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# THE IMPACT OF BUSINESS PROCESS MODELING AND NOTATION (BPMN) ON ACCOUNTING INFORMATION SYSTEM DESIGN: A CASE STUDY OF AN INDONESIAN VILLAGE-OWNED ENTERPRISE

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**Abstract**
This study aims to analyze and design an AIS using the Business Process Model and Notation (BPMN) to improve the effectiveness and efficiency of BUMDes Pulotondo's financial reports. The approach used in this design is Research and Development using the ADDIE model. By analyzing and designing financial applications using BPMN, BUMDes Pulotondo is expected to be able to improve efficiency and transparency in its financial management. The results of the study show that the results of the analysis using the fishbone diagram can create an application design with two levels of system users, namely administrators and staff. Using BPMN shows the business process flow of financial reports, namely the Profit and Loss Report, Statement of Changes in Equity, Cash Flow Report, and Balance Sheet Report. This research provides an original contribution by integrating BPMN modeling with the ADDIE development framework to design an Accounting Information System (AIS) specifically designed for Village-Owned Enterprises (BUMDes). In contrast to previous studies that often apply generic financial systems, this study discusses the unique operational characteristics of BUMDes Pulotondo. The use of BPMN provides clear and standardized visualization of financial processes, while the implementation of user-level access (administrator and staff) increases the security and usability of the system.

Keywords: Business Process Model and Notation (BPMN), Accounting Information System, Financial Reports, BUMDes

## 1. Introduction

Village-Owned Enterprises (BUMDes), which is a leading program in empowering the village economy, plays an important role in driving the wheels of the village economy through independent management of village assets and potential, thereby reducing dependence on external funding sources and encouraging village economic independence. The Indonesian government has implemented the Village Law, namely Law Number 6 of 2014 concerning villages, as a step to accelerate national development and address development disparities, especially at the village level (Pramitari et al., 2020). The Ministry of Villages has an ambitious target for 2028, namely the existence of BUMDes in every village throughout Indonesia, which signifies the government's commitment to driving the local economy and strengthening development at the village level. Information systems, especially accounting information systems (AIS), can provide accurate and precise information about the financial condition of a business (Aryanti et al., 2020). AIS is a crucial foundation in managing the finances of an organization. Designed to identify, measure, and report economic information accurately and reliably, AIS processes this data into financial reports that are delivered to various stakeholders, such as investors, creditors, and management (Firdaus et al., 2018).

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AIS is a crucial computerized element in an organization, increasing the complexity, accuracy, and precision of transactions, and experiencing rapid development in the public sector (Mahendra et al., 2020). Significantly, financial information for BUMDes is reflected in its extensive use as a basis for evaluating business performance, preparing future business plans, and consideration factors in making other important decisions (Yulianto et al., 2021). Therefore, the use of the latest technology systems is needed so that BUMDes can be effective in carrying out these functions, such as AIS, which can assist in collecting, processing, and presenting transaction data to obtain clear and easy-to-understand information (Riswanto et al., 2017).

BUMDes Pulotondo in Tulungagung Regency is one of the village government partnerships in implementing economic development plans. It is hoped that with good and professional management, this BUMDes can become a driving force for an independent village economy. This study aims to support the development process of BUMDes Pulotondo partner villages in Ngunut District, Tulungagung Regency.

According to the results of research conducted by Titiokan et al., (2020) it was concluded that due to low work results and lack of management ability to achieve efficiency, effectiveness, economy, responsiveness, and community empowerment, BUMDes management performance is still not optimal. The causes of this problem include the use of local resources that are not optimal and minimal community participation in management. On the other hand, research conducted by Wijaya et al., (2022) stated that most BUMDes still have not maximized their management because they still rely on Microsoft Excel, a tool used to enter and present financial information related to transactions that can result in errors in matching transaction records when preparing financial reports, so that there can be a mismatch between the cash book and transaction data. Meanwhile, the results of research conducted by Asana et al., (2020) concluded that the design of the BUMDes accounting information system, which consists of several facilities. This includes basic data management (users, goods, and suppliers), sales and purchase transactions, general journals, sales and purchase journals, balance sheets, and reporting. On the other hand, research conducted by Supriyati & Bahri, (2020) stated that designing an information system with use case diagrams, activities, and accounting helps BUMDes leaders make the right decisions about financial and economic steps that need to be improved. Using AIS can increase the efficiency and effectiveness of BUMDes financial management and ensure better accountability and transparency (Titania & Utami, 2021).

Therefore, in order to improve efficiency and transparency in financial preparation, BUMDes Pulotondo needs a financial application that is able to accurately record all reports of incoming and outgoing funds. By designing a system using the Business Process Model and Notation (BPMN), it will be easier to find out the accurate flow and in accordance with existing government regulations. From the analysis and design, it is also expected to be able to help BUMDes managers in monitoring cash flow and financial transactions in real time, ensuring proper recording, and minimizing the risk of errors in reporting. And in the future, it can optimize its financial management and improve overall performance to achieve more sustainable local economic development goals

## 2. Theoretical Background

### 2.1 Accounting Information System

Accounting Information System is a system that has the function to be collected, recorded, stored, and processed in order to produce some information for decision makers (Romney & Steinbart, 2018). In this case including humans, procedures and instructions,

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as well as data and software. Likewise, the accounting information system is needed in the system to become a perfect system. According to Turner et al., (2022) said that the accounting information system is a business process that starts from the process, procedures/steps, and this system integrates accounting data from various business processes to record it in the appropriate records.

### 2.2 Preparation of Financial Reports

According to Anwar (2019), the preparation of financial reports includes the process of collecting, processing, and presenting financial information over a certain period of time from a business or organization, in a format that complies with applicable accounting standards. This report provides an overview of the financial condition, financial performance, and changes in the financial position of the entity to stakeholders. Meanwhile, according to Lintong et al., (2020) there are three main objectives in preparing a company's financial reports, namely maximizing the company's value, maintaining financial stability, and facing good situations and controlling risks both now and in the future.

### 2.3 SAK ETAP

Indonesian Institute of Accountants (2019) stated that the Financial Accounting Standards for Entities Without Public Accountability (SAK ETAP) are accounting standards that are more concise compared to general SAK, with simplifications in several aspects such as recognition of fixed assets, financial instruments, and without the need to apply fair value widely. According to Siregar (2017), SAK ETAP functions to provide accounting guidance for entities that do not have to follow strict regulations from capital market regulators or financial authorities, with a simpler and more relevant approach for small and medium businesses.

### 2.4 Business Process

A business process is a series of activities designed to transform inputs into outputs that provide added value to customers (Jeston & John, 2014). At each stage, the business process ensures that the resources and raw materials entering the system are processed effectively and efficiently to produce products or services that meet customer needs and expectations. These activities can include steps such as planning, production, distribution, and service, all of which contribute to improving the quality and value of the final product.

### 2.5 Business Process Model and Notation (BPMN)

Business Process Model and Notation (BPMN) is a standard used to design business processes that are described in the form of graphical notation. BPMN describes a business process diagram that uses flowchart techniques, which aims to create a graphical model of business operations with activities and flow controls that regulate the sequence of work (Yohana, 2018). BPMN is used to create notations that can make everyone involved understand their business, so that members of various departments in a company can also understand the business processes that have been created. This is expected to support the decision-making process. Various fields usually use BPMN business process modeling, such as educational services, companies, and government (Rahmawati et al., 2017).

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2.6 Bizagi Modeller

Bizagi is a free software that functions to create, improve, and visualize workflow diagrams in business process modeling. Its main purpose is to improve organizational efficiency and governance. Using standard BPMN notation, users can diagram, document, and simulate their work processes. According to Gracia (2019) states that Bizagi Modeler is an application designed to facilitate the creation of Business Process Model and Notation (BPMN) designs.

2.7 Village-Owned Enterprises (BUMDes)

BUMDes is an official institution formed by the village government or village community to manage various economic activities and public services, such as managing businesses, utilizing assets, increasing investment, and providing various types of services to improve the welfare of village communities. Maryunani (2018) stated that BUMDes is a village-owned business entity managed by the village government and local community, with the aim of improving the village economy and strengthening social interaction among its citizens. BUMDes was formed to focus on the needs and potential of the village.

## 3. Methods

3.1. Research Design

This study employs a Research and Development (R&D) approach, utilizing the ADDIE model (Analyze, Design, Development, Implementation, Evaluation) as its overarching framework (Molenda, 2015). The ADDIE model was selected for its systematic and iterative nature, which is highly suitable for designing and developing effective learning tools and, by extension, information systems that meet specific user requirements.

However, the scope of this particular article is deliberately focused on the first two phases of the ADDIE model: Analysis and Design. This scoping decision ensures that the research provides an in-depth exploration of the critical foundational stages of system creation—namely, problem identification and conceptual design—without the complexities of full-scale development and deployment, which will be addressed in future research. The research flow, illustrating the phases undertaken, is presented in Figure 1.

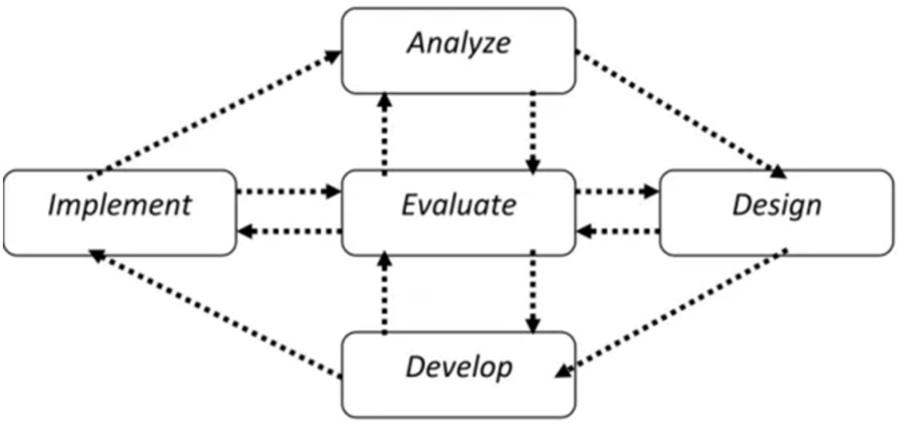


**Figure 1**. Research Stages Based on the ADDIE Model (Molenda, 2015)

3.2. Research Context and Data Collection

The research was conducted as a qualitative case study at a single Village-Owned Enterprise (BUMDes) Pulotondo in Indonesia. The unit of analysis is the business

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processes and informational requirements related to its financial management and reporting.

Primary data was collected through two main techniques:

1) In-depth Interviews: Semi-structured interviews were conducted with key actors, including the BUMDes manager and finance staff, to gain a comprehensive understanding of the existing problems, user needs, and operational challenges.
2) Direct Observation: The researchers observed the current manual bookkeeping practices and document flow to map the as-is business processes accurately.

Secondary data was obtained from organizational documents, such as existing financial records and report templates, to support the analysis.

### 3.3. Data Analysis and Design Procedure

The data analysis and design process were carried out in two sequential stages, as dictated by the ADDIE framework:

1) Analysis Phase: Thematic analysis was applied to the qualitative data from interviews and observations. The objective was to identify and codify key issues, user needs, and specific requirements for a new accounting information system. This phase established the foundational problem statement that guided the subsequent design.
2) Design Phase: The findings from the analysis phase were directly translated into design artifacts. This involved:
3) Business Process Modeling: Designing the *to-be* business process flows using the Business Process Model and Notation (BPMN 2.0). The BPMN notation was chosen for its standardization and ability to provide a clear, unambiguous visual representation of process logic, actors, and information flow.
4) System Design Proposal: Creating an initial conceptual design for the proposed accounting information system, which includes defining its core modules, data entities, and functional specifications based on the newly designed BPMN diagrams.

## 4. Results and Discussion

### 4.1. Analysis

BUMDes Pulotondo faces challenges in financial management due to the limited understanding of management regarding accounting concepts, which causes difficulties in preparing and managing financial reports systematically. The inability to identify and classify transactions into appropriate accounts has an impact on inaccuracy in preparing cash flow reports, changes in capital, balance sheets, and profit and loss. Even though they have used financial applications, management still has difficulty in inputting data accurately, so a more adaptive and easy-to-use system is needed.

Therefore, it is necessary to design a BPMN-based financial information system that is intuitive and user-friendly, with features for automating transaction recording and presenting financial reports according to accounting standards. This system will improve the efficiency, accuracy, and flexibility of real-time financial data access, thus supporting transparency, accountability, and better financial governance. With the implementation of this technology, it is hoped that the financial management of BUMDes Pulotondo will be more effective, which will ultimately have an impact on improving the performance and sustainability of BUMDes businesses. Figure 2 the following is a fishbone diagram that analyzes the problems that occur in the management of financial reports.

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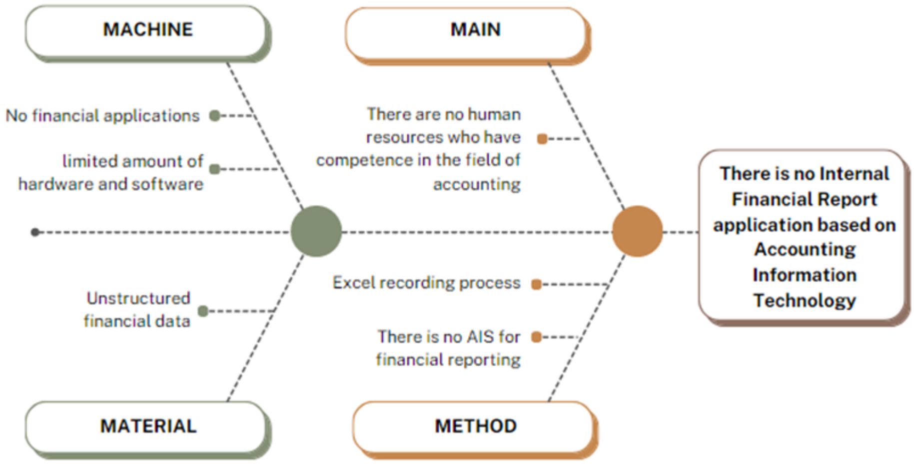


**Figure 2**. Fishbone diagram

The Fishbone Diagram indicates that the main root cause is the absence of an internal financial reporting application based on accounting information technology. Contributing factors include the lack of accounting competence among BUMDes members, limited hardware and software support, and the absence of government-provided financial applications or socialization. In addition, the recording process still relies on manual and Excel-based methods without an Accounting Information System (AIS), while financial data often remains unstructured, making reporting more difficult.

4.2. Design

At the application design stage, system requirements will be described using use case diagram modeling which will describe the typical interactions between users and the system. Figure 3 below shows a use case diagram with two users, namely administrator and village staff.

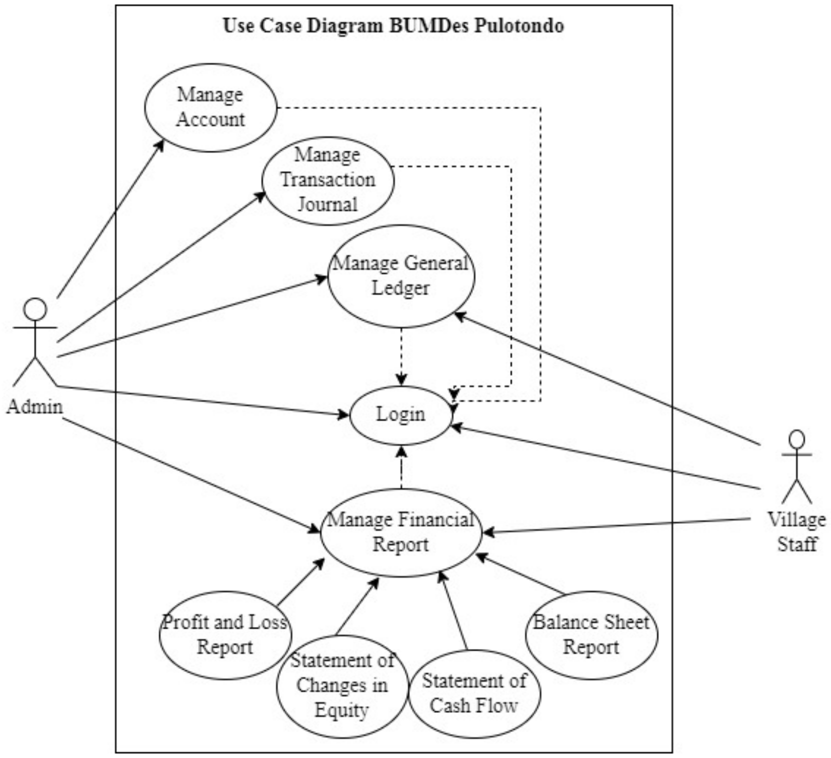


**Figure 3**. Use Case Diagram

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Then the problems that occur in BUMDes Pulotondo will focus on the AIS which will be visualized using BPMN. In business process modeling, two approaches can be used, namely As-Is BPMN and To-Be BPMN. As-Is BPMN is used to describe the current business process conditions, while To-Be BPMN is used to represent the proposed business process design to improve operational efficiency and effectiveness. The following is a BPMN design starting from the financial statements (Balance Sheet, Statement of Changes in Equity, Profit and Loss Statement, and Cash Flow Statement):

### 4.3 Financial Reports

#### 4.3.1 As-Is BPMN Financial Reports.

The current business process related to financial reports involves four parties, namely: Business Unit, BUMDes Management, Village Government, and BPD Supervisor. As shown in Figure 4.

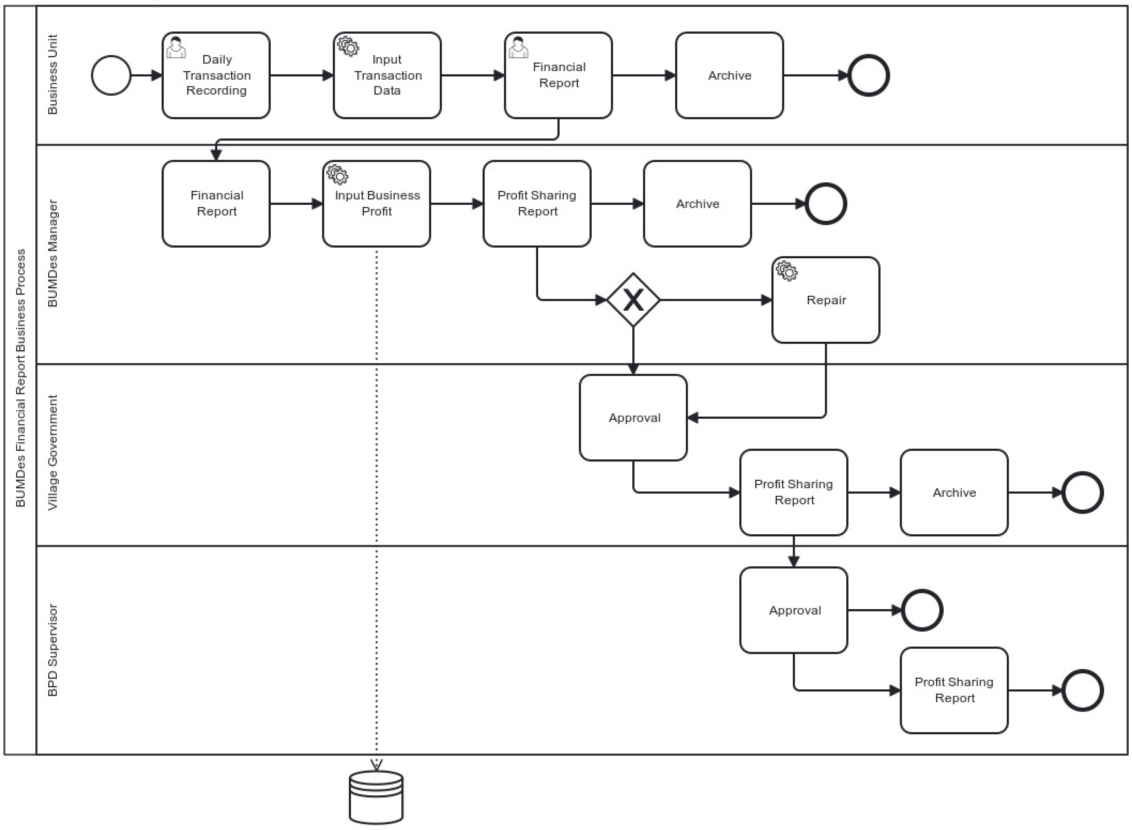


**Figure 4**. As-Is BPMN Financial Report

The BUMDes financial reporting business process involves several parties, namely business units, BUMDes management, village government, and BPD supervisors. The process starts from the business unit recording daily transactions and entering data into the system, which then produces financial reports and is archived. Furthermore, the BUMDes management inputs business profits to produce a profit-sharing report. If the report is incomplete, improvements will be made before being resubmitted. If complete, the profit-sharing report is submitted for approval by the village government. Once approved, the report is archived and forwarded to the BPD supervisor for the final approval stage. If the BPD supervisor approves, the profit-sharing report is approved, while if not, the process is stopped or revised again. This flow ensures transparency and accountability in BUMDes financial management.

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4.3.2 To-Be BPMN Financial Reports

The current business process related to financial reports involves four parties, namely: Treasurer, BUMDes Staff, Head of BUMDes, and Village Head. As shown in Figure 5.

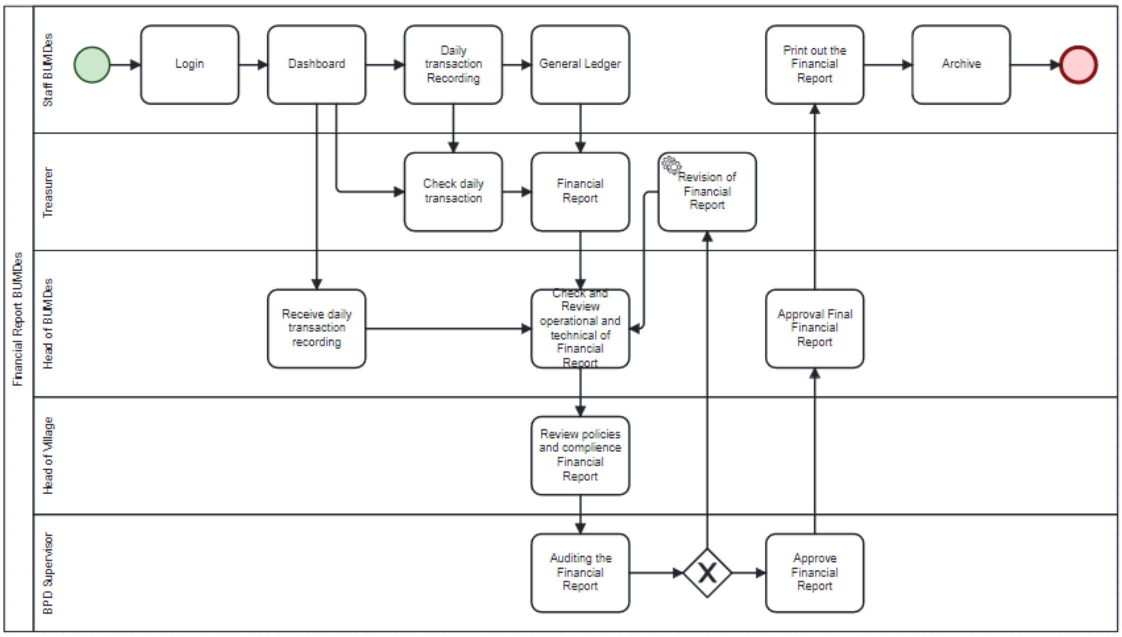


**Figure 5**. To-Be BPMN Financial Report

The business process flow for managing financial reports in BUMDes, which involves five main roles: BUMDes Staff, Treasurer, Head of BUMDes, Village Head, and BPD Supervisor. This BPMN To-Be flow describes the process of managing BUMDes financial reports starting from recording daily transactions by BUMDes Staff to the final approval process by the BPD supervisor. The process begins with BUMdes Staff logging into the system, where they record expenditure and income transactions in the general journal. After that, the Treasurer recaps daily transactions, verifies data, and prepares financial reports. The Head of BUMDes then receives the report, rechecks it, and gives approval before it is submitted to the village head. The village head has the authority to review financial reports regarding regulations and regulations before the financial report is finally audited and approved by the BPD supervisor as a valid document. After the document is approved, it will return to the BUMDes Staff to be printed and archived.

The advantage of To-Be BPMN is the existence of a systematic and structured flow in the BUMDes financial reporting process, starting from recording daily transactions by the treasurer to the audit and approval process by the BPD supervisor. This flow shows the existence of a checking mechanism at various stages, which can improve the accuracy and validity of financial reports. However, the downside is the potential for delays if there is a disagreement at the approval stage, as the flow only provides one revision path back to the treasurer, with no direct communication path between reviewers.

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### 4.4 Balance Sheet Report

#### 4.4.1 As-Is Balance Sheet Report

The current business process that is still carried out by BUMDes related to the balance sheet report consists of five parties, namely: BUMDes Staff, Treasurer, Head of BUMDes, Village Head, and BPD Supervisor. As shown in Figure 6.

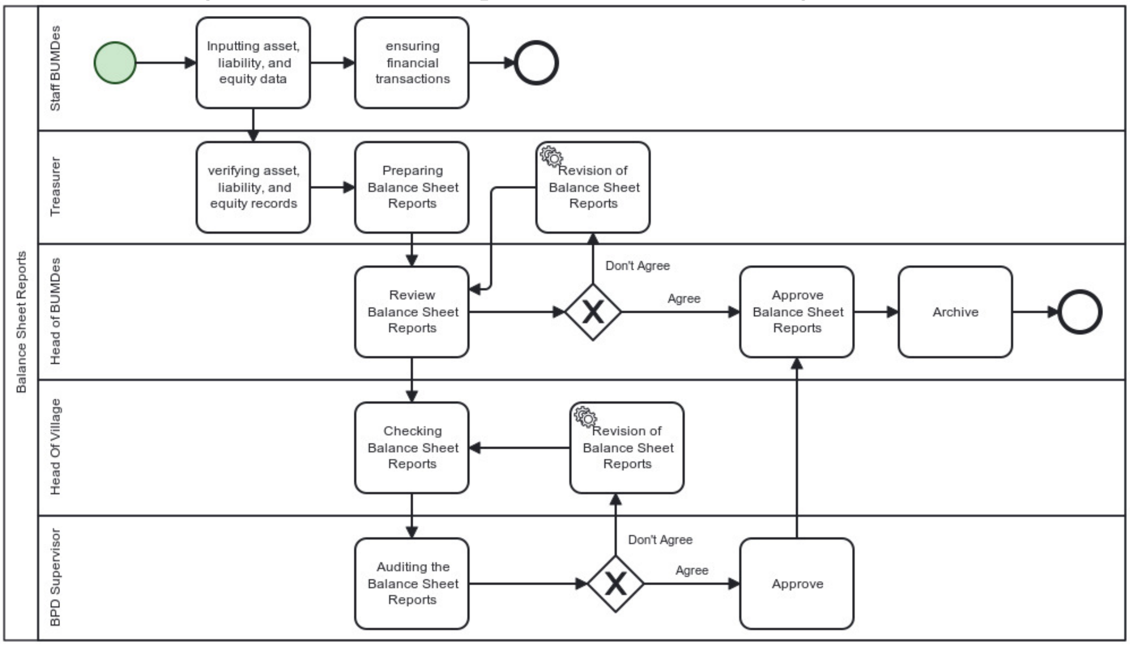


**Figure 6**. As-Is BPMN Balance Sheet Report

This business process begins with BUMDes staff who input data on assets, liabilities, and equity, then continued by the treasurer who verifies the data and prepares the Balance Sheet Report. After the report is prepared, the Head of BUMDes reviews the report from a technical perspective and the feasibility of the content, which is then forwarded to the Village Head to check compliance with village policies and regulations. The final supervision is carried out by the BPD through an audit process on the report. If all parties agree to the report, the report will be approved and archived. However, if there is a discrepancy at one stage, the report will be returned for revision by the treasurer and then re-passed through the evaluation stages until full approval is achieved.

The advantages lie in layered supervision, clear responsibilities, and flexibility of revision, reflecting the principles of good governance. However, the disadvantages are the potential for delays due to the many stages, manual processes without a digital system, and the absence of time limits that reduce efficiency and control of reporting time.

4.4.2 To-be Balance Sheet Report

The proposed business process related to the balance sheet report has five parties, namely: BUMDes Staff, Treasurer, Head of BUMDes, Village Head, and BPD Supervisor. As shown in Figure 7.

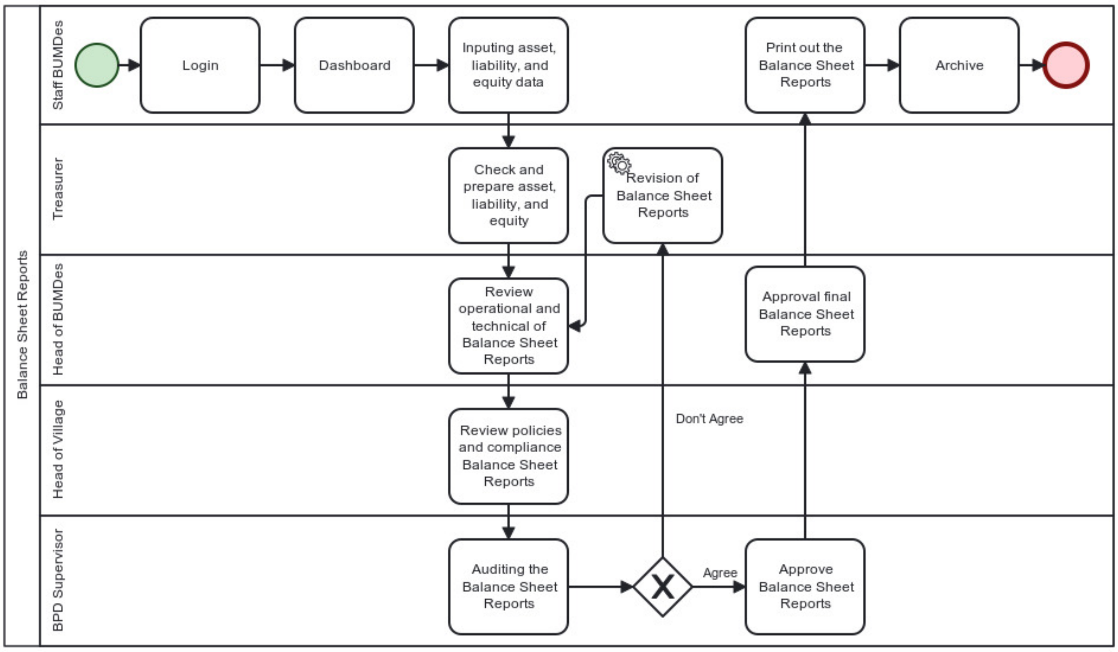


**Figure 7**. To-Be BPMN Balance Sheet Report

The BPMN business process begins with BUMDes staff logging into the system, accessing the dashboard, and inputting asset, liability, and equity data. After the data is entered, the treasurer is tasked with checking and preparing the balance sheet report. The report that has been prepared is then reviewed from an operational and technical perspective by the Head of BUMDes, and from a policy and regulatory perspective by the Village Head. An audit of the balance sheet report is carried out by the BPD Supervisor to ensure the integrity and accuracy of the financial data. If the report has been approved through the evaluation mechanism, the report will receive final approval, be printed, and archived as official documentation.

The business process shown shows a systematic and accountable structure, with the involvement of various parties in the verification and supervision of financial reports, as well as the use of digital systems for efficiency. However, this flow still has weaknesses such as the absence of recording of audit feedback and the absence of time management for each stage, so improvements are needed to be more effective and appropriate.

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4.5 Profit and Loss Report

4.5.1 As-Is Profit and Loss Report

The current business process that is still carried out by BUMDes related to the Profit and Loss Report involves five parties, namely: BUMDes Staff, Treasurer, Head of BUMDes, Village Head, and BPD Supervisor. As shown in Figure 8.

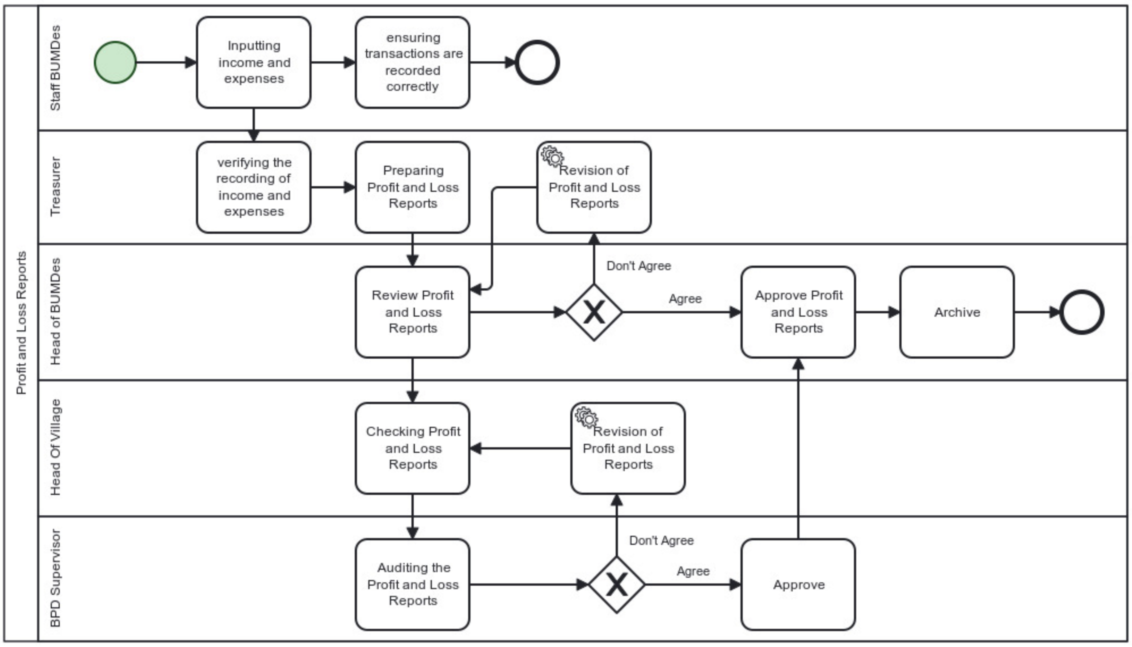


**Figure 8**. As-Is BPMN Profit and Loss Report

This business process starts with BUMDes Staff inputting income and expenses, then the transaction is checked by the treasurer. After that, the treasurer verifies the data and prepares the Profit and Loss Report. The report that has been prepared will be reviewed by the Head of BUMDes. If approved, the report is immediately submitted to the Village Head. However, if it is not approved, a revision of the report is carried out first. The Village Head then checks and audits the report through the BPD Supervisor. If there are any discrepancies, the report will be revised again. If the report has been approved by all parties, it will be archived as an official document. This process ensures that there is tiered validation to guarantee the accuracy of BUMDes financial reports.

This business process flow has the advantage of a systematic and layered system, which increases transparency and accuracy of financial reports. However, its weakness lies in the potential for delays due to the many stages of approval and the absence of a digital system, which can hinder efficiency and increase the risk of errors. Digitalization and time management at each stage are recommended to increase process effectiveness.

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4.5.2 To-be Profit and Loss Report

The proposed business process related to the Profit and Loss Report has five parties, namely: BUMDes Staff, Treasurer, Head of BUMDes, Village Head, and BPD Supervisor. As shown in Figure 9.

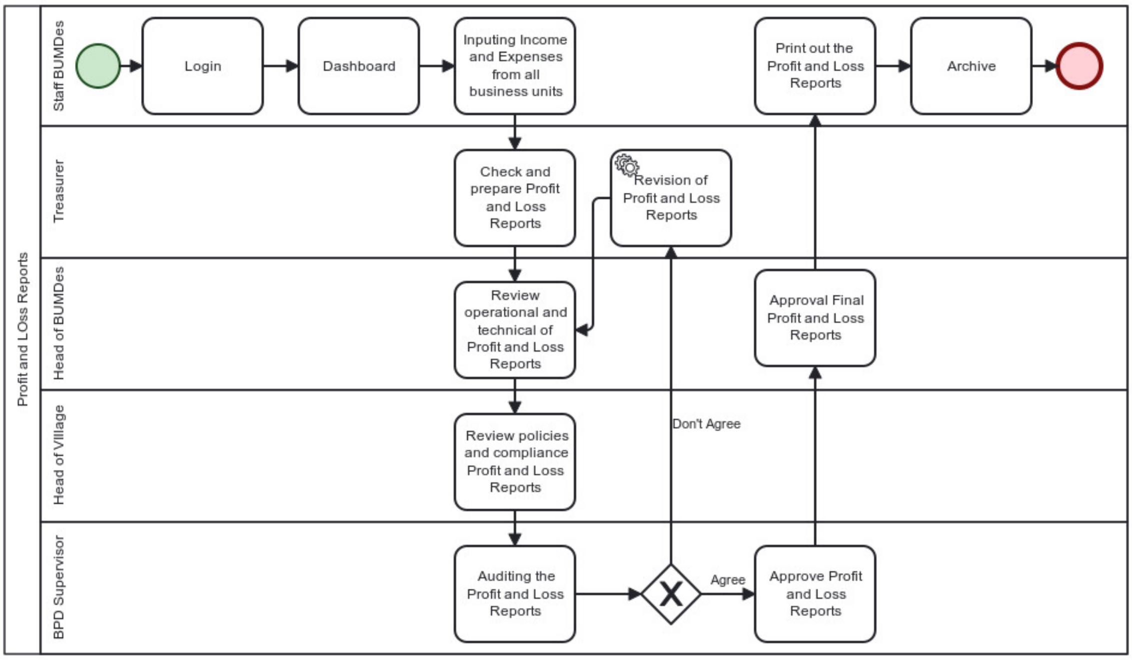


**Figure 9**. To-Be BPMN Profit and Loss Report

This BPMN flow illustrates the process of preparing a profit and loss report in BUMDes, starting with BUMDes Staff who log in to the system and access the dashboard to input revenue and operational expenses from all units. Next, the Treasurer checks and prepares the profit and loss report based on the data that has been inputted. The report is then reviewed by the Head of BUMDes from an operational and technical perspective, then continued by the Village Head who reviews the policy and regulatory aspects. After that, the BPD Supervisor conducts an audit of the report. If the report is approved, it will be forwarded to the final approval stage. If not approved, the report is returned for revision by the Treasurer. After final approval, the report is printed and archived. This flow reflects a structured, collaborative process that supports accountability through the involvement of various parties in the preparation of financial reports.

The advantage of this BPMN flow is the use of a digital system from the start through login and dashboard, which shows the use of technology for efficient input and data management. However, the weakness lies in the potential for delays if there is a disagreement at the approval stage, because the flow only provides one revision path that goes back to the treasurer, without any direct communication path between reviewers.

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4.6 Statement of changes in Equity

4.6.1 As-Is Statement of Changes in Equity

The current business process that is still carried out by BUMDes related to the Statement of Changes Equity Report involves five parties, namely: BUMDes Staff, Treasurer, Head of BUMDes, Village Head, and BPD Supervisor. As shown in Figure 10.

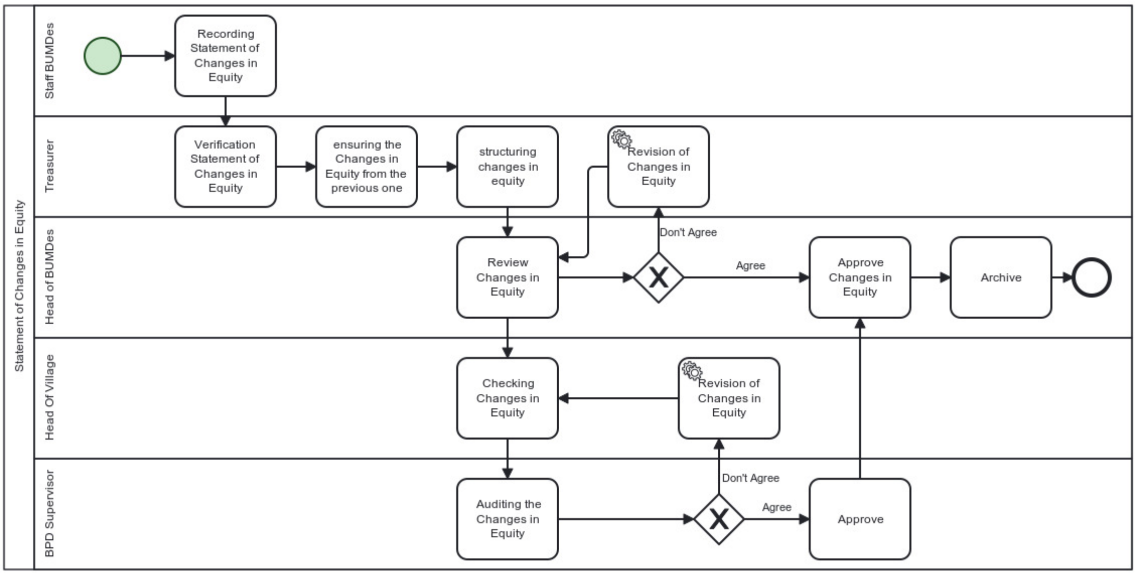


**Figure 10**. As-Is BPMN Statement of Changes in Equity

The business process of preparing a BUMDes capital change report as illustrated in this BPMN diagram reflects a structured and accountable financial reporting system. The process begins with BUMDes staff inputting capital change data, then continued by the treasurer who verifies and prepares a capital change report. Furthermore, the report is reviewed by the Head of BUMDes to ensure the truth of the substance and administrative feasibility. After that, the Village Head checks the report's compliance with applicable regulations and policies. The report is then audited by the BPD Supervisor to ensure validity and accountability. If all parties agree, the report is approved and archived. However, if there is a discrepancy, the report is returned for revision, creating a cycle of improvement until the report meets all the specified evaluation standards.

The advantage of this business process flow lies in the existence of multiple validation stages by various actors, namely the treasurer, Head of BUMDes, Village Head, and BPD Supervisor, which shows the application of the check and balance principle in BUMDes governance. However, there is a weakness in this flow. There is no explicit explanation of the time limit or deadline in each stage of the process, which could potentially cause delays in the preparation of the report.

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4.6.2 To-be Statement of Changes in Equity

The proposed business process related to the Statement of Changes in Equity involves five parties, namely: BUMDes Staff, Treasurer, Head of BUMDes, Village Head, and BPD Supervisor. As shown in Figure 11.

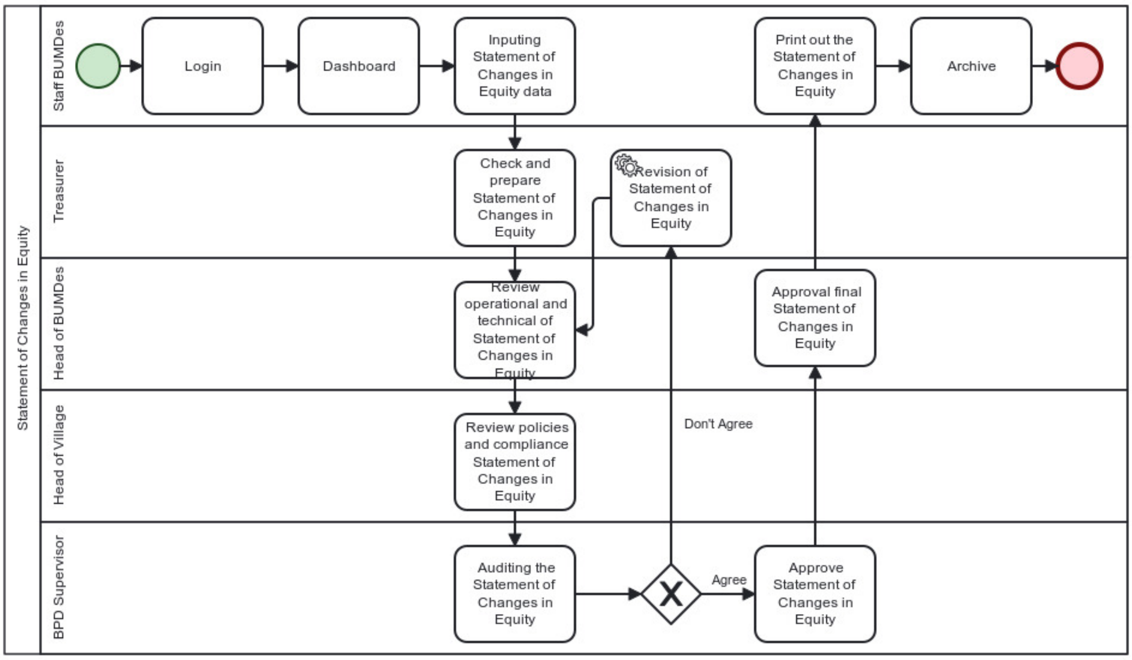


**Figure 11**. To-Be BPMN Statement of Changes in Equity

The business process of preparing a capital change report at BUMDes depicted in the BPMN model shows a systematic and collaborative flow between authorized parties in the management and supervision of village finances. The process begins with the login and navigation activity to the dashboard by BUMDes staff, who then input capital change data. The data is forwarded to the treasurer to be checked and prepared for a capital change report. Furthermore, the report is reviewed by the Head of BUMDes from an operational and technical perspective to ensure that capital changes have been prepared based on real conditions and internal procedures. The report is then verified from a regulatory and policy perspective by the Village Head, and audited by the BPD Supervisor as a form of external supervision. If all stages of the assessment agree on the contents of the report, the report receives final approval and proceeds to the printing and archiving process. However, if there is a discrepancy, the report is returned for revision and the evaluation cycle is restarted from the treasurer stage.

This process flow has the main advantage in the application of the principles of transparency and accountability which are realized through the involvement of multiple parties in the review process, starting from technical aspects to regulatory compliance. However, the weakness is the time aspect is also not depicted in this flow, such as the time limit for each stage of the process, even though this is important to maintain the timeliness of reporting and decision making.

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## 4.7 Cash Flow Statement

### 4.7.1 As-Is Cash Flow Statement

The current business process that is still carried out by BUMDes related to the Cash Flow Report consists of five parties, namely: BUMDes Staff, Treasurer, Head of BUMDes, Village Head, and BPD Supervisor. As shown in Figure 12.

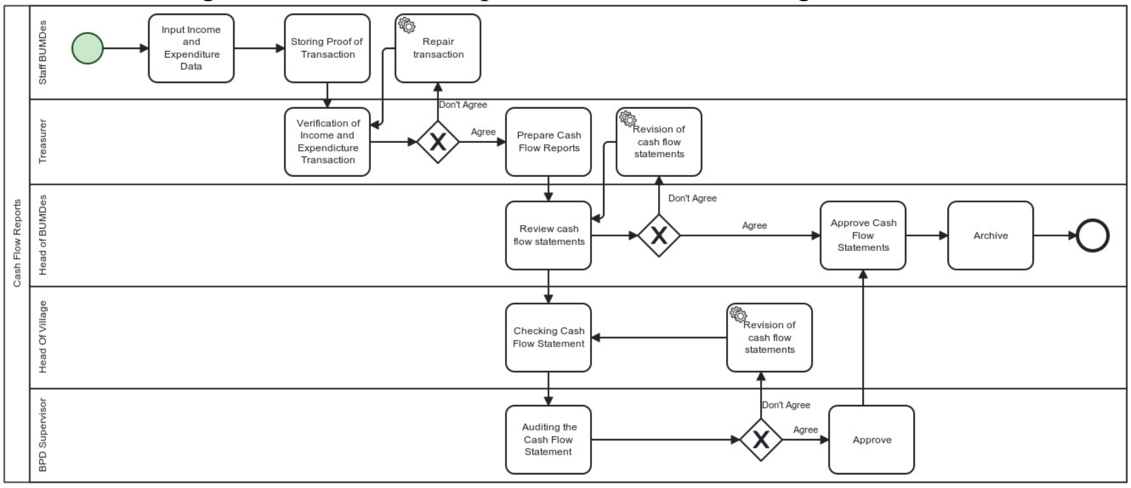


**Figure 12**. As-Is BPMN Cash Flow Statement

The cash flow report business process begins with BUMDes Staff who record income and expenditure data and store proof of transactions. Furthermore, the treasurer verifies the transaction. If there is a discrepancy, the transaction is returned for correction. Once approved, the treasurer prepares a cash flow report which is then reviewed by the Head of BUMDes. If the report still requires correction, a revision is made before being approved. After being checked and approved by the Village Head, the report will be audited by the BPD supervisor and if there is a discrepancy, the report must be revised again. The approved report will be returned to the Head of BUMDes for archiving.

The advantage of this business process flow lies in the layered supervision structure that provides accountability and integrity of financial reports. Each stage is carried out by different parties with clear authority and responsibility, starting from technical (Head of BUMDes), regulation (Village Head), to independent supervision (BPD). However, this process also has some weaknesses. One of the main weaknesses is the potential for delays due to the long approval process and dependence on many actors. If one party does not agree and requires revision, then the entire process cycle must be repeated which has an impact on time efficiency.

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4.7.2 To-be Cash Flow Statement

The proposed business process related to the Cash Flow Report has five parties, namely: BUMDes Staff, Treasurer, Head of BUMDes, Village Head, and BPD Supervisor. As shown in Figure 13.

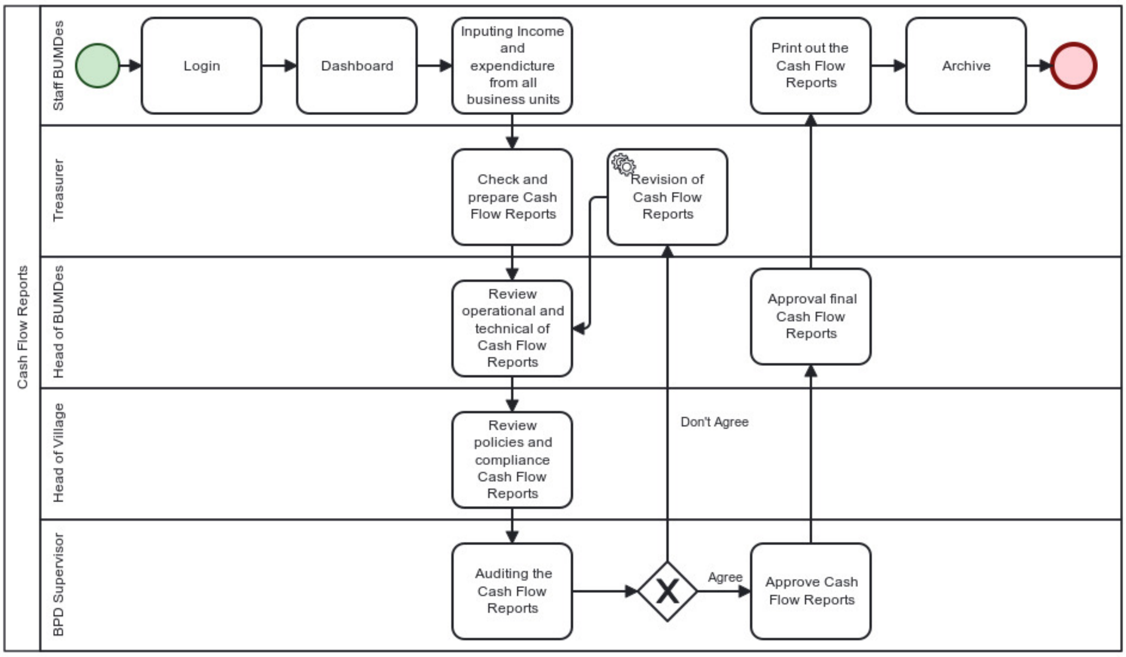


**Figure 13**. To-Be BPMN Cash Flow Report

To-be flow illustrates the process that begins when BUMDes staff log in to the system and access the dashboard to input income and expenditure transaction data from all BUMDes business units. The data that has been entered is then verified and compiled into a cash flow report by the Treasurer. The report that has been compiled is then reviewed technically and operationally by the Head of BUMDes to ensure its compliance with ongoing business activities. After the initial review process, the report is forwarded to the Village Head who is tasked with assessing the report's compliance with applicable policies and regulations. If the report meets the requirements, the BPD Supervisor will conduct an audit of the cash flow report. In this audit process, if any discrepancies are found, the report will be returned for revision, and the evaluation process will be repeated. However, if the audit results state that the report is in accordance, the BPD Supervisor will give final approval. The final cash flow report that has been approved is printed and archived as an official BUMDes financial document.

The main advantage lies in the clear division of tasks between roles, from operational staff to supervisors, thus avoiding overlapping authority and increasing reporting accuracy. However, the weakness is that the time aspect is also not described in this flow, such as the time limit for each stage of the process, even though this is important to maintain the timeliness of reporting and decision making.

## 5. Conclusion

This study set out to diagnose the root causes of financial reporting inefficiencies and to design a targeted solution for a Village-Owned Enterprise (BUMDes). The research objectives have been successfully met through a structured two-phase methodology.

1) The application of the fishbone diagram proved highly effective in systematically diagnosing the root causes of financial management problems. The analysis

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categorized critical issues across four key areas: human resources (lack of accounting competence), technology (absence of dedicated software), methods (inefficient manual processes), and data (unstructured financial information). This diagnostic phase provided a clear and comprehensive problem statement that directly informed the subsequent design efforts.

2) Based on this analysis, a Business Process Model and Notation (BPMN) framework was developed to redesign the core financial reporting processes. The BPMN models successfully provide a visual and structured representation of the workflows for generating essential financial reports, including the Income Statement, Statement of Changes in Equity, Cash Flow Statement, and Balance Sheet. This modeling serves as a crucial blueprint, standardizing procedures to minimize errors and forming a solid foundation for developing a more efficient and user-friendly Accounting Information System (AIS).

In conclusion, this research demonstrates the critical importance of a thorough problem analysis prior to system design. The combined use of the fishbone diagram and BPMN provides a robust framework for translating identified operational weaknesses into a structured and effective system model. The findings offer a practical pathway for improving financial governance in similar resource-constrained environments. Future research should focus on the development, implementation, and empirical evaluation of a functional AIS prototype based on the designed BPMN models.

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