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# Bridging policy and practice: Implementing inventory accounting standards in Indonesian local governments

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#### ABSTRACT

Inventory accounting plays a critical role in public sector financial management, supporting transparency, asset control, and budget accountability. This study examines the challenges associated with implementing inventory accounting standards in Indonesian local governments, with a particular focus on inventory recording, classification, and governance. Using an interpretive qualitative approach, the research draws on document analysis of national and international accounting standards and focus group discussions with government accounting practitioners. The findings reveal persistent difficulties in integrating financial and inventory systems, notably due to discrepancies in classification codes, incomplete asset handover documentation, and fragmented regulatory frameworks. The transition to digital inventory management remains hindered by limited technical capacity, system fragmentation, and inconsistent application of valuation methods, especially the use of first-in, first-out (FIFO) and first-expired, first-out (FEFO) approaches in the health and procurement sectors. These issues contribute to inefficiencies in financial reporting and elevate audit risks. The study highlights the need for regulatory harmonization, improved interdepartmental coordination, and stronger governance mechanisms to enhance compliance and transparency. The adoption of integrated digital tracking systems and standardized reporting procedures is also recommended to reduce inconsistencies and improve audit readiness. This research contributes to the literature by offering practical insights into regulatory misalignment and proposing strategies to improve inventory management in local government.

#### **KEYWORDS:**

Inventory accounting; accounting standard; public sector; inventory reconciliation

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## INTRODUCTION

Financial reporting serves as a fundamental pillar of accountability in both the public and private sectors. It ensures transparency, supports decision-making, and facilitates financial control. Within this framework, inventory accounting plays a vital role in accurately measuring assets, maintaining cost control, and preventing financial misstatements. In public sector organizations, effective inventory management is especially important for optimizing resource allocation and ensuring compliance with financial regulations. Unlike the private sector, where inventory management is primarily oriented toward profitability and cost efficiency, public sector inventory accounting must align with budgetary constraints, operational priorities, and national financial reporting standards. This alignment reinforces the principles of good governance, particularly in maintaining transparency and accountability in the use of public funds. In Indonesia, the Government Accounting Standards (SAP)-specifically PSAP 05-mandate that inventory be recorded in accordance with budget execution and service delivery needs (Komite Standar Akuntansi Pemerintahan, 2021). Furthermore, the International Public Sector Accounting Standards (IPSAS) emphasizes that public sector financial reporting, including inventory accounting, should facilitate resource allocation and enhance financial accountability (IPSAS, 2023). These principles are increasingly important as governments adopt accrual-based reporting and digital accounting systems to strengthen fiscal discipline and improve service delivery (Cohen et al., 2019).

However, the implementation of inventory accounting standards in Indonesian local governments remains challenging due to discrepancies between national and international regulations, systemic inefficiencies, and governance limitations. In practice, inconsistencies in classification codes across regulatory frameworks and irregularities in the use of financial and asset management systems hinder uniform application. Moreover, valuation methods such as first-in, first-out (FIFO) and first-expired, first-out (FEFO) are inconsistently applied, particularly within the health sector and public procurement systems, which complicates accurate inventory recognition, valuation, and control. These challenges are indicative of deeper institutional barriers and fragmented implementation practices common in transitioning public sector environments (Christiaens et al., 2015).

This study explores the challenges faced by local governments in Indonesia in implementing inventory accounting standards, with particular reference to PSAP 05 and IPSAS 12. It seeks to identify discrepancies in inventory recognition, measurement, and disclosure while assessing practical barriers that hinder accurate financial reporting. Based on these findings, the study proposes recommendations to improve inventory accounting practices and promote better alignment with international standards.

Several studies have investigated inventory accounting challenges, emphasizing differences between global and national standards. Lucchese and Di Carlo (2020) analyzed distinctions between International Accounting Standard (IAS) 2–Inventory, governed by International Financial Reporting Standards (IFRS), and U.S. Generally Accepted Accounting Principles (GAAP), particularly the Financial Accounting Standards Board (FASB) Accounting Standard Codification (ASC) 330 and its Accounting Standard Update (ASU) 2015-11. All of these describe variations in valuation and cost recognition procedures. IFRS prohibits the last-in, first-out (LIFO) method, whereas US GAAP permits it. IFRS uses the lower of cost or net realizable value (LCNRV), whereas US GAAP previously applied the lower of cost or market (LCM) before initiating convergence efforts. Their findings reflect the complexities of aligning inventory accounting frameworks. Similarly, Galdi

and Johnson (2021) examined the influence of regulatory structures on inventory management, showing that Statement of Accounting Standards 151 reduced incentives for overproduction and addressed inventory manipulation tied to earnings benchmarks. Ahmed et al. (2021) emphasized the risks of inventory manipulation in financial reporting and highlighted the need for stronger internal controls.

In the Indonesian context, Mustofa et al. (2021) evaluated the role of inventory accounting information systems in enhancing the accuracy of financial reporting, while Muna et al. (2023) explored the impact of inventory variability on accounting method selection within the industrial sector. Additionally, Maulida and Kurniawan (2023) assessed how liquidity and inventory variability affect profitability, highlighting the financial importance of inventory management. While these studies offer valuable insights, they focus primarily on the private sector. A significant gap remains in understanding the distinct challenges of public sector inventory accounting, particularly within local governments, where inventory is closely linked to budget compliance, regulatory adherence, and public accountability.

Despite extensive research on inventory accounting in the private sector, few studies have addressed the topic in the public sector, particularly within Indonesian local governments. Although prior research has considered valuation methods and regulatory impacts, few have examined the specific implementation challenges of SAP 5 and IPSAS 12 at the local level. As noted by Christiaens et al. (2015), differences in national and international public sector accounting standards often complicate implementation and contribute to fragmentation in financial reporting systems. Divergences between national regulations and international standards have led to inconsistencies in inventory recognition, measurement, and disclosure, resulting in inefficiencies in financial reporting. This study fills that gap by examining real-world issues, including regulatory misalignment, technological limitations, and governance concerns.

Efforts have been made to align Indonesia's public sector financial reporting with international standards through the adoption of SAP 5 and IPSAS-based frameworks. However, practical implementation remains challenging, particularly at the local government level. Many local governments lack adequate infrastructure for inventory management, face limited technical expertise, and operate fragmented reporting systems. As noted by McLeod and Harun (2014) in their discussion of the transition to accrual-based public sector accounting, the lack of staff with adequate accounting skills is a common barrier in developing countries. Additionally, the lack of integration between financial reporting and inventory tracking software frequently results in discrepancies and reconciliation issues. These challenges raise concerns over financial misstatements, delayed reporting, and recurring audit findings, thereby weakening government accountability and transparency (Diamond & Khemani, 2005).

One of the key issues identified in this study is the lack of standardized procedures for asset handovers, such as the Berita Acara Serah Terima (BAST). This deficiency has contributed to repeated audit findings by the Audit Board (BPK), primarily due to misclassification, valuation inconsistencies, and poor asset traceability. Another pressing concern is the slow adoption of digital tracking systems, which could improve accuracy but remain underutilized due to financial limitations and a shortage of technical expertise.

This study explores how discrepancies between SAP 5 and IPSAS 12 affect inventory accounting practices in Indonesian local governments. It investigates the difficulties of applying international standards in local contexts and identifies barriers, including regulatory misalignment, disconnected financial systems, and inadequate staff training. It also considers broader implications

for governmental efficiency, budget allocation, and public sector accountability.

By addressing these issues, this study contributes to public sector accounting in several ways. First, it expands understanding of inventory accounting implementation in local governments—an area that remains underexplored. Second, it provides a comparative analysis of SAP 5 and IPSAS 12, identifying areas where regulatory frameworks diverge. Third, it evaluates the technological and governance constraints that hinder accurate inventory tracking and reconciliation. Finally, the study offers practical recommendations for policymakers and practitioners, including improving compliance mechanisms, enhancing oversight capacity, and fostering greater transparency in inventory management.

The regulatory environment for inventory management in Indonesia continues to evolve. For successful alignment between SAP 5 and IPSAS 12, regulatory refinements must be supported by integrated monitoring systems and stronger coordination between financial and operational functions. In the broader context of developing countries, standard convergence presents both opportunities and challenges. While adopting IPSAS 12 can enhance financial comparability and resource management, local governments must overcome implementation barriers, including legacy systems and limited institutional capacity. Technology will play a central role in modernizing inventory practices. The adoption of barcode scanning, automated tracking tools, and real-time reporting systems holds significant potential to reduce reporting errors, increase efficiency, and improve the accuracy of inventory records, ultimately advancing financial accountability in Indonesia's public sector.

## **RESEARCH METHOD**

This study adopts an interpretive qualitative approach, following the methodology of Pulakanam and Suraweera (2010), to explore the challenges of implementing inventory accounting standards within Indonesian local governments. This approach was chosen for its ability to capture the nuanced and context-specific realities of accounting practice, enabling a deep understanding of how inventory standards are interpreted, applied, and experienced in practice. Interpretive research is particularly valuable in accounting studies as it highlights practitioners' subjective perspectives and identifies practical solutions to implementation challenges (Modell et al., 2008). As noted by Urdari and Tudor (2014), interpretive inquiry—supported by abductive reasoning—bridges theoretical frameworks and empirical realities, making it a powerful tool for theory development grounded in real-world observations.

Taylor (2018) highlighted the importance of theory in qualitative research, emphasizing that theorizing should not begin only after data collection is complete. Instead, an abductive and continuous approach to theorizing can help refine initial theoretical assumptions in response to emerging empirical evidence. Taylor (2018) further stated that the interconnectedness of theory and research allows for greater flexibility and adaptability, making the interpretive approach highly suitable for this study. The current research aligns with Taylor's assertion that a more interactive relationship between theory and empirical findings deepens the understanding of accounting practices.

The study employs two primary qualitative data collection methods: document analysis and interviews conducted through focus group discussions (FGDs). The documentation review involved a detailed analysis of existing inventory-related standards, including Commercial Accounting

Standards from the Financial Accounting Standards Board of the Institute of Indonesia Chartered Accountants, IFRS, Government Accounting Standards from the Government Accounting Standards Committee of Indonesia (Komite Standar Akuntansi Pemerintahan, KSAP) and regulations issued by the FASB (Kieso et al., 2022). Additionally, the Ministry of Home Affairs' Regulations 108/2016 and 90/2019 were examined to assess their impact on inventory classification and reconciliation procedures.

To support the analysis of technical accounting concepts, this study also refers to Intermediate Accounting by Kieso et al. (2022). This authoritative text is used as a conceptual benchmark to clarify inventory recognition, measurement, and valuation issues. In interpretive research, standard-setting literature serves as an essential normative reference to understand how accounting standards are intended to operate. The inclusion of case illustrations from Kieso et al. (2022) supports the comparison between textbook principles and the practical inconsistencies observed in the field, thereby bridging the gap between theory and practice in public sector accounting.

For the interview method, government accounting practitioners, financial officers, auditors, and policy advisors from both central and local governments were selected as informants. These participants were chosen based on their direct involvement in financial reporting, inventory management, and compliance oversight. Interviews were conducted in the form of focus group discussions (FGDs), moderated by the researcher, which enabled participants to share insights on the practical implementation of inventory standards, reconciliation challenges, and audit-related concerns. Transcripts from these discussions were analyzed to identify recurring themes. To ensure robust interpretation of the interview and FGD results, the study employed cross-informant comparisons and interpretive triangulation, allowing a common understanding to emerge across different local contexts.

Two FGDs were conducted in 2023 in distinct regions to ensure contextual variation. The first event was held in Yogyakarta on Wednesday, November 8, 2023, and involved 13 participants from local governments across the Special Region of Yogyakarta (DIY). The second was held in South Tangerang, Friday, November 10, 2023, with 10 participants from Banten Province. The selection of these sites allowed the study to capture a range of administrative experiences while maintaining consistency due to the uniform national regulatory framework applied across all local governments. Common themes emerged across both FGDs, indicating a degree of saturation and reinforcing the reliability of the findings.

To support systematic analysis, FGD responses were organized using structured worksheets based on a cross-case analysis framework (Miles et al., 2019). This enabled the identification of recurring patterns, inconsistencies, and localized deviations in inventory accounting practices across regional governments (Paré & Elam, 1997). The study also incorporated previous BPK audit findings, particularly in cases involving mismatched inventory classifications and unrecorded asset handovers. By integrating qualitative insights from practitioners with regulatory analysis, the study provides a comprehensive understanding of the barriers to effective inventory accounting in Indonesia's public sector. The research not only identifies challenges, such as misalignment of standards, governance weaknesses, and underutilization of technology, but also offers practical recommendations for improving standardization, oversight, and the implementation of digital systems in local government accounting. The research framework guiding this study is illustrated in Figure 1.



Figure 1. Research Framework

## **RESULT AND DISCUSSION**

#### Understanding and Measuring Inventory in Financial Accounting

This section summarizes key insights from Intermediate Accounting by Kieso et al. (2022) to illustrate the complexities of inventory recognition and measurement in financial accounting. Accurate inventory accounting is crucial, as errors in valuation or recognition can significantly distort key financial indicators such as net income and total assets. The following illustrative cases highlight common challenges.

Case 1: Cost Allocation in Promotional Sales. A chocolate manufacturer offers a promotion where customers receive one free chocolate bar for every bar purchased. With a selling price of  $\mathfrak{C}_3$  and a production cost of  $\mathfrak{C}_1$  per bar, the accounting question is whether the cost of goods sold (COGS) should reflect only the cost of the sold item ( $\mathfrak{C}_1$ ) or include the cost of the promotional item ( $\mathfrak{C}_2$  total). The correct treatment is to allocate the cost of the free bar into inventory and recognize it as COGS, thus reflecting the actual outflow of resources associated with each sale.

Case 2: Inventory Write-Downs Due to Market Fluctuations. A clothing retailer purchases jackets at  $\bigcirc$ 50 each, expecting to sell them for  $\bigcirc$ 80. However, due to changing fashion trends, the market price drops, and the jackets can now only be sold for  $\bigcirc$ 40. The company must apply the LCNRV rule, reducing the inventory valuation accordingly and recognizing a loss.

Case 3: Periodic vs. Perpetual inventory systems. A supermarket chain employs a periodic inventory system, updating inventory records only at fixed intervals. This contrasts with a perpetual inventory system, which records each transaction as it occurs in real time. The periodic system may lead to inaccuracies in reported inventory levels and delays in detecting discrepancies, thereby reducing the reliability of financial reports.

These cases underscore the importance of applying appropriate accounting standards to ensure consistent and accurate inventory reporting. Inconsistent valuation methods, system limitations, or misapplication of standards can lead to financial misstatements, undermining transparency and accountability. A thorough understanding of these foundational concepts is essential for evaluating how inventory accounting standards, such as SAP 5 and IPSAS 12, are implemented in the public sector context, where accountability to the public is paramount.

#### **Cost Flow Assumptions in Inventory Accounting**

Inventory cost flow assumptions play a critical role in financial reporting, affecting both income statements and balance sheets. The three most commonly applied methods in inventory accounting are FIFO, LIFO, and the weighted average cost (WAC) method. Although these approaches are well-established in academic literature, their practical application in organizational settings, particularly in the public sector, presents considerable challenges.

Under FIFO, the oldest inventory costs are expensed first, so the ending inventory reflects the most recent costs. This method offers a better representation of current inventory values, particularly during periods of rising prices. However, its implementation can be problematic in public sector organizations and industries with bulk storage or limited inventory tracking infrastructure, where monitoring specific inventory flows is impractical.

LIFO, which assumes that the most recently acquired inventory is expensed first, can result in lower taxable income during inflationary periods by matching recent costs with current revenues. However, it is prohibited under IFRS, rendering it inapplicable for entities that adhere to international standards. Despite this, LIFO continues to be used in some contexts, particularly in jurisdictions that follow U.S. GAAP, and by organizations with stable inventory turnover seeking tax advantages.

The WAC method calculates inventory cost by averaging the cost of all available units during a given period. It helps smooth out price fluctuations and is especially useful for organizations managing large volumes of low-cost, interchangeable items. Due to its simplicity and lower administrative burden, WAC is widely adopted in public sector institutions, where systems for tracking individual inventory layers may be limited.

In practice, many government agencies and smaller firms find these textbook cost flow assumptions difficult to implement due to limited resources, manual tracking, and the complexity of managing multiple cost layers. As noted by a participant in the South Tangerang Focus Group Discussion (FGD), "*In theory, we are supposed to follow FIFO, but in reality, we just record inventory as it comes in and goes out. We do not have the system to track specific cost layers*" (Accounting Professional, FGD, 2023). This illustrates the gap between theoretical standards and operational capabilities in local government settings.

Moreover, regulatory frameworks sometimes impose valuation assumptions that do not align with actual inventory movement. For example, SAP 5 in Indonesia mandates specific cost flow methods that may not accurately reflect operational realities, resulting in reporting inconsistencies and audit challenges. These discrepancies highlight the disconnect between regulatory intent and implementation capacity, particularly in decentralized administrative environments. By examining these cost flow assumptions within both theoretical and practical contexts, this section establishes the foundation for analyzing inventory accounting standards across various frameworks, including IFRS, US GAAP, IPSAS, and SAP. Understanding the limitations of applying these models in practice is essential for evaluating the relevance, feasibility, and alignment of inventory standards in public sector financial reporting.

## Standards for Inventory Accounting According to FASB and Australian Accounting Standards Board (AASB)

Inventory accounting standards under FASB and IFRS provide guidelines for recognizing, measuring, and reporting inventory in financial statements. While the two frameworks are grounded in similar accounting principles, they diverge in important areas, particularly with respect

to valuation methods, cost flow assumptions, and disclosure requirements. FASB, through ASC 330, outlines inventory treatment under U.S. GAAP. A notable feature of U.S. GAAP is its continued allowance of the LIFO method, which assumes that the most recently acquired inventory is expensed first. LIFO can significantly impact taxable income and financial reporting, particularly during inflationary periods, by reducing reported profits. However, LIFO generally does not reflect the actual physical flow of inventory in most businesses.

ASC 330 serves as the core framework for inventory accounting under US GAAP, consolidating authoritative guidance. Within this framework, ASU 2015-11 introduced a key revision to inventory measurement (FASB, 2015). This update requires entities, except those using the LIFO method or the retail inventory method, to value inventory at the LCNRV. This revision simplified the previous rule, which involved assessing inventory at the LCM, thereby improving consistency in valuation. ASU 2015-11 does not eliminate or modify the allowance for LIFO under U.S. GAAP. LIFO remains an accepted inventory valuation method. The update primarily affects entities that do not use the LIFO or retail method, requiring them to adopt the lower of cost and net realizable value (NRV) approach. Companies that continue to use LIFO or the retail method still apply the previous LCM rule.

In contrast, IFRS, under IAS 2 (IFRS, 2024), prohibits the use of LIFO, stating that it can distort financial performance and conflict with the principle of fair value measurement. IFRS permits only the FIFO and WAC methods, ensuring consistency in inventory valuation across jurisdictions. Another significant difference lies in inventory write-downs: if inventory falls below cost, IFRS requires it to be written down to NRV, and subsequent recoveries in value cannot be reversed. In comparison, U.S. GAAP permits the reversal of prior write-downs under certain conditions, offering companies more flexibility in financial reporting.

The AASB aligns with IFRS through AASB 102–Inventories. Like IFRS, AASB 102 mandates the use of FIFO, WAC, and the specific identification of cost for unique or high-value inventory items, ensuring inventory valuation reflects actual economic conditions (AASB, 2015). AASB explicitly prohibits LIFO to maintain alignment with IFRS, as LIFO may distort valuations, particularly during inflation. Excluding LIFO helps financial statements more accurately reflect inventory values and discourages the artificial deferral of profit based on inventory costing.

Additionally, AASB 102 requires entities to reassess inventory values at each reporting period to ensure they are not recorded above NRV. If the carrying value exceeds NRV, a write-down must be recognized as an impairment loss in the income statement. Unlike IFRS, however, AASB permits the reversal of previous impairments if economic conditions improve, enabling more accurate valuation over time.

AASB 102 also emphasizes transparency by requiring disclosures of impairment amounts, their causes, and the financial impact of these impairments. This disclosure framework ensures stakeholders have a clear understanding of inventory valuation decisions, thereby reinforcing accountability in financial reporting. By aligning with IFRS while allowing some flexibility in impairment reversals, AASB 102 balances conservative valuation principles and reporting accuracy.

#### Standards for Inventory Accounting According to IPSAS and SAP

Inventory accounting in the public sector is guided by principles that differ significantly from those in the private sector, reflecting the sector's focus on service delivery rather than profit generation. Unlike businesses that manage inventory for resale or revenue maximization, governments maintain inventory primarily to support public programs and fulfill societal obligations. To address these distinct objectives, both IPSAS and SAP offer inventory management frameworks specifically tailored to the needs of public entities.

IPSAS 12 – Inventories (IPSAS, 2024a) closely aligns with IAS 2, requiring inventories to be measured at the LCNRV for goods held for sale. However, IPSAS 12 extends this guidance by recognizing that many public sector inventories are held for distribution at no cost or for a nominal fee, such as medical supplies, educational materials, and emergency aid. In these cases, IPSAS mandates that inventory be measured at the lower of cost or current replacement cost, rather than fair market value, to better reflect the non-commercial and service-oriented nature of public sector inventory. This distinction ensures that financial reporting in the public sector remains aligned with its operational realities and social accountability objectives.

IPSAS 12 is supplemented by other relevant standards, including IPSAS 5 (IPSAS, 2024b), which specifies limited conditions under which borrowing costs may be capitalized as part of inventory valuation. In public sector service delivery, inventory costs are typically calculated based on the production costs associated with rendering services. Costs unrelated to service provision are excluded from inventory valuation and are instead recognized as expenses when incurred. For example, agricultural products harvested from biological assets are measured at fair value less costs to sell, in accordance with IPSAS 27.

IPSAS 12 also permits the use of cost estimation methods such as standard costing and the retail method, provided they reasonably approximate actual costs. In cases of non-exchange transactions, such as donations or grants, inventory is valued at its fair value as of the acquisition date. Moreover, IPSAS allows the application of specific cost formulas: the FIFO method is recommended for inventories sold or used in the order of acquisition. In contrast, the weighted average cost method is used when inventory costs are accumulated over a period of time. These flexible provisions support more accurate and context-sensitive inventory valuation, acknowledging the diversity of inventory types and operational models in the public sector.

In Indonesia, SAP 5 regulates inventory accounting for local governments. While it incorporates several core principles of IPSAS 12, it also includes localized adaptations to align with national regulations and administrative practices. A key difference is SAP 5's allowance for budget-based inventory recognition, wherein government inventory expenditures may be recorded as costs at the time of purchase rather than as assets, depending on funding sources and classification policies.

SAP 5, in effect since 2010, is the prevailing inventory accounting standard for both central and regional government entities in Indonesia (Government Accounting Standards Committee, 2020). Notably, SAP 5 excludes state- and region-owned enterprises, focusing solely on inventories managed by public sector administrative units. It defines inventory as any goods or supplies used in government operations, goods in production, or goods intended for sale or public distribution. This definition encompasses raw materials, spare parts, and semi-finished goods, as well as strategic reserves and biological assets, such as animals and plants held for future distribution or sale. Items still in production, such as semi-finished agricultural tools, are also recognized as inventory.

Globally, SAP 5 classifies inventory into the following categories, as defined in Paragraph 9 of PSAP 5 (1) Consumable goods; (2) Ammunition; (3) Maintenance materials; (4) Spare parts; (5) Inventory for strategic or reserve purposes; (6) Excise stamps and levies; (7) Raw materials; (8) Goods in process or semi-finished goods; (9) Land and buildings for sale or public distribution; and (10) Animals and plants for sale or public distribution.

Another significant challenge in the implementation of SAP 5 is the absence of standardized inventory tracking systems across regional governments. Some institutions still rely on manual recording, leading to discrepancies between actual stock levels and reported inventory figures. While IPSAS encourages the adoption of modern, technology-driven inventory management systems to improve transparency and control, local governments in Indonesia often face budgetary and capacity constraints that limit their ability to invest in and implement such systems comprehensively.

"According to the Standard Account Chart as stipulated by the Director General of Treasury Decision Number Kep-331 of 2021, Inventory accounts are categorized into five types: Inventory for Operational Materials, Inventory for Public Distribution, Inventory for Production Processes, Inventory for Social Assistance, and Other Inventory Materials. However, the BMN codification already includes a complete mapping to codes based on these Standard Account Chart segments. Within this segment, what is classified as Supplies generally falls under the Inventory for Operational Materials category (Government Accountant, Focus Group Discussion).

This classification highlights how government inventory systems are structured around budgetary regulations rather than profitability, in contrast to private companies. Unlike businesses that prioritize cost efficiency and profit margins, public sector inventory tracking must adhere to fund allocation rules to meet financial reporting requirements and operational mandates. This approach emphasizes the need to categorize inventory in a way that promotes financial transparency and upholds regulatory compliance within government institutions, where accountability and adherence are paramount.

Improving inventory accounting in the public sector requires a multifaceted approach. One key priority is the closer alignment of SAP 5 with IPSAS 12, which would enhance the comparability and consistency of financial reporting across jurisdictions and bring national standards more in line with international best practices. Additionally, the development of standardized digital inventory tracking systems is crucial for enhancing data accuracy, facilitating real-time monitoring, and streamlining reconciliation processes. Equally important is the provision of training and capacity-building programs for government accountants and financial personnel. As inventory standards evolve, equipping public sector staff with the necessary technical knowledge and implementation skills is vital for ensuring compliance and sustaining reform efforts. By strengthening these key areas, governments can improve transparency, enhance resource efficiency, and align more effectively with international best practices.

#### **Integrated Analysis of FGD Results**

The implementation of inventory accounting standards in local governments faces numerous challenges stemming from regulatory inconsistencies, technological limitations, and administrative inefficiencies. To better understand these issues, FGDs were conducted in Yogyakarta and Tangerang, involving government accounting practitioners, financial officers, auditors, procurement specialists, and policy advisors. These discussions provided first-hand insights into the practical difficulties of reconciling financial statements with inventory records, navigating overlapping regulations, and adopting digital inventory management solutions. As one participant from the Yogyakarta FGD remarked:

"Maybe so, but until now we can still manage it. Why? Basically, we definitely use the item codes that are in the Ministry of Home Affairs Regulation (Permendagri) Number 108 or 90. However, in our application, the details are different. So, when SKPD [regional work unit] friends input, for example, the item code, inventory sold, and delivered, it has derivatives such as buildings and roads. In our application, users usually add descriptions, such as PSU

[infrastructure, facilities, and public utilities], road, Tangerang city area, village, and so on. We are actually very detailed."

This statement illustrates how even well-structured regulatory frameworks, such as those outlined in the Ministry of Home Affairs Regulations Number 108/2016 and Number 90/2019, face practical challenges in implementation due to varying interpretations and technical limitations at the local level. While the codification offers clarity on item classification, local governments often need to adapt descriptions and data structures to satisfy audit requirements and reflect operational realities. These findings are consistent with earlier research that highlights how public sector accounting reforms, especially in developing contexts, often encounter difficulties during implementation due to the misalignment between formal regulations and institutional capacity (Brusca et al., 2013).

One significant issue raised during the FGDs was the difficulty of navigating inconsistencies in inventory codification between the Ministry of Home Affairs Regulations Number 108/2016 and Number 90/2019. Both sets of regulations govern the classification and coding of regional government assets, including inventories, but differ in their structural frameworks. Participants highlighted that this lack of harmonization leads to classification discrepancies and complicates financial reporting, inventory tracking, and inter-departmental reconciliation. As one participant noted:

"The way inventory data is entered by different agencies is not yet fully integrated into our system. Take, for example, the Family Planning Office (Dinas KB). This office typically receives inventory items from the central government and distributes them to community health centers (Puskesmas). The challenge arises when we record these transactions—if we log them at each stage, the inventory appears twice. The Family Planning Office records it upon receipt, then the Health Office logs it again when receiving it, and finally, the health centers also record it as incoming inventory. When these transactions are consolidated, they appear as multiple receipts instead of a single movement, making it seem like double-counting. Our system currently does not account for this, and resolving this issue remains a challenge."

This statement illustrates the challenges faced by local government departments when attempting to integrate inventory records across multiple entities. Discrepancies arise because different departments apply separate regulations and coding structures, resulting in duplicated transaction entries. These inconsistencies ultimately delay financial reporting and increase the risk of audit findings, as reflected in the informant's concern about duplicate entries during the consolidation process. Such challenges have been documented in other public sector contexts, where the misalignment of regulatory frameworks and fragmented information systems has hindered effective asset management and reporting (Cohen et al., 2019).

The Government Asset Information System (Sistem Informasi Aset Pemerintah or SIAP), which is used to track government assets and inventories, continues to operate under the framework established by the Ministry of Home Affairs Regulation Number 108/2016, despite the issuance of Regulation Number 90/2019. Although the general classification structure remains largely consistent, differences in coding methodologies and prefix formats between the two regulations have led to frequent mismatches between financial reports and inventory records during reconciliation processes. As one informant explained:

"Up to now, we have managed to work around this issue because, fundamentally, we rely on item codes from either Permendagri 108 or Permendagri 90. However, in our application, the level of detail is different. For instance, when SKPD staff enter an item code, such as inventory for sale and delivery, there are subcategories like buildings and roads. In our system, users often add additional descriptions such as PSU, road, Tangerang city area, and specific villages. We have become highly detailed in this regard. From our experience, when an asset is recorded as a single package, such as a PSU road project in Banten Province, auditors later request details regarding specific sections. They ask for documentation, including BAST, to verify each segment. This requirement has forced our application to be highly rigid to meet audit expectations."

This account illustrates how the SIAP system, while still compliant with Permendagri 108, must accommodate a high level of detail, particularly for non-consumable and used goods, often requiring manual modifications to align with updated regulatory expectations. As regulatory codifications evolve, the system's rigidity and lack of full integration with new classification standards introduce inconsistencies across departments, delaying reconciliation processes. These discrepancies also highlight a broader issue of regulatory adaptation and integration, wherein government institutions struggle to keep pace with the evolving accounting standards. Several participants suggested that establishing a centralized framework to ensure the consistent application of updated classifications could reduce confusion stemming from divergent codification systems.

Another key challenge identified in the discussions was the weakness of local government inventory management practices, particularly in maintaining accurate handover documentation and reliable financial reporting. BPK has identified multiple deficiencies in the management of inventory at the regional level. A recurring audit finding involves the absence of formal handover reports (BAST) for physical assets, which undermines the verifiability and traceability of government inventories. As one informant explained:

"This issue occurs when physical assets, such as those from health center renovations and clinic constructions, are handed over without the necessary official documentation. Similarly, items provided by the central government sometimes arrive without a BAST. Without proper documentation, it becomes difficult to track accountability for these assets, creating serious issues during audits."

The absence of official documentation complicates the verification process, increases the likelihood of financial misstatements, and elevates the risk of audit findings. Projects involving public health infrastructure, such as clinics and health center renovations, are especially prone to unrecorded transactions, which undermine asset accountability and impair the reliability of regional financial reporting. These issues reflect broader structural challenges in public sector asset management, where fragmented administrative responsibilities and weak internal controls often hinder reform implementation (Cohen et al., 2019).

Participants explained that these administrative lapses are not always deliberate but often stem from a lack of procedural enforcement and weak monitoring mechanisms. Government agencies occasionally receive assets from the central government without the required documentation, making it difficult to accurately reflect inventory changes in financial reports. Although this issue has been repeatedly flagged in audit reports, it remains unresolved in many regions due to systemic and operational limitations. As one financial officer from Tangerang admitted,

"So the inventory figures inputted by the departments cannot yet be integrated into our system. For example, the Family Planning Department usually receives inventory from the central government. It is received by the Family Planning Department and then distributed to health centers. The problem is when we record it, it gets double-recorded. Here, it is recorded, there it is not. When consolidated, it shows as two entries. This is the issue we need to solve. The Family Planning Department receives it, then sent to the Health Department, recorded again, then distributed to health centers, showing multiple entries when consolidated. It is just a transit, but the system cannot yet handle it."

Another pressing concern raised by financial officers was the mismatch between financial reports and inventory management applications. The lack of integration among software systems used by various departments often results in discrepancies in inventory valuation and difficulties with reconciliation. One financial officer from Tangerang described how project-based procurement planning sometimes causes budgeting mismatches, making accurate inventory tracking more difficult. Another informant clarified that budgetary misalignment with project needs is a separate issue. The suboptimal integration of application systems continues to hinder effective inventory management.

A notable challenge in adopting standardized accounting methods, according to the same informant, is the scheduled transition to the FIFO valuation method, which is set to be implemented in 2024 (FGD conducted in 2023). Although FIFO is considered a more reliable valuation approach under IPSAS, the shift from the previously used average cost method poses administrative and operational difficulties for many regional governments. Several participants emphasized that technical capacity to implement FIFO remains inconsistent across institutions. In the absence of adequate training and guidance, these differences may result in valuation inconsistencies, further complicating inventory reconciliation and audit processes. Similar concerns have been identified in international studies, which show that transitioning to international public sector accounting standards often exposes gaps in institutional readiness and technical expertise (Christiaens et al., 2010).

A recurring inventory issue highlighted by informants was the lack of coordination between inventory officers and procurement units within SKPDs (Satuan Kerja Perangkat Daerah). As one participant noted: "Goods movement is not always well monitored due to missing links between procurement and inventory officers, leading to discrepancies in stock records." This observation reflects the need for stronger internal coordination within SKPDs to manage diverse inventory categories and ensure the reliability of monitoring mechanisms.

Another challenge identified during the discussions was the classification of grant items as inventory, which has created confusion in financial reporting and system integration. An informant from South Tangerang City explained:

"We face difficulties in categorizing grant items because the account codes do not properly match. In the SIPB [Goods Information Management System] system, grant items are recorded in inventory for tracking purposes, even if they are immediately released afterward."

This mismatch affects inventory documentation and highlights the need for better integration of grant classification practices into public sector inventory management systems.

A similar concern is raised regarding inventory received from the central government, which is sometimes recorded at a nominal value of one rupiah due to the absence of proper valuation or BAST documentation. One participant noted that the Health Department struggled with such inventory, as these items often arrive without proper valuation or BAST documentation, complicating accurate accounting. The use of minimal valuations not only distorts the accuracy of financial statements but also raises red flags for audit transparency and regulatory compliance. Addressing these classification inconsistencies is essential to improving the accuracy of financial reporting and ensuring adherence to standardized inventory accounting principles.

Technology increasingly plays a pivotal role in inventory tracking and financial reporting at the local government level. During FGD, an informant from the Regional Office of the Financial Management Agency (BPKAD) in Yogyakarta shared concerns about the limitations of current digital tools in inventory management. Specifically, the DIY provincial government operates a standalone inventory application that is not fully integrated with its financial accounting system. This system predates the mandated Regional Government Information System (SIPD) under the Ministry of Home Affairs. Although SIPD is now the standard, it currently lacks comprehensive support for inventory functions, requiring frequent manual reconciliations between inventory records and State Property (BMN) financial entries.

These applications—developed internally with external vendor support—are used across several departments, yet the absence of seamless integration hinders real-time accuracy and complicates audit processes. This fragmented digital environment aligns with global research findings, which highlight that fragmented financial management information systems platforms and limited interoperability often constrain the effectiveness of financial reforms in developing countries' public sectors (Diamond & Khemani, 2005).

Inventory consolidation in local government agencies is primarily conducted through quarterly reconciliation. To support this process, departments assign dedicated inventory personnel, many of whom possess formal training in accounting and financial management from institutions such as the State Finance Polytechnic College of Accountancy. Additionally, each SKPD designates an asset manager responsible for managing and updating inventory records at the unit level.

The inventory application operates on online servers, requiring technical support and system maintenance from the Communication and Information Department to ensure stability and performance. The system has been developed in compliance with the Ministry of Home Affairs Regulation Number 47/2021, which governs the latest standards for reporting and reconciliation practices to meet current administrative and audit requirements. Year-end evaluations are conducted to verify the accuracy of inventory data; however, ongoing challenges include system security vulnerabilities and limited user understanding of proper data input procedures. These issues highlight the importance of coordinated collaboration among asset managers, accounting teams, and IT departments to maintain accurate records and ensure smooth system functionality.

In Sleman Regency, for example, an informant from the Regional Financial and Asset Management Agency (BPKAD) reported that their inventory application continues to operate independently from the asset management system. To address this gap, monthly reconciliations are conducted—typically before the 10th of each month—to align inventory and expenditure records through coordination between asset managers and bookkeepers.

Despite such practices, practitioners across multiple regions emphasized that limited funding for digitalization hinders the full implementation of integrated financial and inventory systems. Although Enterprise Resource Planning (ERP) systems have been proposed as potential solutions to synchronize inventory and financial data in real time, their deployment remains financially unfeasible without increased support from central government agencies. Without sustained investment in system integration and capacity building, and without effective coordination among key actors, local governments will continue to face inconsistencies in inventory records and reconciliation challenges.

In the Health Department of Bantul District, participants explained that the FEFO method is used for managing medications, whereas FIFO is applied to other inventory categories. However, challenges arise when justifying FEFO in financial reporting, as the BPK requires clear documentation supporting its use. Another challenge involves the valuation of inventory based on market prices from e-catalogs rather than the actual values recorded in the BAST values, which complicates inventory valuation. Governance challenges and overlapping regulations also emerged as key themes throughout the discussions. Participants noted that many inventory accounting problems are exacerbated by unclear role definitions, fragmented authority, and a lack of coordination across departments. Weak collaboration between procurement, finance, and asset management units contributes to inefficiencies in tracking, recording, and reporting inventory. These issues often result in audit findings related to misreporting, unaccounted assets, and regulatory non-compliance. One informant remarked that without stronger interdepartmental coordination, such errors are likely to persist. This reflects broader trends in public sector financial management, where fragmented structures and poor communication hinder the implementation of robust internal controls (Cohen et al., 2019).

In Lebak Regency, BPK found that some inventory designated for third-party or community distribution had not been formally handed over. One official noted that some inventory in the Ministry of Public Works and Public Housing remained pending for handover, causing unnecessary delays and raising audit concerns. This finding underscores the importance of enforcing handover documentation protocols (BAST) and improving supervisory mechanisms for inventory transfers.

A significant governance challenge in inventory management also involves the adjustment of inventory values due to periodic market price fluctuations, particularly for food-related commodities. An informant from the Food Security Agency explained that rice prices are periodically adjusted through formal reports, yet the fixed procurement records and updated distribution valuations often do not align. This misalignment complicates financial reconciliation and affects the accuracy of inventory valuations. The informant shared the following insight:

"Then there is also an issue related to rice inventory, Sir. The rice managed by the Food Security Agency (Bulog) undergoes a price change process at certain periods, with adjustments made to reflect the latest conditions. However, in terms of procurement and expenditure, the purchasing process has already been completed, for example, by the Food Security Agency, with stock stored in Bulog. During its distribution, if market conditions cause price changes, a price adjustment report is issued. The difficulty arises when the new price does not match the standard unit, such as per kilogram. To address this, we try to accommodate these changes within the system by making adjustments. However, when the rice is eventually distributed, it must still be recorded per kilogram or according to the required distribution unit. By the end of the period, there is a possibility that the total recorded rice stock does not align exactly per kilogram, potentially causing discrepancies. This issue became particularly evident in 2023. We are still looking for ways to resolve it effectively, and further input would be valuable for handling such cases."

The FGDs conducted in Yogyakarta and Tangerang offered a comprehensive view of the systemic challenges facing local government inventory management. The findings underscore the urgent need for regulatory harmonization, more robust digital solutions, and enhanced governance mechanisms to improve the accuracy, consistency, and accountability of inventory accounting at the local level.

## CONCLUSION

Inventory accounting in Indonesian local governments remains complex, largely due to inconsistencies in regulatory frameworks, valuation methodologies, and classification standards. The coexistence of SAP 5 and IPSAS 12 has hindered uniform inventory measurement, as SAP 5 lacks the detailed operational guidance needed for accurate valuation and reporting. Moreover, the use of divergent cost flow assumptions—such as FIFO, LIFO, and WAC—further complicates

inventory tracking, reconciliation, and financial consistency. These discrepancies have adversely affected the reliability, transparency, and auditability of financial reports.

This study also highlights the challenges of integrating international inventory standards, including IAS 2, ASC 330, ASU 2015-11, and AASB 102, into local government accounting practices. Variations in valuation principles, particularly between LCNRV and LCM, contribute to fragmentation in inventory reporting. Combined with the continued reliance on manual systems in many regions, this has diminished the accuracy of financial statements and increased the risk of misstatements.

A key finding is the lack of integration between financial and inventory systems, which generates significant reconciliation burdens and operational inefficiencies. FGDs revealed persistent issues such as classification mismatches, outdated recording practices, and insufficient documentation, especially the absence of BASTs. These shortcomings contribute to recurring audit findings and hinder efforts to track asset movement and ownership accurately. Without a unified digital framework, local governments face ongoing challenges in maintaining inventory accountability. These systemic failures emphasize the urgent need for integrated information systems and standardized procedures in inventory management at the local government level.

Beyond technical and regulatory challenges, technological limitations remain a major barrier to effective inventory management. The lack of investment in digital tracking systems, barcode scanning, and automated reconciliation tools has left local governments reliant on outdated systems that fall short of modern accounting standards. Strengthening interdepartmental coordination and expanding training programs for accounting personnel are essential for ensuring consistent implementation of inventory policies and valuation procedures.

To address these challenges, efforts must prioritize regulatory harmonization, system integration, and technological advancement. Aligning SAP 5 with IPSAS 12, simplifying classification codes, and implementing standardized digital tracking mechanisms would improve the efficiency and accuracy of public sector inventory accounting. Additionally, training initiatives for government accountants are vital for ensuring adherence to best practices in financial reconciliation and valuation. By enacting these reforms, Indonesian local governments can enhance accountability, improve transparency, and align more closely with international standards in inventory management, ultimately reducing audit risks and improving the reliability of financial reporting.

However, this study has several limitations. Data were collected through FGDs in only two provinces, potentially limiting the generalizability of the findings to all Indonesian local governments. Furthermore, while the study identifies systemic issues and proposes institutional reforms, it does not assess the impact of those reforms over time. Future research could expand the geographic scope adopt longitudinal methods, and include quantitative analyses to measure inventory accuracy, audit outcomes, or budgetary performance over time. Such approaches would complement the qualitative insights presented here and offer a more comprehensive understanding of public sector inventory reform.

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