Internal Control Strategies to Mitigate Inventory Losses in Palm Oil Plantations: A Case Study of PT XYZ

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ABSTRACT

This study evaluates the internal control mechanisms governing supporting inventory at PT XYZ, a palm oil plantation. Inventory plays a crucial role in the production process, as inadequate stock levels can hinder operational efficiency. However, ineffective inventory management may result in losses due to damage or spoilage, rendering materials unusable in palm oil production. Employing a qualitative research design with a case study approach, this study incorporates a literature review and interviews with relevant stakeholders to identify the root causes of supporting inventory losses and propose targeted recommendations. The findings suggest that PT XYZ should integrate supporting inventory into its risk assessment framework, enhance interdepartmental coordination, transition from manual to electronic inventory management systems, and establish standardized operating procedures (SOPs) for currently unmitigated risks. These measures would help prevent inventory losses stemming from damage or expiration, thereby strengthening overall internal control.

Keywords: Internal Control; Supporting Inventories; Obsolescence; Palm Oil.

Evaluasi Pengendalian Internal Atas Persediaan Penunjang Di Kebun Kelapa Sawit Pt Xyz

ABSTRAK

Penelitian ini bertujuan untuk mengevaluasi pengendalian internal atas persediaan penunjang pada PT XYZ yang bergerak dalam bidang perkebunan kelapa sawit. Persediaan adalah salah satu faktor penting dalam proses produksi, tanpa persediaan yang cukup sebuah produksi tidak dapat berjalan secara optimal. Namun, persediaan yang tidak terkendali dengan baik dapat menyebabkan kerugian dari barang yang rusak sehingga tidak dapat digunakan dalam produksi kelapa sawit. Menggunakan penelitian kualitatif dengan pendekatan studi kasus, penelitian ini melakukan studi literatur dan wawancara dengan stakeholders terkait untuk mengetahui penyebab terjadinya keuasangan atas persediaan penunjang dan memberikan rekomendasi atas temuan tersebut. Hasil penelitian ini menunjukkan bahwa PT XYZ memerlukan perbaikan antara lain memasukkan persediaan penunjang sebagai komponen dalam melakukan risk assessment, peningkatan koordinasi antar departemen, penggunaan system elektronik untuk menggantikan proses manual dan pembuatan SOP atas risiko yang saat ini belum termitigasi, untuk menghindari terjadinya kerugian persediaan berupa kerusakan maupun kadaluarsa.

Kata Kunci: Pengendalian Internal; Persediaan Penunjang; Keusangan; Kelapa Sawit.

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INTRODUCTION

The oil palm plantation and processing industry is a key sector in Indonesia's economy, given the country's tropical climate, which is highly suitable for oil palm cultivation (Khalida & Lontoh, 2019). *Elaeis guineensis Jacq.*, commonly known as the oil palm, is one of the most efficient vegetable oil-producing crops in terms of productivity per unit area, outperforming alternatives such as sunflower, olive, and corn oil. With a lifespan of up to 25 years and the ability to adapt to various environmental conditions, oil palm and its derivative products remain economically viable. Beyond its primary use in food production, palm oil is also utilized as a component in renewable fuel mixtures (Budiargo, Poerwanto, & Sudradjat, 2015).

Data from the Directorate General of Plantations of the Ministry of Agriculture of the Republic of Indonesia (2022), as presented in Table 1, indicate a consistent annual increase in both the cultivated area and production volume of oil palm plantations. This expansion, while beneficial for economic growth, also amplifies the risks associated with plantation management and operations.

Table 1. Total Oil Palm Area and Production

Year	Oil Palm Area (Ha)	Oil Palm Production (Ton)
2018	14.326.350	42.883.631
2019	14.456.611	47.120.247
2020	14.586.597	45.741.845
2021	14.663.416	46.854.457
2022	15.380.981	48.235.405

Source: Directorate General of Plantations of the Ministry of Agriculture of the Republic of Indonesia (2022)

The larger the oil palm plantation owned by a company, the greater the inventory required to support the production process. A larger plantation area necessitates increased materials and equipment for various stages of production, from plant maintenance to processing. For example, extensive plantations require greater quantities of fertilizers, pesticides, and other inputs to sustain productivity. Effective monitoring of supporting inventory is crucial in this context, enabling companies to identify urgent needs, anticipate demand fluctuations, and ensure a smooth production process. Proper inventory oversight also optimizes resource utilization, minimizes waste, and enhances operational efficiency. Furthermore, systematic inventory monitoring allows companies to identify trends in material usage, adjust procurement strategies accordingly, and strengthen their competitive advantage in an evolving market (Budiargo, Poerwanto, & Sudradjat, 2015).

According to Pernyataan Standar Akuntansi Keuangan (PSAK) 14, an asset qualifies as inventory if it meets specific criteria (Ikatan Akuntan Indonesia, 2008). These include inventories available for sale in the ordinary course of business, those in the production process for future sale, and materials or supplies used in production or service delivery.

Internal control plays a critical role in mitigating business risks by implementing secure systems, ensuring proper approval and authorization by responsible personnel, maintaining adherence to established standards, and facilitating timely and accurate communication with stakeholders (Zhu & Song,

2021). The Institute of Internal Auditors (IIA) (2017) defines internal control as the actions taken by management, the board, and other stakeholders to strengthen risk management and enhance the achievement of corporate objectives. Similarly, Romney, Steinbart, Summers, and Wood (2024) define internal control as the processes and procedures designed to provide reasonable assurance that control objectives are met.

A well-structured internal control system for inventory management contributes positively to a company's economic performance (Imdieke, Li, & Zhou, 2023). Ineffective inventory control over purchasing, tracking, and valuation can result in mismatches between inventory and demand, leading to suboptimal operating performance (Feng, Li, Mc Vay, & Skaife, 2015). Moreover, weak internal control systems are associated with declining company performance, whereas strengthening internal controls can improve operational efficiency and financial outcomes (Wilford , Bodin, & Gordon, 2020).

Inventory management is a fundamental component of operational performance, enabling companies to optimize revenue while minimizing costs. It ensures the continuity of production and plays a vital role in maintaining business sustainability (Hudori & Tarigan, 2019). Effective inventory management is a continuous process involving organization, planning, and control (Al-Dulaime & Walid, 2019).

In this context, PT XYZ, an oil palm plantation company operating in three Indonesian provinces—Riau, West Kalimantan, and East Kalimantan—faces challenges related to inventory management. PT XYZ's inventory is categorized into five types: palm oil, palm kernel, fertilizers and chemicals, spare parts, and other equipment. The combined inventory value of palm oil and palm kernel accounts for 56% of total inventory, while fertilizers, chemicals, spare parts, and equipment represent 41%. Given that palm oil and palm kernel are the company's primary revenue sources, their inventory management receives significant attention. However, supporting inventories such as fertilizers, chemicals, spare parts, and equipment, which are essential for sustaining production, receive comparatively less oversight. Preliminary data from PT XYZ indicate that weaknesses in managing supporting inventory resulted in financial losses amounting to IDR 110 billion in 2020. These challenges underscore the need for an evaluation of the internal control system governing supporting inventory.

Previous research highlights key factors contributing to effective inventory control. Fei, Lv, and Ma (2023) emphasize that improving employee competence, strengthening management's understanding of internal controls, utilizing inventory management systems, enhancing interdepartmental communication, and reinforcing risk awareness are critical to a company's growth. Similarly, Cheng, Beng, and Kim (2018) argue that robust internal control systems not only enhance the quality of information available to investors but also improve operational efficiency. Adi (2023) examined internal control weaknesses in inventory management at PT TMT, a manufacturing company, identifying deficiencies in planning, procurement, and record-keeping. The study revealed the absence of routine checks, barcode technology, job rotation, and clear policies on supplier interactions. Additionally, it noted the lack of periodic audits, insurance coverage for inventory, proper separation of duties, and disaster recovery

mechanisms. While extensive research has been conducted on inventory control in manufacturing, studies on internal control evaluations in the oil palm plantation sector remain limited. Moreover, companies tend to focus on primary inventory control while overlooking supporting inventory, despite its significant financial impact.

The Internal Control Integrated Framework (ICIF) provides a structured approach for companies to develop and implement internal control systems that adapt to a dynamic business environment, mitigate risks, and support effective decision-making and corporate governance (The Committee of Sponsoring Organizations of the Treadway Commission (COSO), 2013). Given its widespread use in internal control assessments, this study adopts the ICIF framework (COSO, 2013) to evaluate PT XYZ's internal control system, specifically in managing supporting inventory within its oil palm plantation operations.

RESEARCH METHOD

This study employs a qualitative research design with a case study approach, conducted at PT XYZ. Case study methods are widely used in research on regional planning, public administration, public policy, management sciences, and education (Yin, 2018). This research strategy incorporates content analysis and thematic analysis. Content analysis, an observational research method, systematically evaluates the symbolic content of recorded communication. It enables researchers to analyze textual data and identify key properties such as the presence of specific words, concepts, characters, themes, or sentences (Sekaran & Bougie, 2016).

The study explores multiple perspectives, incorporating insights from both regulators and policy implementers. By integrating these viewpoints, the research aims to formulate recommendations that reflect the concerns of all relevant stakeholders. Interviews were conducted with the head of the internal audit department, representing the regulatory perspective, while the policy implementer perspective was captured through interviews with the manager of supporting goods procurement and the head of the warehouse. These interviews took place between June and August 2024, using both face-to-face and online meeting formats. The details of the research informants are presented in Table 2.

Table 2. Informants of the study

No	Title	Research Subject
1.	Head of Internal Audit (AK)	PT XYZ employees who are responsible for the policies and procedures that PT XYZ has to implement internal control activities.
2.	Procurement Manager (HZ)	PT XYZ employees who are responsible for the procurement process.
3.	Head of Warehouse (R)	PT XYZ employees who are responsible for operational activities that use supporting supplies.

Source: Research Data, 2024

After data collection, this study applies qualitative descriptive analysis techniques to examine the findings. Additionally, thematic analysis is conducted to evaluate the content of what has been stated or documented during the data collection process, with a focus on key issues identified by the researcher (Creswell, 2013). The interview findings are further supported by secondary data sources, including the Audit Report, Standard Operating Procedures (SOP), and the Risk Register, to enhance the robustness of the analysis. The framework used for data analysis in this study is presented in Figure 1.

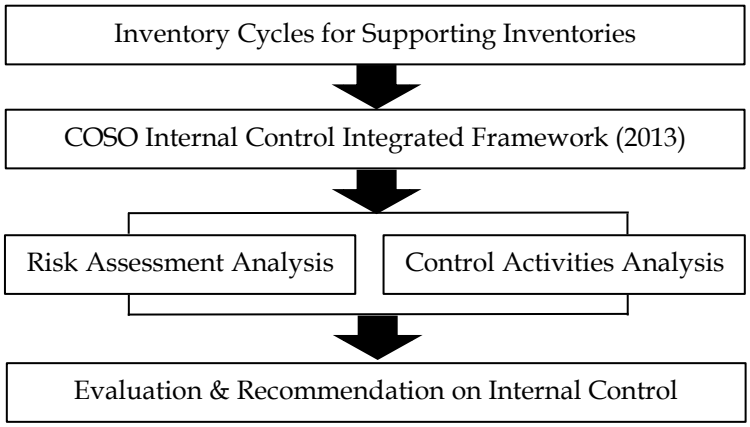

Figure 1: Research Data Analysis

Source: Research Data, 2024

RESULT AND DISCUSSION

PT XYZ has established a risk identification procedure that considers both internal and external factors affecting company performance. This process is documented in the company's risk register, which is updated annually through a risk workshop involving department heads. During this workshop, significant risks that may impact operations are identified, assessed based on their likelihood and potential impact, and prioritized accordingly. The effectiveness of existing risk controls is then evaluated, and each project is assigned a risk rating—categorized as acceptable, acceptable with conditions, or unacceptable.

> "PT XYZ has a comprehensive risk management policy supported by a regularly updated risk register. At the beginning of each year, we conduct a risk workshop involving all department heads to identify, analyze, and prioritize significant business risks. The results of this workshop are then documented in the risk register" (AK).

However, an analysis of the company's risk register reveals that supporting inventory risks have not been assessed. The absence of a risk register for supporting supplies in oil palm plantations significantly impacts the company's strategic policies by limiting the systematic identification and mitigation of risks. This oversight can lead to operational inefficiencies such as material damage, stock shortages, or wastage due to improper storage, ultimately increasing costs and reducing efficiency. Additionally, the lack of risk documentation may affect compliance with governance standards such as ISPO or RSPO, harm the company's reputation, and slow down strategic decision-making, making the

company less adaptive to operational challenges. To address this gap, risk assessments and internal control evaluations in this study are based on interviews with key stakeholders and a review of Standard Operating Procedures (SOPs) at PT XYZ.

Internal control activities at PT XYZ are categorized according to business processes related to inventory management, specifically the procurement, receipt and storage, and issuance of supporting supplies. Control activities are further classified by function as preventive, detective, or corrective. The evaluation of these internal controls is based on document reviews and interviews. In transactions involving supporting supplies, three key departments interact: internal audit, procurement, and agronomy.

In the first stage, the agronomy department assesses the need for fertilizers and chemicals, typically for a three- or six-month period. This assessment document specifies the type, quantity, composition, and minimum tolerance levels, serving as a benchmark for claims. The procurement department then receives this analysis and issues tender offer letters to at least three suppliers, ensuring that each supplier provides the necessary legal documentation. Simultaneously, a tender committee is formed to evaluate bids and select the winning supplier. The committee comprises the Deputy CEO, Commercial Head, Managing Director, and other officials appointed by the CEO or Deputy CEO. Supporting this committee is the tender committee secretariat, which oversees the administrative aspects of the tender process.

Once the procurement department collects the tender offer documents, they are submitted to the tender committee secretariat, initiating negotiations between the tender committee and shortlisted bidders. The committee identifies at least three priority bidders for the negotiation process. Following discussions, the committee reaches a final, non-negotiable decision on the tender winner, which is documented in the Tender Winner Notification Letter (SPPT). The SPPT is then forwarded to the procurement department to proceed with the purchase.

Following supplier selection, the procurement department coordinates with the agronomy department to schedule delivery. Before shipment, the agronomy department liaises with plantation managers to confirm that the storage warehouse is prepared to receive the supporting supplies.

Table 3 presents an analysis of the risks associated with inventory management in oil palm plantations and the internal control measures implemented to mitigate these risks, specifically in the procurement of supporting supplies.

Table 3. Risk Analysis and Internal Control Activities for purchasing

Risk	Internal Control	P/D/C*)	*Checklist*
Inaccurate or incomplete requirements analysis.	Farm managers and agronomy department hold regular meetings to coordinate quantity needs.	P	X
Supplier does not meet legality requirements.	Procurement department thoroughly checks supplier legality and verifies legal documents.	P	✓
Tender committee is not objective in evaluation.	Establish clear and documented evaluation criteria for assessing tender offers.	P	✓
Bias or conflict of interest in selecting tender winners.	Create a code of conduct, train tender committee members on conflicts of interest, and implement monitoring mechanisms.	P	✓
Lack of transparency in the tender process.	Use an electronic tender system with audit records and change history.	P	X
Tender offer does not match the requirement or budget.	Set budget limits for approval before processing tender offers.	P	✓
No post-tender evaluation for process improvement.	Collect feedback from all parties in the tender process for improvement.	P	✓

*) P = Preventive actions D = Detective actions C= Corrective actions ✓=Effective X=Not Effective

Source: Research Data, 2024

Interviews with key informants revealed that regular coordination meetings between farm managers and the agronomy department regarding quantity requirements, as outlined in Table 3, were not consistently implemented.

> "Usually, the procurement department coordinates with us regarding the quantity and type of goods to be delivered by the supplier. However, miscommunication occasionally occurs, resulting in discrepancies between the ordered and received quantities, leading to storage issues in the warehouse" (HZ).

Additionally, the electronic tender management system, which could provide audit records and track change history, has not been implemented in the procurement process.

> "The approval process for purchase requisitions (PR) and purchase orders (PO) follows established procedures. For high-value and strategic commodities such as fertilizers and chemicals, approval must go through a tender committee comprising top management. However, the procurement process still does not utilize a system to streamline these business processes. PR approvals for lower-value commodities are generally handled by the relevant department heads" (HZ).

Based on the identified weaknesses in internal control activities, as detailed in Table 3, this study provides recommendations for improvement, which are presented to management in Table 4.

Table 4. Proposed recommendation to Control Activities in the Purchase Cycle

Internal Control	Risk	Recommendatin
Farm managers and agronomy department hold regular meetings to coordinate quantity needs.	Inaccurate or incomplete requirements analysis.	Regular, structured meetings with all relevant parties, using accurate data and an integrated information system (barcode).
Use an electronic tender system with audit records and change history.	Lack of transparency in the tender process.	Implement an electronic tender management system for complete audit records, easier access to information, and reduced human error.

Source: Research Data, 2024

Regular coordination meetings are essential for effective planning, decision-making, and ensuring smooth operations. The absence of such meetings increases the risk of over-ordering, which can lead to excess goods being stored outside the warehouse, potentially compromising their quality or causing damage. Implementing technology, such as a barcode system, can significantly enhance the accuracy of tracking incoming and outgoing inventory. According to Adi (2023), barcode systems improve efficiency, streamline operations, and provide real-time, accurate inventory data, outperforming traditional manual stock card recording.

Manual tendering processes for fertilizers and chemicals present several risks, including a lack of transparency, collusion, nepotism, data entry errors, and inefficient document storage. These inefficiencies increase operational costs, delay production, and create vulnerabilities for corruption, bribery, and price manipulation. Additionally, selecting an unsuitable supplier can negatively impact product quality, safety, and environmental compliance, potentially leading to financial losses, reputational harm, operational disruptions, and legal consequences. To mitigate these risks, implementing an electronic tendering system is strongly recommended, as it enhances transparency, efficiency, and accountability. In fact, PT XYZ has already adopted an electronic procurement system for goods other than fertilizers and chemicals. Askhari (2023) highlights that fully transitioning to e-procurement for all transactions eliminates conventional manual processes, thereby reducing operational risks and fraud. Furthermore, maximizing the capabilities of information systems can enhance efficiency and establish more transparent control mechanisms (Boufounou, Eriotis, Kounadeas, Argyropoulos, & Poulopoulos, 2024).

The second stage of the process involves receiving and storing supporting supplies. Once the supplier processes an order, the goods are delivered to PT XYZ along with a delivery note. Upon arrival, the warehouse team verifies the quantity and type of goods by weighing them and cross-referencing with the purchase order. A quality check is then conducted to ensure the items meet the specifications set by the R&D department. If discrepancies or quality issues are identified, the goods are returned to the supplier. If the items meet the required standards, the warehouse accepts the delivery, signs the necessary documents, updates the inventory system, and stores the supplies accordingly. To maintain operational efficiency, the warehouse manager strategically places new inventory at the back to avoid obstructing future deliveries.

Table 5 presents an analysis of the risks and internal control activities associated with the business processes of receiving and storing supporting inventory at PT XYZ.

Table 5. Risk Analysis and Internal Control Activities for receiving and storing

Risk	Internal Control	P/D/C*)	*Checklist*
Goods received don't match the order.	Check the quantity and type of goods with scales and verify purchase orders and delivery notes.	P	✓
Goods do not meet quality standards.	R&D department inspects goods for quality based on specification.	p	✓
Incomplete or inaccurate receiving documents.	Check the completeness and accuracy of receiving documents before signing.	P	✓
Items lost during the storage process	Stock-taking is carried out on an ongoing basis.	P	✓
Goods receipt is not recorded correctly in the system.	Implement a recording system integrated with data input and verification by authorized personnel.	P	✓
	Warehouse built to inventory storage standards.	P	X
Goods are lost or damaged during storage.	Regular quality check of goods by R&D team.	D	X

*) P = Preventive actions D = Detective actions C= Corrective actions ✓=Effective X=Not Effective

Source: Research Data, 2024

Interviews with key informants revealed that risk prevention measures for inventory loss during the storage process have not been effectively implemented.

"There is no standardized warehouse layout. Given the high mobility of fertilizer inflow and outflow, we arrange the layout to facilitate easy retrieval. In terms of maximum stacking height, we organize it to ensure worker safety and minimize exposure to moisture. If a warehouse leak occurs, we cover the affected supplies with a tarpaulin and report the issue to the plantation manager for immediate action" (R).

"Once fertilizers are stored in a designated warehouse, samples are taken for initial quality testing by the R&D department. If the test results meet the required standards, the fertilizers are approved for field application. However, there is no routine quality inspection by the R&D department to ensure ongoing compliance with specifications" (R).

Based on the identified weaknesses in internal control activities, as outlined in Table 5, this study provides recommendations for improvement, which are presented to management in Table 6.

Table 6. Proposed recommendation to control activities in the receiving and monitoring Cycle

Internal Control	Risk	Recommendation
Warehouse built to inventory storage standards.	Goods are lost or damaged during storage.	Evaluation and Improvement of Warehouse Infrastructure as well as the creation of SOPs regarding storage construction standards, layout, and the addition of warehouse facilities such as racks, warehouses, pallets and pallet jacks.
Regular quality check of goods by R&D team.		Create SOPs with routine check schedules, monitoring systems, and standard procedures.

Source: Research Data, 2024

A significant weakness in internal control over warehouse construction is the absence of a clear Standard Operating Procedure (SOP) to ensure compliance with proper storage standards. Without a well-defined SOP, warehouses may be constructed without meeting the necessary requirements for functionality and safety. This can lead to issues such as improper material selection, inefficient layouts, and inadequate environmental controls. For instance, the lack of guidelines for proper ventilation, temperature and humidity regulation, and adequate lighting can compromise the quality of sensitive supplies, including fertilizers and chemicals. Makatengteng, Jan, and Sumarauw (2019) highlight that excessive stockpiling due to poor warehouse design and layout can degrade inventory quality and result in financial losses. Therefore, implementing formal regulations and SOPs for warehouse construction is essential to mitigate these risks.

Another critical weakness is the inconsistency and infrequency of the R&D team's quality checks on supporting supplies. Irregular inspections increase the risk of damaged or ineffective goods, potentially disrupting operations and reducing productivity. Karim, Nawawi, and Puteh Salin (2018) emphasize that

regular and systematic quality checks are vital for maintaining inventory accuracy and preserving its condition. These checks should involve collaboration between relevant departments, supported by continuous training to ensure employees understand their roles and responsibilities in maintaining quality standards.

The third stage of the inventory process involves issuing supporting supplies under the supervision of the head of the warehouse, who ensures efficient inventory management and availability. This stage encompasses overseeing the receipt, storage, and distribution of essential items such as fertilizers, chemicals, spare parts, and operational equipment. To request supplies, plantation staff must submit a signed Proof of Request and Expenditure of Goods (BPPB) form, approved by the user, Head of Administration, General Manager, and Head of Warehouse. Once verified, warehouse personnel issue the requested goods, record the transaction on the Farm Warehouse Card and Stock Card, and distribute copies of the BPPB accordingly. One copy is provided to the user, another is retained by the warehouse, and the original is forwarded to the Head of Bookkeeping for entry into Oracle. After issuance, fertilizers are processed and applied to oil palm trees in accordance with the dosage specified by the R&D department in the BPPB.

Table 7 presents an analysis of the risks associated with receiving and storing supporting inventory, along with the internal control activities implemented to mitigate these risks.

Table 7. Risk Analysis and Internal Control Activities for outgoing goods

Risk	Internal Control	P/D/C*)	*Checklist*
Discrepancy of goods issued with documents	Verification by the Head of Warehouse and team.	P	✓
	Tiered review and approval at document.	P	✓
Out of stock of goods	Real-time stock monitoring through the system.	P	✓
	Formal procedures for inter-farm stock lending.	P	X
Incorrect data input in the system (Oracle)	Double-check by the Head of Bookkeeping or Administration before input.	P	✓
Goods are damaged due to prolonged storage.	FIFO method of issuing goods.	P	X
Damaged items are not removed from the inventory list promptly.	Damaged items are inspected and approved for removal by management before removal.	P	✓
Goods missing before application to palm trees	Reconcile the expenditure report from the fertilizer warehouse with the fertilizer usage report.	P	X

*) P = Preventive actions D = Detective actions C= Corrective actions ✓=Effective X=Not Effective

Source: Research Data, 2024

Interviews with key informants revealed that no formal procedures exist for inter-farm stock lending.

> "When we borrow supplies, the process is informal. We typically call other farms to check their stock availability, and if they have the items we need, we borrow them and return them once our own stock arrives" (R).

Additionally, internal controls for preventing damage due to prolonged storage are inadequate.

> "For fertilizers, we organize them by type upon arrival. For example, urea fertilizer is placed in the designated urea storage area. We position new shipments at the back to prevent obstruction when additional stock arrives" (R).

Moreover, internal controls to prevent inventory loss before application to oil palm trees are also insufficient.

> "The warehouse clerk prepares a Proof of Request and Release of Goods (BPPB) form, which must be signed by the assistant, Head of Administration, and Head of Warehouse. The BPPB includes details such as the item code, item name, location (afdeling, block number, planting year, and unit code), block area, and dosage. The form is then submitted to the bookkeeper for updating in Oracle. However, once the goods leave the fertilizer warehouse, there is no further monitoring" (R).

Based on the weaknesses in internal control activities identified in Table 7, this study provides recommendations for improvement, which are presented to management in Table 8.

Table 8. Proposed recommendation to Control Activities in the expenditure cycle

Internal Control	Risk	Recommendation
Formal procedures for inter-farm stock lending.	Out of stock of supporting supplies.	Standardize and formalize loan procedures.
FIFO method of issuing goods.	Goods are damaged because they have been stored for too long.	Create an SOP for releasing goods on a FIFO basis, including labeling and dating items in the warehouse.
Reconcile the expenditure report from the fertilizer warehouse with the fertilizer usage report.	Goods missing before application to palm trees	Create an SOP between the "until" warehouse and fertilizer warehouse to record transfers and prevent loss..

Source: Research Data, 2024

A key weakness in the formal procedures for inter-farm stock lending lies in the lack of clarity and rigor in both the lending process and the associated recording and reporting mechanisms. In practice, stock transfers between farms are often conducted informally, without standardized, well-documented procedures. Borrowing arrangements made through verbal communication or personal agreements between warehouse heads or farm managers can lead to inaccurate stock records at both the borrowing and lending locations. This increases the risk of inventory discrepancies, where actual stock levels do not

match recorded figures. Furthermore, the absence of strict formal controls may result in the misuse of authority, as stock could be borrowed for purposes that are unclear or inconsistent with operational needs, leading to inefficiencies and waste. The informal nature of the borrowing process also creates challenges in ensuring the timely return of borrowed stock, with instances where items are not returned or are returned in different quantities or conditions than originally loaned. Such inconsistencies further complicate inventory management and increase the risk of stock imbalances between farms. Lestari and Hermawan (2023) highlight that companies often prioritize daily operations over the implementation of internal controls, exposing them to financial risks. Therefore, formal regulations and standardized operating procedures (SOPs) are necessary to mitigate potential losses and enhance accountability in inter-farm stock lending.

Weaknesses in internal control over the application of the First-In, First-Out (FIFO) method for issuing goods arise from various factors that affect its implementation and consistency in practice. One major issue is the lack of oversight and automation in monitoring stock rotation. In the absence of an integrated inventory management system, goods intended for earlier issuance may be overlooked, particularly in high-volume operations. This problem is exacerbated by the reliance on manual record-keeping by warehouse personnel, increasing the likelihood of errors. Additionally, suboptimal warehouse layouts can contribute to inefficiencies, as newly received stock may be more accessible than older inventory, resulting in prolonged storage of older items and a higher risk of spoilage or deterioration. Weak internal controls in FIFO implementation also impact strategic decision-making in procurement. Without accurate records of stock movements between farms, management struggles to forecast inventory needs effectively. This lack of reliable information can lead to inefficiencies, such as unnecessary purchases despite available stock at other locations or delays in procuring essential supplies. Ultimately, these shortcomings increase operating costs and reduce the overall efficiency of plantation operations. Yansi, Toding, and Mongan (2023) emphasize that adopting a FIFO evaluation approach is critical for preventing inventory losses due to prolonged storage, ensuring that older stock is used before newer arrivals.

A significant weakness in the process of transferring goods from the fertilizer warehouse to the till warehouse and ultimately to the application stage in oil palm plantations is the lack of strict record-keeping and supervision. Once goods are released from the fertilizer warehouse, no formal mechanism exists to systematically track their movement to the application site, creating significant risks of loss or misuse. Furthermore, inaccuracies in recording the quantity of goods applied to oil palm trees can result in discrepancies between the amount of inventory withdrawn from storage and the actual usage in the field. The absence of field supervision further exacerbates this issue, making it difficult to ensure that the application process is controlled and efficient. These weaknesses increase the risk of inventory mismatches, unnecessary wastage of supporting supplies, and higher operational costs for the company. Adi (2023) suggests that implementing reconciliation reports is an effective internal control measure to mitigate the risk of inventory losses and prevent theft, reinforcing accountability in stock management.

CONCLUSION

This study evaluates the internal control system for supporting inventory at PT XYZ, an oil palm plantation company engaged in processing Fresh Fruit Bunches (FFB) into products such as Crude Palm Oil (CPO) and Palm Kernel (PK). PT XYZ has faced significant inventory management challenges, resulting in losses of Rp120 billion in 2020 due to expired and damaged goods caused by inadequate monitoring. To assess the effectiveness of the company's internal controls, this study applies the Internal Control Integrated Framework (COSO), with a particular focus on risk assessment and control activities.

The findings reveal several weaknesses, including the absence of a risk register for systematically identifying and assessing risks, as well as unclear inventory management procedures due to insufficient Standard Operating Procedures (SOPs). These deficiencies contribute to stock discrepancies, increased risk of inventory damage, and vulnerabilities in the manual tendering process, which may lead to collusion. To address these issues, this study recommends the development and implementation of comprehensive SOPs for inventory management, covering warehouse operations, tendering procedures, and stock borrowing. Establishing clear SOPs will enhance transparency, improve efficiency, and minimize the risk of misuse, ensuring that inventory management aligns with the company's operational requirements.

This research specifically examines the internal controls related to supporting inventory, focusing on existing issues within the company. Future studies could expand the scope to analyze inventory management as a whole. Additionally, this study applies only the risk assessment and control activity components of the COSO ICIF framework. Further research could incorporate all five components of the COSO framework to provide a more comprehensive evaluation of internal controls.

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