tools will become more crucial as the household waste management system develops from a pilot project into a corporate environmental management program, even if the current governance structure offers a solid organizational base.

The organizational governance approach covered in Chapter II, which highlights the need for well-established coordination systems, clear organizational structures, defined responsibilities, and collaborative decision-making, is supported by this finding. Therefore, to guarantee the long-term viability of PT BDK's integrated household waste management system, enhancing governance competence will be crucial.

4.3.5 Monitoring and Performance Readiness

Because they allow management to assess implementation progress, pinpoint operational problems, and promote continual development, monitoring and performance readiness are essential components of organizational readiness. The thematic analysis indicates that PT Bisma Dharma Kencana (PT BDK) has established a routine monitoring mechanism through daily waste collection records, waste weighing activities, operational observations, and periodic evaluations conducted during the pilot project. These monitoring activities provide management with the information required to assess the effectiveness of the domestic waste management program and support future decision-making.

Informant D explained that routine monitoring has become an integral part of the implementation process.

"Monitoring dilakukan secara rutin melalui inspeksi lapangan, evaluasi hasil pemilahan, serta pencatatan kegiatan pengelolaan sampah untuk memastikan program berjalan sesuai dengan yang direncanakan." (Monitoring is conducted routinely through field inspections, evaluation of waste segregation results, and documentation of waste management activities to ensure that the program is implemented as planned.)

The statement demonstrates that monitoring is not limited to verifying regulatory compliance but also functions as a management tool to evaluate operational performance. Through routine inspections and documentation, management can identify implementation gaps and determine appropriate corrective actions to improve program effectiveness.

A similar perspective was expressed by Informant C, who emphasized the importance of waste weighing and documentation in monitoring program implementation.

"Setiap sampah yang dikumpulkan dilakukan penimbangan dan dicatat sebagai bagian dari monitoring harian sehingga perkembangan program dapat dievaluasi secara berkala." (All collected waste is weighed and recorded as part of daily monitoring, allowing the progress of the program to be evaluated periodically.)

This finding indicates that quantitative operational data have begun to support environmental management decisions. Rather than relying solely on visual observations, PT BDK has incorporated routine waste measurement and documentation into its monitoring process, enabling management to evaluate implementation trends based on operational evidence.

The operational perspective was further confirmed by Informant E, who stated:

"Setelah adanya perhatian yang lebih besar terhadap sampah domestik, kegiatan monitoring menjadi lebih rutin dan dokumentasi juga lebih diperhatikan." (Following the increased attention given to domestic waste management, monitoring activities have become more routine, and greater attention has also been given to documentation.)

The consistency of responses among Informants C, D, and E strengthens the credibility of this finding through data triangulation. The organization's growing commitment to performance evaluation and continuous improvement is reflected in the interviews, which repeatedly show that monitoring efforts have become more methodical since the pilot project was implemented.

The operational records shown in Section 4.2, where daily waste weighing and recording data show that PT BDK has already created a structured monitoring mechanism inside the pilot project, further corroborate the interview findings. The availability of operational data gives managers a crucial starting point for assessing program effectiveness and seeing areas for future development.

Notwithstanding these encouraging advancements, the report nonetheless points out a significant area for development. Despite the regular implementation of periodic monitoring and documentation, operational operations and adherence to PROPER standards continue to be the primary focus of performance evaluation. Formal Key Performance Indicators (KPIs) that measure the efficacy of home trash management have not yet been established by the company. Creating quantifiable performance metrics would improve management's capacity to assess program effectiveness impartially and facilitate evidence-based decision-making for future growth.

All things considered, the results indicate that PT BDK has a high degree of monitoring preparedness, which is reinforced by regular inspections, methodical documentation, and daily operational reporting. However, the organization's preparedness to adopt an integrated household waste management system on a larger organizational scale would be further improved by fortifying the performance management system through the creation of official KPIs and regular performance evaluations. These results corroborate the performance management viewpoint covered in Chapter II, which highlights that organizational learning, objective performance assessment, and ongoing monitoring are essential components for maintaining long-term operational excellence and environmental performance.

Table 6. Organizational Readiness Assessment for Implementing an Integrated Domestic Waste Management System at PT BDK

Organizational Readiness Dimension	Assessment	Key Evidence
Leadership Commitment	Strong	Strong management commitment, pilot project initiated, strategic support from management.
Human Resource	Adequate	Competent personnel are available; continuous awareness and capacity building are still required.
Infrastructure	Developing	Infrastructure is adequate for the pilot project but requires expansion before organization-wide implementation
Governance and Coordination	Adequate	Cross-functional coordination has been established; SOPs and KPIs require further strengthening.
Monitoring and Performance	Strong	Daily monitoring, waste weighing, recording, and routine evaluation have been consistently implemented

The organizational readiness assessment demonstrates that PT Bisma Dharma Kencana (PT BDK) possesses a strong foundation for implementing an integrated domestic waste management system. Leadership commitment and monitoring capability represent the organization's strongest dimensions, reflecting management's commitment to continuous improvement and evidence-based environmental management. Human resource readiness and governance mechanisms are generally adequate to support implementation, although additional efforts are required to strengthen employee awareness, organizational coordination, and performance management. Meanwhile, infrastructure readiness remains at a moderate level, indicating that further investment will be necessary before the system can be expanded beyond the current pilot project.

(Viljoen, Schenck, Volschenk, Blaauw, & Grobler, 2021) reported that organizational readiness for effective waste management implementation depends on the availability of adequate infrastructure, clearly defined organizational roles, and effective coordination among responsible stakeholders. Similarly, (Hemidat, et al., 2022) emphasized that successful integrated waste management requires strong alignment between governance mechanisms, operational systems, and stakeholder collaboration. (Nasution, Wulandari, Wahono, & Samsul, 2025) further identified weak institutional coordination and ineffective implementation mechanisms as major barriers to sustainable waste management implementation. The findings of the present study are generally consistent with these previous studies, demonstrating that leadership commitment, governance readiness, human resource capability, infrastructure availability, and monitoring systems collectively determine PT BDK's organizational readiness to implement an integrated domestic waste management system.

However, this study also reveals several organizational characteristics that extend previous empirical findings. While (Viljoen, Schenck, Volschenk, Blaauw, & Grobler, 2021) primarily emphasized infrastructure, role clarity, and coordination as determinants of successful waste management, the findings from PT BDK indicate that leadership commitment functions as the primary organizational driver that integrates all readiness dimensions. Likewise, although (Hemidat, et al., 2022) highlighted governance alignment and stakeholder collaboration, this study demonstrates that phased implementation through a pilot project, continuous organizational learning, and progressive improvement of monitoring systems are equally important in strengthening organizational readiness. Furthermore, (Nasution, Wulandari, Wahono, & Samsul, 2025) discussed implementation barriers from a policy perspective, whereas this study illustrates how internal organizational capabilities can gradually overcome these challenges through structured implementation and continuous improvement.

These findings suggest that organizational readiness should be viewed as a dynamic organizational capability rather than merely the availability of organizational resources or infrastructure. In the context of PT BDK, organizational readiness evolves through the interaction between leadership commitment,

governance and coordination, human resource development, infrastructure expansion, and continuous monitoring supported by organizational learning. This study therefore extends previous empirical studies by providing a more integrated perspective of organizational readiness for domestic waste management implementation within a corporate-managed plantation housing environment. These findings also provide the organizational foundation for developing the Integrated Domestic Waste Management Implementation Framework presented in the following section.

Overall, the findings suggest that PT BDK demonstrates a moderate to high level of organizational readiness, supported by strong leadership commitment, effective governance and coordination, competent human resources, adequate infrastructure for the pilot project, and systematic monitoring mechanisms. These findings not only support the organizational implementation perspectives discussed in Chapter II but also confirm and extend previous empirical studies by demonstrating that organizational readiness represents a dynamic capability developed through leadership, organizational learning, phased implementation, and continuous improvement. Consequently, PT BDK possesses a solid organizational foundation for developing an integrated domestic waste management framework capable of supporting compliance with the PROPER 2025 requirements while enhancing sustainable operational performance.

4.4 Proposed Integrated Domestic Waste Management Implementation Framework

This study proposes an Integrated Domestic Waste Management Implementation Framework (IDWMIF) as the primary managerial contribution of the research. The framework was developed based on the findings obtained from the thematic analysis, organizational readiness assessment, field observations, and document analysis conducted at PT Bisma Dharma Kencana (PT BDK). Unlike the conceptual framework presented in Chapter II, which illustrates the theoretical relationships among the research variables, the framework presented in this section represents the empirical outcome of the study and serves as a practical guideline for implementing an integrated domestic waste management system.

The development of the framework was motivated by the implementation gaps identified throughout the study. The findings revealed that domestic waste management is influenced not only by operational activities but also by external environmental pressures, organizational readiness, governance mechanisms, and continuous performance improvement. Consequently, the proposed framework integrates these dimensions into a systematic implementation model that enables organizations to strengthen environmental management while supporting compliance with the PROPER 2025 assessment requirements.

As illustrated in Figure 6, the proposed framework consists of five interrelated layers. These levels provide a logical implementation pathway that starts with external environmental forces, moves through operational implementation, organizational preparation, ongoing organizational learning, and the attainment of sustainable organizational objectives. Each layer is integrated and adds to the overall efficacy of the home waste management system rather than operating as separate parts. In order to guarantee that the implementation process is flexible and able to react to modifications in both internal organizational conditions and external regulatory requirements, the framework also includes a continual organizational learning system.

Overall, the suggested framework shows that strategic leadership, organizational capacity, operational discipline, and ongoing performance evaluation must all be integrated for effective residential trash management. Thus, in addition to helping PT BDK improve its household waste management system, the framework is meant to serve as a managerial guide that other plantation businesses or organizations with comparable environmental management issues can use.

The suggested Integrated Domestic Waste Management Implementation Framework is largely in line with earlier empirical research that highlights the significance of incorporating environmental management, operational systems, governance, and stakeholder participation into an all-encompassing waste management strategy. (Wilson, et al., 2015) proposed that Integrated Sustainable Waste Management (ISWM) should combine technical, institutional, and

stakeholder dimensions, while (Rodić & Wilson, 2017) emphasized that effective waste management depends on strong governance structures and institutional capacity. Similarly, (Hemidat, et al., 2022) highlighted that successful waste management implementation requires alignment between environmental policies, stakeholder collaboration, and operational systems. The proposed framework developed in this study supports these previous studies by demonstrating that successful domestic waste management requires the integration of external environmental drivers, organizational readiness, operational implementation, and continuous organizational learning within a single implementation model.

However, this study extends previous empirical studies in several important aspects. While (Wilson, et al., 2015) primarily conceptualized Integrated Sustainable Waste Management (ISWM) through the integration of technical, institutional, and stakeholder dimensions, the proposed Integrated Domestic Waste Management Implementation Framework (IDWMIF) demonstrates that successful implementation within a corporate-managed plantation housing environment follows a sequential implementation pathway. The framework developed in this study explicitly positions external regulatory drivers as the starting point of organizational change, followed by organizational readiness as the enabling capability that translates strategic intentions into operational implementation. Furthermore, unlike previous studies that mainly focus on waste management operations, this framework incorporates continuous organizational learning as a dedicated implementation layer to ensure that monitoring results, operational experience, and performance evaluations are systematically translated into organizational improvement. Finally, the framework explicitly identifies expected organizational outcomes as the ultimate objective of implementation, thereby linking operational waste management practices with environmental compliance, sustainable operational performance, and long-term organizational capability. These additional implementation stages were not explicitly integrated in previous empirical studies and therefore represent the principal theoretical and managerial contribution of this research.

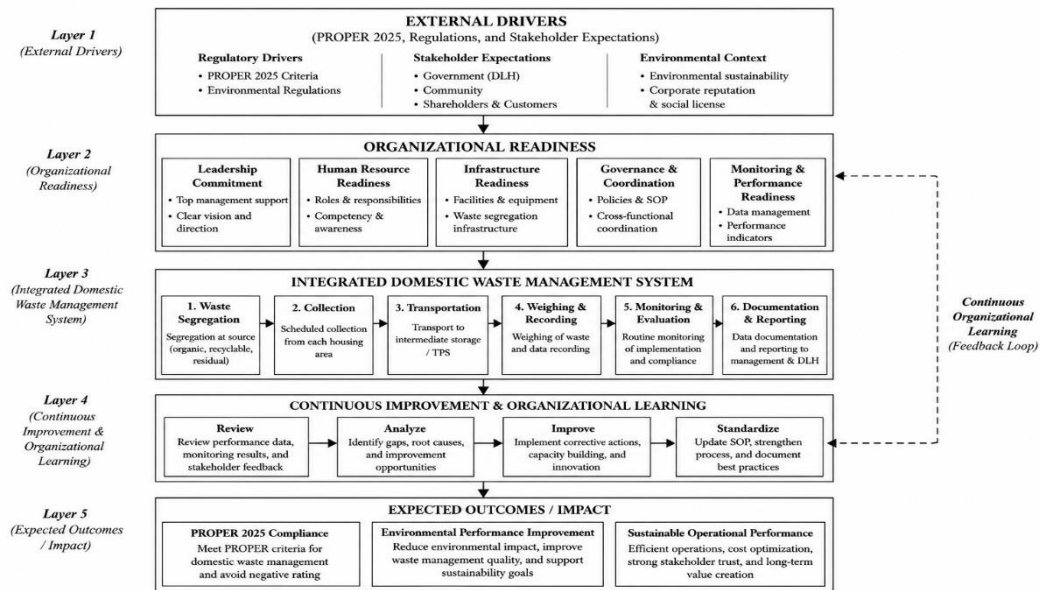


Figure 6. Proposed Integrated Domestic Waste Management Implementation Framework (IDWMIF)

4.4.1 External Drivers

The first layer of the proposed framework represents the External Drivers, which serve as the primary catalyst for organizational change. The findings of this study demonstrate that the implementation of an integrated domestic waste management system at PT Bisma Dharma Kencana (PT BDK) is strongly influenced by changes in the external environment, particularly the revision of the PROPER 2025 assessment criteria, increasing stakeholder expectations, and broader environmental sustainability concerns. These external pressures encourage organizations to strengthen environmental governance and adopt more systematic domestic waste management practices.

Among the external drivers identified, the PROPER 2025 assessment framework emerged as the most influential factor. The inclusion of domestic waste management as a specific assessment criterion has shifted organizational attention from viewing domestic waste management as a routine housekeeping activity to recognizing it as an important component of environmental performance. Consequently, management has become more committed to improving waste management practices in order to comply with regulatory requirements while enhancing the company's environmental reputation.

In addition to regulatory pressure, stakeholder expectations also play an important role in driving organizational change. Government agencies, surrounding communities, customers, and other stakeholders increasingly expect companies to demonstrate responsible environmental management. These expectations encourage organizations not only to achieve regulatory compliance but also to strengthen transparency, accountability, and sustainable environmental practices.

The framework therefore recognizes that external drivers provide the strategic direction for organizational action. Rather than functioning as isolated regulatory pressures, these factors become the foundation upon which organizational readiness and operational improvements are developed. As a result, organizations are encouraged to respond proactively through strategic planning, resource allocation, and continuous organizational improvement.

4.4.2 Organizational Readiness

The second layer of the proposed framework represents Organizational Readiness, which functions as the organization's internal capability to transform external environmental pressures into effective operational implementation. The study's conclusions show that successful home trash management requires more than just stakeholder expectations and legal requirements. Rather, in order to build governance systems, organize resources, and maintain implementation over time, companies need sufficient managerial talents.

This study identified five critical organizational dimensions—leadership commitment, infrastructure readiness, human resource readiness, governance and coordination readiness, and monitoring and performance readiness—that together support successful implementation based on the organizational readiness assessment described in Section 4.3. These characteristics should be seen as complementing capabilities that work together to assist the implementation process rather than as distinct organizational components inside the suggested framework.

According to the framework, organizational preparedness serves as the vital link between operational execution and strategic intents. Organizational preparedness examines whether the organization has the potential to convert these external constraints into efficient domestic waste management procedures, whereas

external drives serve as the catalyst for organizational change. In order to successfully implement integrated household waste management and maintain long-term environmental performance, businesses with strong leadership, capable people resources, sufficient infrastructure, effective governance, and rigorous monitoring are better positioned.

This viewpoint also clarifies why varied implementation outcomes may be attained by firms acting under comparable regulatory requirements. While all businesses are subject to external forces such as PROPER 2025, an organization's capacity to effectively adapt to these challenges depends on its organizational readiness. Therefore, before implementing household waste management programs on a larger organizational scale, improving organizational readiness should be regarded as a strategic goal.

In general, the suggested framework highlights that organizational preparedness is an enabling competence that links operational implementation with strategic environmental goals rather than an end in and of itself. Businesses are more likely to achieve sustainable environmental performance, adopt domestic waste management consistently, and adjust to future legislative changes by bolstering these organizational competencies.

4.4.3 Integrated Domestic Waste Management System

The third layer of the proposed framework represents the Integrated Domestic Waste Management System, which serves as the operational core of the proposed managerial framework. This layer ensures that domestic garbage is managed methodically from the point of creation to performance evaluation by translating organizational readiness into coordinated operational activities. The framework incorporates all operational processes into a continuous management system that promotes environmental compliance and sustainable operational performance, as opposed to seeing waste management as a collection of discrete tasks.

Garbage segregation, garbage collection, transportation, waste weighing and recording, and monitoring and evaluation are the five interrelated operational operations that make up the proposed system. Each process serves a specific

purpose while also enhancing the efficiency of the process that comes after it. By making sure that household garbage is divided into the appropriate categories, waste segregation lays the groundwork for appropriate waste management. As a result, efficient segregation lowers the possibility of cross-contamination between various waste streams and increases the effectiveness of collection and transportation operations.

After segregation, trash collection and transportation make sure that household waste is moved from residential areas to the approved temporary storage location in a safe and reliable manner. In order to maintain organizational control over domestic trash throughout the management process, these operational actions serve as the physical link between waste generation and subsequent monitoring activities. Waste weighing and operational documentation are also included in the framework as essential management tools rather than just administrative duties. The results of this study show that management may track implementation progress, spot operational patterns, and support evidence-based decision-making by using operational data produced by routine weighing and recording. As a result, operational data becomes a crucial organizational tool for assessing environmental performance and making plans for future enhancements. Monitoring and evaluation, the last part of this operational layer, guarantees that all operational activities are carried out consistently and in line with organizational goals. Management can detect operational abnormalities, evaluate the efficacy of implementation, and take remedial action as needed thanks to monitoring. Instead of operating as standard technical procedures, operational activities are regularly assessed in this manner.

All things considered, the Integrated Domestic Waste Management System is the operational mechanism that converts organizational preparedness into quantifiable environmental performance. The framework therefore emphasizes that effective domestic waste management depends not only on the implementation of individual operational activities but also on the integration of these activities into a systematic management process capable of supporting long-term organizational sustainability.

4.4.4 Continuous Improvement and Organizational Learning

The fourth layer of the proposed framework represents Continuous Improvement and Organizational Learning, which functions as the mechanism for ensuring the long-term sustainability of the integrated domestic waste management system. The suggested paradigm highlights that implementation should be seen as an ongoing organizational learning process, in contrast to traditional waste management systems that frequently end with operational implementation. Organizations can respond to shifting operating conditions and regulatory requirements by continuously improving their environmental management procedures through systematic monitoring, performance evaluation, and remedial actions.

The study's conclusions show that the pilot project has already implemented regular monitoring, operational documentation, and recurring reviews. These actions, however, shouldn't be viewed as solely necessary for compliance. Rather, they ought to serve as important sources of organizational knowledge that help management pinpoint operational flaws, assess the success of implementation, and create suitable improvement plans. As a result, each implementation cycle produces fresh data that advances organizational learning and facilitates improved decision-making in later implementation phases.

The suggested framework uses an iterative process that includes performance assessment, problem identification, remedial action, and standardization to accomplish continuous improvement. While problem identification helps identify operational restrictions that need managerial attention, performance evaluations allow management to evaluate if implementation objectives have been met. Following the identification of shortcomings, corrective measures are put in place to rectify them. Successful modifications are then integrated into organizational standards to guarantee more consistency in subsequent implementation. The firm can gradually improve its capacity to manage household garbage thanks to this cyclical process.

An important feature of the proposed framework is the incorporation of organizational learning as a strategic management process rather than a technical

operational activity. Lessons learned from monitoring results, employee experiences, stakeholder feedback, and performance evaluations become valuable organizational assets that support continuous adaptation and innovation. Therefore, organizational learning allows the company to respond proactively to future environmental challenges while strengthening institutional capability and environmental governance.

Overall, the proposed framework emphasizes that continuous improvement should not be interpreted as a final stage of implementation but rather as a recurring management cycle that continuously enhances organizational readiness, operational performance, and environmental management capability. By embedding organizational learning into the domestic waste management system, organizations are better positioned to sustain implementation, respond to regulatory changes, and continuously improve environmental performance over the long term.

4.4.5 Expected Outcomes

The final layer of the proposed framework represents the Expected Outcomes, which describe the strategic objectives expected to be achieved through the successful implementation of the Integrated Domestic Waste Management Implementation Framework. These outcomes extend beyond regulatory compliance and reflect the broader organizational benefits associated with strengthening domestic waste management as an integral component of sustainable business operations.

The first expected outcome is improved compliance with the PROPER 2025 assessment requirements. The findings of this study demonstrate that the proposed framework addresses the major implementation gaps identified during the research by integrating external regulatory drivers, organizational readiness, operational implementation, and continuous organizational learning into a unified management system. Consequently, the framework provides organizations with a structured approach for strengthening environmental compliance while reducing the risk of recurring implementation deficiencies.

The second expected outcome is the improvement of organizational environmental performance. Organizations are expected to improve their

environmental management capabilities through routine monitoring, coordinated collection and transportation, systematic waste segregation, and evidence-based performance evaluation. The framework encourages firms to create a proactive environmental management culture that supports ongoing operational development rather than concentrating just on fulfilling minimum statutory requirements.

Achieving sustainable operational performance is the third anticipated result. Instead of being a stand-alone compliance task, the suggested paradigm highlights that environmental management should become an essential component of organizational decision-making. Businesses are expected to increase operational consistency, fortify institutional resilience, and improve their ability to effectively address upcoming environmental challenges by combining leadership commitment, organizational capability, operational discipline, and ongoing organizational learning.

The suggested framework's potential for use outside of PT Bisma Dharma Kencana (PT BDK) is a significant contribution. The framework's managerial principles are not company-specific, despite the fact that it was created from a qualitative case study carried out within a particular business. Rather, the framework is intended as a general implementation model that plantation businesses and other organizations dealing with comparable difficulties in creating integrated domestic waste management systems while adhering to environmental requirements may modify. Because of the framework's flexibility, organizations can modify its implementation based on their operational features, organizational capabilities, and regulatory environment.

Overall, the Integrated Domestic Waste Management Implementation Framework represents the principal contribution of this research. By integrating external environmental drivers, organizational readiness, operational implementation, and continuous organizational learning into a single managerial framework, the study provides both theoretical and practical contributions to the field of environmental management. The framework not only strengthens the implementation of domestic waste management within PT BDK but also offers a systematic managerial reference that can support organizations in achieving environmental compliance, improving operational performance, and promoting long-term organizational sustainability.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the conclusions derived from the findings and discussions presented in the previous chapter. The conclusions are formulated by addressing each research question and synthesizing the key findings obtained through thematic analysis, organizational readiness assessment, field observations, and document analysis. In addition, this chapter discusses the managerial implications of the proposed Integrated Domestic Waste Management Implementation Framework (IDWMIF), highlighting its potential contribution to strengthening environmental management practices within plantation companies.

Furthermore, this chapter outlines the theoretical and practical contributions of the study, acknowledges the limitations encountered during the research process, and provides recommendations for PT Bisma Dharma Kencana (PT BDK), other organizations facing similar environmental management challenges, and future researchers. Together, these sections summarize the overall contribution of the study while providing practical guidance for the implementation and continuous improvement of integrated domestic waste management systems.

5.1 Conclusion

This study was undertaken to develop an integrated managerial approach for strengthening domestic waste management implementation at PT Bisma Dharma Kencana in response to the revised PROPER 2025 assessment requirements. Using a qualitative case study approach, the research examined the current implementation of domestic waste management, identified the factors influencing implementation, assessed organizational readiness, and developed an Integrated Domestic Waste Management Implementation Framework (IDWMIF). The following conclusions address the goals set forth in Chapter I and provide a summary of the study's main findings.

Through the implementation of trash segregation, collection, transportation, weighing, documenting, and routine monitoring within a pilot project, PT BDK has developed the essential operational components of household waste management,

according to the report. These operational procedures show that the business has transitioned from traditional waste collection to a more organized and comprehensive management strategy. However, there are still a number of implementation gaps, such as inadequate infrastructure coverage, uneven resident waste segregation practices, and a lack of completely uniform operational procedures throughout all residential areas. These results show that while significant progress has been made, more organizational enhancements are needed to fully meet the updated PROPER 2025 domestic trash assessment standards.

Additionally, the study shows how external, institutional, and operational factors interact to affect how well residential waste management is implemented. The redesigned PROPER 2025 assessment methodology emerged as the major external driver driving organizational transformation, whereas leadership commitment, governance procedures, cross-functional coordination, resource allocation, and monitoring competence impacted institutional implementation capacity. At the operational level, resident participation, infrastructure availability, behavioural consistency, and routine monitoring significantly influenced implementation effectiveness. These findings suggest that successful domestic waste management depends not only on technical waste management activities but also on the organization's ability to integrate external environmental pressures with internal organizational capabilities.

According to the organizational readiness assessment, PT BDK is moderately to highly prepared to put in place an integrated domestic waste management system. A strong organizational basis for execution is provided by strong leadership commitment, efficient governance, cross-functional collaboration, skilled human resources, and methodical monitoring. The report does, however, also point out a number of areas that still need improvement, most notably the establishment of quantifiable performance indicators to enable long-term implementation, the formalization of integrated standard operating procedures, and the growth of supporting infrastructure. All things considered, PT BDK has enough organizational preparedness to extend implementation beyond the pilot project while maintaining these organizational capacities.

The main result of this research was the Integrated Domestic Waste Management Implementation Framework (IDWMIF), which was established based on these findings. External Drivers, Organizational Readiness, Integrated Domestic Waste Management Operations, Continuous Organizational Learning, and Expected Organizational Outcomes are the five sequential implementation stages that the framework incorporates. The suggested framework shows how external regulatory pressures are translated into successful operational implementation through organizational readiness and strengthened through ongoing organizational learning, in contrast to earlier implementation models that mainly emphasize technical waste management activities. As a result, the IDWMIF offers plantation firms a useful managerial resource as well as a theoretical addition to the body of knowledge about integrated domestic waste management implementation in corporate-managed plantation housing situations.

Overall, this study comes to the conclusion that organizational transformation, not just operational improvement, is necessary to strengthen domestic waste management. The organization's capacity to incorporate external regulatory drivers, organizational preparedness, methodical operational implementation, and ongoing organizational learning into a cohesive management system is necessary for sustainable implementation. There are three main ways in which the study adds to the body of current knowledge. First, it builds on earlier research by showing that external regulatory drivers—specifically, the updated PROPER 2025 evaluation framework—act as the first stimulus for organizational transformation rather than only as requirements for compliance. Second, it views organizational readiness as the primary means by which infrastructure, human resources, governance, leadership commitment, and monitoring capacity all work together to convert outside demands into efficient operational procedures. Third, it develops the Integrated Domestic Waste Management Implementation Framework (IDWMIF), which proposes a sequential implementation pathway consisting of External Drivers, Organizational Readiness, Integrated Domestic Waste Management Operations, Continuous Organizational Learning, and Expected Organizational Outcomes. Collectively, these contributions advance the theoretical understanding of integrated domestic waste management implementation while

providing a practical implementation framework for plantation companies and other organizations facing similar environmental governance challenges.

5.2 Theoretical Implications

The findings of this study provide several theoretical implications for the literature on integrated domestic waste management implementation. Rather than merely confirming existing theories, the study extends previous empirical research by providing new insights into how external environmental drivers, organizational readiness, and integrated implementation interact within a corporate-managed plantation housing environment. These theoretical implications were developed through a systematic comparison between the empirical findings presented in Chapter IV and previous empirical studies discussed in Chapter II. Collectively, the findings contribute to the advancement of integrated domestic waste management literature by refining existing implementation perspectives and proposing a more comprehensive organizational implementation model.

The first theoretical implication concerns the role of external environmental drivers in domestic waste management implementation. (Wilson, et al., 2015), (Rodić & Wilson, 2017), and (Hemidat, et al., 2022) emphasized the importance of governance, institutional arrangements, stakeholder participation, and environmental policy in supporting effective waste management systems. However, rather than being explicit implementation drivers, this research mostly considered regulatory environments as contextual variables. By influencing management commitment, governance mechanisms, organizational priorities, and resource allocation prior to operational implementation, the study's findings show that the updated PROPER 2025 assessment framework served as the primary catalyst that started organizational transformation. Therefore, by framing external regulatory forces as the catalyst for organizational transformation rather than just as external compliance requirements, this study improves on earlier implementation views.

Organizational preparedness as the primary implementation mechanism is the subject of the second theoretical conclusion. Previous studies by (Viljoen, Schenck, Volschenk, Blaauw, & Grobler, 2021), (Hemidat, et al., 2022), and (Nasution, Wulandari, Wahono, & Samsul, 2025) highlighted how crucial

infrastructure, governance, institutional coordination, and stakeholder cooperation are to the successful implementation of waste management. Nonetheless, these organizational components were typically explored separately or in conjunction with one another. The results of this study show that organizational readiness is a dynamic organizational capability made up of infrastructure readiness, human resource capability, governance and coordination, leadership commitment, and monitoring systems that work together to convert external environmental pressures into successful operational implementation. Thus, by defining organizational readiness as the primary mechanism connecting external regulatory forces with operational implementation, this study expands on earlier empirical research.

The third theoretical implication concerns the development of the Integrated Domestic Waste Management Implementation Framework (IDWMIF). (Wilson, et al., 2015) introduced the Integrated Sustainable Waste Management (ISWM) framework by emphasizing technical, institutional, and stakeholder dimensions, while (Hemidat, et al., 2022) and (Nasution, Wulandari, Wahono, & Samsul, 2025) highlighted the importance of governance, stakeholder collaboration, and institutional coordination in supporting effective waste management implementation. Building upon these previous studies, this research develops the IDWMIF, which integrates External Drivers, Organizational Readiness, Integrated Domestic Waste Management Operations, Continuous Organizational Learning, and Expected Organizational Outcomes into a sequential implementation pathway. This framework extends the existing integrated waste management literature by demonstrating how these dimensions interact throughout the implementation process, thereby providing a more comprehensive theoretical perspective for domestic waste management implementation within corporate-managed plantation housing environments.

Overall, the theoretical contribution of this study lies not in replacing existing theories but in refining and integrating them within a unified organizational implementation perspective. The findings demonstrate that domestic waste management implementation should be understood as a sequential organizational transformation process in which external regulatory drivers stimulate organizational readiness, organizational readiness enables operational

implementation, and continuous organizational learning strengthens long-term implementation toward sustainable organizational outcomes. Accordingly, this study contributes to the theoretical development of integrated domestic waste management by providing a more comprehensive explanation of the organizational processes underpinning successful implementation while offering a conceptual foundation for future environmental management research.

5.3 Managerial Implications

The findings of this study provide several managerial implications for PT Bisma Dharma Kencana (PT BDK) in strengthening the implementation of domestic waste management. The results show that the company has already created the basic operational procedures through the pilot project rather than suggesting a completely new management system. Therefore, strengthening organizational competency, institutionalizing these current processes, and gradually expanding application throughout the operating area are the managerial priorities.

For household waste management, management should first clearly define process ownership and accountability. The results show that implementation necessitates a clear division of duties because it encompasses multiple organizational activities. Overall system coordination, field collection activities, infrastructure availability, trash weighing and recording, performance evaluation, and coordination with outside parties should all be formally defined by management. Practically speaking, relevant estate and operational staff should be tasked with normal field execution, while HSE should continue to oversee the environment and check compliance. In addition to ensuring that operational issues may be linked to accountable functions for prompt remedial action, clear process ownership would lessen reliance on unofficial coordination.

Second, management ought to codify the operating procedures that the pilot project has already tested. Standardized operating procedures and job instructions should include current tasks such as source segregation, daily collection, transportation, weighing, documentation, and monitoring. The frequency of collection, segregation standards, accountable personnel, weighing and recording techniques, temporary storage arrangements, and escalation protocols in the event

of operational violations should all be specified in these procedures. The goal of management is to guarantee that the system remains stable despite changes in staff, managers, or operational circumstances.

Third, the organizational preparedness deficiencies found in this study should guide management's resource allocation. According to the readiness assessment, infrastructure is still the primary area that needs more improvement before wider deployment, while leadership commitment and monitoring capabilities are comparatively good. Therefore, without first evaluating the suitability of bins, temporary collecting locations, transportation equipment, weighing facilities, and staff coverage in each implementation area, management should refrain from implementing uniform expansion. Therefore, rather than relying just on immediate compliance pressure, resource allocation should be tiered in accordance with operational needs and implementation preparedness.

Fourth, a small number of useful performance metrics should be established by management for regular assessment. Since waste weighing, recording, and monitoring have already been established by PT BDK, managerial choices should be supported by these facts. Unresolved operational deviations, segregation uniformity, volume of trash recorded by category, collection completeness against schedule, and completion of remedial actions are examples of pertinent indicators. These indicators are meant to help managers spot reoccurring issues, assess system consistency, and decide whether further resources or remedial measures are needed rather than to add an undue reporting burden.

Fifth, management should incorporate domestic waste performance into a structured review mechanism. Operational data should be reviewed periodically by the responsible functions to identify infrastructure shortages, collection disruptions, segregation problems, coordination gaps, and unresolved corrective actions. Issues that cannot be resolved at the operational level should be escalated to the appropriate management level. This would create a clearer connection between field-level performance and managerial decision-making while preventing monitoring data from functioning only as compliance documentation.

Based on these managerial implications, implementation should be carried out progressively in accordance with PT BDK's existing organizational readiness and operational capacity. The proposed managerial implementation roadmap is presented in Table 7.

Table 7. Implementation Roadmap

Timeline	Priority	Main Activities	Expected Outcome
0–6 Months	System Establishment	SOP development, segregation bins, staff training, role assignment	Standardized waste management system established
6–18 Months	System Strengthening	KPI implementation, DLH collaboration, digital monitoring, periodic evaluation	Improved operational performance and regulatory compliance
>18 Months	Sustainability Integration	EMS integration, circular economy initiatives, continuous improvement, benchmarking	Sustainable domestic waste management supporting long-term PROPER performance

The roadmap reflects a managerial sequence from system stabilization to controlled expansion and eventual institutionalization. Managers should concentrate on formalizing duties and stabilizing the operational procedures that were previously developed through the pilot project during the short-term phase. Implementation can be progressively increased over the medium-term phase when staff capacity, infrastructure, and performance controls are improved. Over time, management should focus on preserving system consistency by conducting frequent performance reviews, taking remedial action, and periodically reevaluating operational requirements.

In general, this study's managerial implications do not suggest that PT BDK should completely revamp its household waste management system. Rather, by

enhancing accountability, operational uniformity, resource allocation, performance assessment, and management review, management should fortify and institutionalize the operational standards already developed through the pilot project. The company can improve implementation while preserving operational viability and promoting long-term adherence to the PROPER 2025 requirements by using this forward-thinking strategy.

5.4 Strategic Implications

The findings of this study have broader strategic implications for PT Bisma Dharma Kencana (PT BDK), particularly in relation to environmental governance, regulatory adaptability, and sustainable operations. PT BDK's experience shows that residential waste management is now important to the company's overall environmental performance rather than being a minor operational concern. As a result, the results' strategic importance goes beyond enhancing the organization's present waste management procedures and addresses how it responds to changing environmental regulations.

First, the results show that environmental management's strategic scope needs to be expanded beyond conventional production-related environmental concerns. In the past, PT BDK has concentrated on issues such as hazardous waste, hazardous materials, air pollution, and water management. However, the redesigned environmental assessment framework's greater emphasis on household waste shows that environmental performance now encompasses supporting operating settings, including living spaces for employees. From a strategic perspective, this means that rather than focusing solely on manufacturing processes, the company's environmental governance boundary should include the larger operational ecosystem.

Second, the results indicate that a key component of PT BDK's long-term environmental strategy should be regulatory flexibility. The PROPER 2025 assessment framework adjustment serves as an example of how external needs can quickly modify organizational goals and reveal flaws that were previously hidden. Therefore, from a strategic standpoint, the business should be able to foresee, understand, and react to changing environmental requirements before they lead to

serious compliance gaps. This suggests a change from a primarily reactive compliance strategy to one that is more focused on adaptive environmental management.

Third, the results show that organizational readiness is not just an operational resource but also a strategic competence. The study shows that an organization's potential to adjust to shifting environmental demands is determined by a number of factors, including infrastructure design, monitoring systems, cross-functional coordination, leadership commitment, and governance capacity. By enhancing the organization's ability to foresee regulatory changes, react proactively to new environmental requirements, and maintain long-term environmental performance, developing these capacities strategically improves organizational resilience.

Fourth, the results emphasize how strategically significant it is to lessen reliance on disjointed or problem-specific environmental solutions. The experience of PT BDK demonstrates that when a sizable disparity persists in one area, excellent performance in a number of environmental categories does not always protect overall environmental performance. From a strategic standpoint, this suggests that a more comprehensive approach to environmental performance is required, whereby new vulnerabilities are evaluated throughout the entire business instead of being solely handled by discrete technical departments. This strategy can improve the business's capacity to spot environmental weaknesses before they become serious compliance issues.

Fifth, the proposed IDWMIF provides a potential basis for Finally, the proposed Integrated Domestic Waste Management Implementation Framework (IDWMIF) provides strategic value beyond the immediate PT BDK context. Although the framework was created in an industrial housing setting on plantations, organizations dealing with comparable environmental governance issues can use its sequential implementation logic as a strategic guide. As a result, in similar industrial settings, the framework may boost the creation of more adaptable environmental management methods, promote organizational learning, and facilitate knowledge transfer between operational sites.

The study's main strategic implication is that, rather than being viewed as a stand-alone compliance measure, domestic waste management should be acknowledged as a crucial part of long-term environmental governance. PT BDK will be able to respond more successfully to upcoming environmental issues while promoting sustainable operations and long-term organizational resilience by strengthening environmental adaptation, increasing organizational capability, and institutionalizing continuous learning.

5.5 Research Limitations

When evaluating the results and taking into account their wider relevance, it is crucial to recognize a number of limitations even though this study offers significant empirical and theoretical insights into the implementation of residential waste management inside a plantation enterprise.

Initially, PT Bisma Dharma Kencana (PT BDK) was the subject of a qualitative single-case study methodology. The results may not be directly applicable to other firms operating under different organizational, environmental, or legal constraints, even if this technique allowed for a thorough understanding of the organizational context and implementation process.

Second, the study was conducted during the implementation of a domestic waste management pilot project. Consequently, the findings primarily reflect the organization's initial implementation stage rather than the long-term performance of a fully established domestic waste management system. Future organizational developments may produce different implementation outcomes as the program expands and matures.

Third, this study focused primarily on the managerial and organizational aspects of domestic waste management implementation. Therefore, it did not specifically evaluate the technical and economic feasibility of different treatment alternatives for organic, recyclable inorganic, and residual waste. In particular, the potential for on-site waste treatment as a practical and low-cost solution was not empirically assessed. Technical performance, environmental impacts, treatment

costs, and quantitative waste reduction outcomes were therefore beyond the scope of this study.

Finally, the proposed Integrated Domestic Waste Management Implementation Framework (IDWMIF) was developed based on empirical findings obtained from a single organizational setting. Although the framework has been designed to be adaptable to organizations facing similar environmental management challenges, its applicability in different industrial sectors and organizational contexts requires further validation through future research.

5.6 Future Research Recommendations

Building upon the limitations of this study, future research should further examine the applicability, refinement, and long-term effectiveness of the Integrated Domestic Waste Management Implementation Framework (IDWMIF) across different organizational and operational contexts. Since this study employed a qualitative single-case study approach at PT Bisma Dharma Kencana (PT BDK), further investigation is needed to strengthen the generalizability and theoretical development of the proposed framework.

First, future research should validate the IDWMIF through comparative studies involving multiple plantation companies or other industrial organizations with similar operational characteristics. Such studies could examine whether the implementation pathway identified in this study remains applicable across different organizational, geographical, and regulatory contexts, while also identifying which components of the framework are context-specific and which are more broadly transferable.

Second, longitudinal research is recommended to examine how organizational readiness, operational implementation, and continuous organizational learning evolve as domestic waste management systems progress beyond the pilot stage. This would provide a better understanding of the long-term sustainability of the implementation process and how organizations adapt to changing operational conditions and environmental regulations.

Third, future research could quantitatively examine the relationships proposed within the IDWMIF by developing measurable indicators for external environmental drivers, organizational readiness, operational implementation, continuous organizational learning, and organizational outcomes. Quantitative validation using a larger sample of organizations could strengthen the explanatory power of the framework and provide further empirical support for the relationships identified in this qualitative study.

Fourth, future research should examine the technical and economic feasibility of different treatment alternatives for each waste category, including organic, recyclable inorganic, and residual waste. Particular attention could be given to on-site treatment and utilization methods that are technically simple, environmentally appropriate, and economically feasible for plantation operations. Comparative assessments of treatment costs, waste reduction performance, environmental benefits, and operational requirements could help identify practical and low-cost solutions for managing each waste category.

Future studies could also integrate managerial, technical, environmental, and economic perspectives to provide a more comprehensive understanding of domestic waste management implementation. Combining organizational capabilities with assessments of technical performance, environmental outcomes, and economic feasibility would complement the managerial focus of the IDWMIF and support the development of more integrated and sustainable waste management practices.

Overall, future research should examine not only how integrated domestic waste management systems are implemented, but also how they perform and evolve over time, which organizational conditions support their long-term effectiveness, and which technical and economic solutions are most appropriate for different waste categories. Through comparative, longitudinal, quantitative, and multidisciplinary approaches, future research can further strengthen both the theoretical development and practical applicability of integrated domestic waste management implementation.