



Financial Risk Mitigation for Gayo Coffee Processors: Interventions in Financial Management and Business Legal

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Abstract: This community service program aims to mitigate financial risks faced by Gayo Arabica coffee processors through interventions in financial management capacity building and the strengthening of business legality. The program was implemented using a three-stage approach consisting of socialization, hands-on assistance and practical training, and evaluation. A total of ten members of the partner group participated in the program, with activities focused on identifying operational costs, preparing simple financial statements, and drafting basic sales and purchase contracts. Data were analyzed using a mixed-methods approach, integrating quantitative and qualitative techniques to evaluate the program's effectiveness. The results, evaluated through pre- and post-test assessments, indicate a significant increase in participants' capacity. In the financial aspect, a paradigm shift was observed from a lack of cost awareness to improved cost consciousness, with 100% of participants demonstrating an understanding of the importance of financial record-keeping. In terms of business legality, all partners (100%), exceeding the initial target of 60%, were able to draft simple written sales contracts. Overall, the program effectively reduced financial risks by strengthening partners' bargaining power, providing greater income certainty, and enhancing business professionalism through the application of structured financial management practices and formal legal contracts.

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Introduction

Gayo Arabica coffee is one of the best coffee varieties in the world, grown in the highlands of Central Aceh Regency. This coffee has its own appeal in terms of aroma, taste, body, and balanced acidity, thereby increasing demand in both the domestic and international markets (Abubakar et al., 2019, 2021; Fadhil et al., 2023; Samsudin et al., 2022). The area of coffee plantations in Central Aceh reaches 50,034 hectares with an average annual production of 36,500 tons (BPS, 2024). This provides significant economic opportunities for the local community, especially coffee processors (Mariyudi et al., 2018). Coffee processors play an important role in the supply chain, processing cherries (red coffee fruit) purchased from farmers into green beans that are ready for market. One of the Gayo Arabica coffee processor groups is the Suluh Muterang Group, which consists of young processors in Umang Village, Central Aceh Regency.



Despite their great business potential, the sustainability of these coffee processors' businesses faces various obstacles and risks. Production activities are dependent on weather conditions for the drying process, which affects the overall efficiency of coffee production (Kavin Klinsman Konsil et al., 2023; Largo-Ávila et al., 2025; Stanley et al., 2024). Beyond the technical challenges in the production process, there are crucial issues identified, namely business management and business legality, which have a direct impact on financial stability. Currently, many coffee processors still do not have an organized financial recording system. Financial records are essential for detecting production costs, sales revenue, and overall profitability (Casilimas et al., 2021; Ordoñez-Avila et al., 2023; Othuon et al., 2023; Turco et al., 2023). In addition, financial records enable coffee processors to create budgets and plan future production cycles to effectively manage cash flow.

Financial data is used in mitigating risks that arise in the business processes of coffee processors. Risk control is highly dependent on the accuracy of data for identification, analysis, and evaluation (Bagus S & Syafrina E H, 2024; Hendrawan & Febriyani, 2024). In addition, coffee processors must also implement effective working capital management that relies on financial data (Iyalla & Ibrahim, 2023; Othuon et al., 2021). Therefore, the absence of financial records can have a significant impact on the decision-making process of coffee processors due to limited ability to make appropriate decisions, manage risks, improve operational efficiency, plan strategically, monitor financial performance, and comply with regulatory requirements (Bamenga Bopoko et al., 2025; Fuentes et al., 2025; Le et al., 2024). This can ultimately lead to financial instability and a decline in the profitability of coffee processors.

In terms of business legality, currently the partner groups do not have written sales and purchase contracts in the implementation of their businesses. Sales and purchase contracts are fundamental to the legality of a business to ensure that transactions are conducted fairly and transparently (Kumar & Wesselbaum, 2024; Le Thi & Le Minh, 2024; Świążzkowska, 2023). Transparency in the supply chain is crucial to prevent contract violations, such as products not being delivered when market prices fluctuate (Ordoñez et al., 2024). This situation puts coffee processors in a weak bargaining position against collectors or external buyers. This is important in the coffee market, where prices can fluctuate significantly due to factors such as weather conditions and market demand. Due to the volatility of coffee prices, coffee processors face financial risks (Bilen et al., 2022; Massrie, 2025). Without the legality of a contract, buyers can easily cancel transactions unilaterally or lower prices (Bagus Suryaningrat & Syafrina Endah Hapsari, 2024; Blouin & Macchiavello, 2019; Santoso et al., 2025). This situation causes price instability, reduced profit margins, and increased financial loss risks.

This situation is rooted in limited capacity in financial management and business legality, highlighting a knowledge gap and inadequate managerial competencies within the Suluh Murang group. The absence of a structured financial recording system for cash flows and detailed operational costs reflects structural weaknesses in organizational capacity. Moreover, transactions involving the buying and selling of green coffee beans rely on informal verbal agreements rather than written contracts. These conditions undermine the group's bargaining position, create price uncertainty, increase vulnerability to financial losses, and ultimately constrain the empowerment and sustainable business.

Contracts may include clauses that specifically address risk mitigation strategies, such as downtime and financial difficulties through insurance policies (Aiken et al., 2018; Soyer, 2016). Futures contracts can also help coffee processors by hedging against price volatility



(Jenkins & Barbosa, 2020). In contracts, coffee processors can lock in prices for future transactions, providing stability and predictability in financial planning (Fan Ting et al., 2015; Fan et al., 2020; Hu et al., 2018; Yoo et al., 2015). Therefore, efforts to empower coffee processors are urgently needed to mitigate financial risks that could hinder the growth and sustainability of their businesses. Therefore, this community service program offers concrete solutions through a comprehensive approach aimed at strengthening financial literacy and business legality. First, the program delivers training and intensive mentoring in financial management, encompassing cash flow recording, production cost control, and the preparation of simple financial statements. These activities are supported by the distribution of cash books. Second, the program facilitates socialization and mentoring on business legality through the development of written sales and purchase contract drafts.

This community service activity focuses on the importance of financial risk mitigation through interventions in two main aspects: improving financial management and strengthening the legality of businesses for Gayo coffee processors in Central Aceh. Additionally, this activity is also carried out in support of Sustainable Development Goal (SDG) 8, namely economic growth and decent work, and SDG 12, namely sustainable consumption and production.

Method

This Community Service Program was implemented in Umang Village, Bebesen Subdistrict, Central Aceh Regency in October 2025. The partner for this activity was the Suluh Muterang Coffee Processor Group. The Coffee Processor Group consisted of 10 members, including 7 males and 3 females, with ages ranging from 33 to 45 years. The implementation of the activity was divided into three stages, namely socialization, assistance and practice, and evaluation (Figure 1). The main objective of this program was to improve the knowledge and skills of coffee processors in financial management and legal aspects of business. The main outcome of this program was that coffee processors were able to prepare simple financial reports and draft sales and purchase contracts aimed at mitigating possible financial risks in the future.



Figure 1. Stages in the implementation of the community service program

The first stage is socialization, which aims to provide coffee processors with an understanding of financial risk mitigation through financial management and business legality. The socialization material is divided into two parts, namely the importance of financial management and the need for business legality in business operations. The material



is delivered using presentation slides (PPT) and supported by leaflets to facilitate the partners' understanding. At this stage, members of the coffee processing group actively participated as participants to receive the material. Then, the second stage was assistance and practice in financial management and business legality. This was the core stage of the intervention, which aimed to provide practical assistance to the partners of the Suluh Muterang Group.

In this second stage, partners were given an understanding and hands-on practice related to identifying operational costs. The activity continued with the practice of calculating operational costs and preparing simple financial reports. To facilitate the recording process, partners utilized manual cash books provided by the team as the primary tool for documenting transactions. The use of these physical ledgers was intended to help participants internalize the habit of systematic bookkeeping in their daily business operations. Next, partners were given information about the importance of written business contracts. The assistance then focused on the practice of drafting sales and purchase contracts. The third stage aimed to ensure the success and effectiveness of each activity that had been carried out. The focus of the evaluation was to observe the application of financial management (such as cost management and financial reports) and the implementation of business legality (use of contract drafts) by partners. The evaluation was conducted to determine whether the program had brought about positive changes and met the needs of the partners.

Result and Discussion

Improvement in Financial Management Capacity

The initial phase of the program addressed the fundamental challenge of lacking an organized financial recording system among the partners. Baseline assessments revealed that 100% of the partner members (10 individuals) did not maintain structured financial records and were unable to accurately calculate production costs prior to the intervention. Following intensive socialization and mentoring sessions, a significant improvement in capacity was observed. Participants began to demonstrate the ability to identify operational expenses and utilize the provided cash books to document transactions systematically, marking a crucial shift toward data-driven business management.



Figure 2. Assistance and Financial Management Practices

After intensive socialization and mentoring as shown in Figure 2, the material focused on introducing the concept of costs, recording cash flow, and preparing simple financial reports. During the assistance sessions, the partner group actively participated in the practice of identifying daily operating costs (Figure 3). As a result of this practice, the partners were

able to independently distinguish between the costs of purchasing raw materials, labor costs, and other overhead costs that had never been calculated by the partner group before.



Figure 3. Partners identifying operational costs

For program sustainability, the Suluh Muterang Group was also provided with a practical guide in the form of a leaflet (Figure 4) summarizing key points in financial management that can be used as a reference in the future.

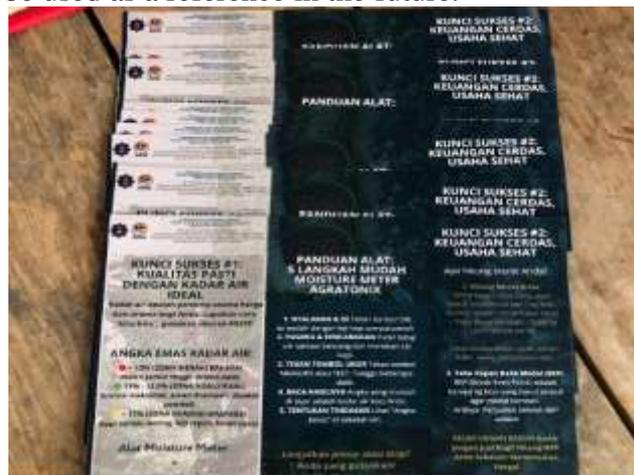


Figure 4. Simple Guide Leaflet given to Partners

The implementation of simple financial management is a crucial first step in financial risk mitigation. The main change that occurs is a shift from being cost-blind to cost-conscious. The ability to accurately calculate production costs enables partners to determine a rational minimum selling price. This minimizes the risk of losses due to setting prices that are too low or simply following market prices without knowing the operational cost structure. The partner's ability to compile simple financial reports not only serves as an internal evaluation tool but also as a long-term strategic measure. Structured and historical financial reports are a key prerequisite for accessing formal financing from financial institutions (banks). Thus, this intervention not only mitigates daily operational risks but also opens up opportunities for business sustainability and expansion through better access to working capital in the future.

Many coffee MSMEs lack formal mechanisms for cost calculation and instead rely on intuition or traditional methods for pricing their products (Suryaningrat & Hapsari, 2024). The finding that partners experienced substantial difficulties in financial management particularly in maintaining structured financial records and accurately calculating production costs prior to the intervention is consistent with previous studies on the Indonesian coffee



sector. These challenges reflect a fundamental capacity gap that is widely attributed to limited managerial skills and low levels of education related to formal business management practices among small-scale producers (Sarvina et al., 2021). Empirical studies on Indonesian coffee processing enterprises have identified inadequate administrative and financial systems as critical risk factors that directly undermine operational efficiency. Moreover, the literature indicates that many smallholder coffee producers in Indonesia operate with insufficient financial literacy and restricted access to formal financial information, which constrains their ability to adopt systematic and sustainable management practices (Salsabilla et al., 2024).

Improvement of Business Legality Aspects

The second activity was designed to mitigate financial risks arising from weak bargaining positions and the absence of legal protection in transactions. Socialization and assistance focused on the importance of business legality, particularly the use of written sales contracts. Prior to this activity, 100% of green bean sales by partners were conducted verbally. The dissemination and assistance (Figure 5) focused on educating participants on the importance of business legality, particularly the use of written sales contracts. After the assistance and practice of drafting contracts, 8 out of 10 members (80%) understood and were able to draft simple sales contracts. This achievement exceeded the target output (60%).



Figure 5. Business Legality Assistance and Practice

While the majority of members demonstrated enhanced capacity, 20% of the participants ($n=2$) remained hesitant to implement written contract drafts in actual transactions. The primary obstacle identified was the requirement for a more extended transition period to adapt to formal administrative patterns, as abrupt shifts in established transaction methods were feared to incite suspicion or be perceived as an erosion of social trust by buyers accustomed to traditional verbal agreements. This finding aligns with previous research identifying low farmer capability and limited skill sets as significant social barriers that often impede the adoption of modernized business practices (Sarvina et al., 2021).

The draft contract that has been prepared includes essential clauses for risk mitigation, particularly related to: (1) Product Quality Specifications (type, moisture content, defects), (2) Price and Volume Agreement, (3) Payment Mechanism, and (4) Consequences in the event of default (unilateral cancellation). The use of written contracts directly addresses the issue of financial losses due to transaction uncertainty. Transactions that were previously based purely on personal trust (verbal) are now increasingly becoming professional (written) agreements that have legal force. This significantly strengthens the bargaining power of the Suluh Muterang Group collectors or external buyers.



The implementation of written contracts serves as a critical strategic intervention for coffee processors to mitigate systemic risks within the supply chain. By providing legal protection through clearly defined terms such as pricing, quality standards, and delivery schedules written agreements effectively prevent disputes and ensure that both parties adhere to standardized process conditions (Zheng et al., 2023). This formalization directly addresses the risk agent of improper administration systems, which has been identified as a major barrier to the efficiency of Indonesian coffee agro-industries. Furthermore, the inclusion of profit margin guarantees within these contracts provides essential financial stability and predictability, protecting producers from the unstable price fluctuations and economic dilemmas that often threaten the livelihood of smallholders.

Written contracts also function as proactive risk management tools by incorporating clauses that address market volatility, adverse weather conditions, and supply chain disruptions (Huynh & Popova, 2024; Jenkins & Barbosa, 2020). Addressing these environmental and economic stressors is vital, given that climate variability and inadequate planning are primary obstacles to production stability and long-term business sustainability. Ultimately, transitioning from traditional verbal agreements to structured legal frameworks allows coffee processors to optimize resources and protect their profit margins against the disability of industry risk management frequently observed in informal sectors (Pratami et al., 2023)

Financial risks resulting from unilateral cancellation or arbitrary price reductions by buyers can be minimized. The inclusion of clear quality specifications in the contract protects producers from subjective claims by buyers. This provides income certainty and price stability for producers. Thus, the application of business legality in the form of a written contract that is serves as an effective risk mitigation measure to protect the profit margins and cash flow sustainability of Suluh Muterang group partners (Figure 6).

Evaluation

The evaluation of this community service program was conducted by analyzing the initial knowledge of the partners and the impact of the community service program on the understanding and practice of financial risk mitigation in the community. Feedback was collected through pre-test and post-test questionnaires distributed to 10 members of the Suluh Muterang Group. The pre-test results, as presented in Table 1, show that the majority of Suluh Muterang Group members do not have formal knowledge and practice in financial management and business legality.

Table 1. Comparison Pre-Test and Post-Test

Question Indicators	Pre-Test Score (%)	Post-Test Score (%)	Improvement Category
Financial Record Management	0% (n=0)	100% (n=10)	High
Production Cost Identification	10% (n=1)	100% (n=10)	High
Business Legality (Written Contracts)	0% (n=0)	100% (n=10)	High
Practical Risk Mitigation Readiness	40% (n=4)	90% (n=9)	High

The pre-intervention assessment revealed a critical baseline condition, characterized by an improper administrative system and a substantial lack of business management capacity among coffee processors. At baseline, 100% of participants did not maintain structured



financial records, and although 10% attempted to calculate production costs, these calculations were inaccurate. These findings are consistent with prior studies that identify low farmer capability and limited education and skills as major social and economic constraints within the Indonesian coffee production system (Sarvina et al., 2021). Furthermore, while 40% of participants were able to recognize basic risks such as price pressure, they were unable to propose effective mitigation strategies due to inadequate knowledge and managerial skills. Addressing these gaps through targeted training, education, and support can enhance their capacity to manage risks effectively (Abebe, 2021; Barone et al., 2017; Wolor et al., 2024).

Following the intensive socialization and mentoring sessions, the group demonstrated a substantial level of improvement. All participants (100%) successfully internalized both the concepts and practices of simple financial record-keeping, thereby effectively addressing the industry risk management limitations commonly observed in smallholder sectors. In terms of business legality, the increase from 0% to 100% in participants' understanding of the importance of written contracts indicates a heightened awareness of these documents as essential instruments for price protection and for establishing a solid legal foundation. Crucially, 90% of participants agreed that the newly introduced methods were simple and applicable. This high level of readiness suggests that the program successfully mitigated initial psychological barriers and reduced the perception of administrative procedures as a burdensome bureaucratic workload.

Conclusion

This Community Empowerment Partnership (PKM) activity shows that the financial risks faced by the Suluh Muterang Group coffee processors can be effectively overcome through two main managerial interventions, namely increasing financial management capacity and strengthening the legal aspects of the business. First, the financial management intervention has succeeded in changing the partners' paradigm from being unaware of costs to being cost-conscious. Through mentoring, coffee processors now have the basic skills to record cash flow, calculate production costs accurately, and prepare simple financial reports. These skills are not only essential for setting rational selling prices, but also a strategic long-term step to increase accessibility to formal financing institutions.

Second, strengthening the legal aspects of the business through the adoption of written sales contracts has significantly strengthened the bargaining power of partners. By switching from verbal transactions to written agreements that have legal force, coffee processors are now protected from the risk of losses due to unilateral cancellation or arbitrary price reductions by buyers. This provides income certainty and price stability, which are crucial for business continuity. Overall, this program proves that the implementation of structured financial management and the use of business legality instruments are two mutually reinforcing and effective pillars for protecting business continuity, stabilizing cash flow, and increasing the professionalism of Gayo coffee processors in Central Aceh, particularly the Suluh Muterang Group.

Recommendation

Future programs should focus on strengthening the sustainability and professionalism of the Suluh Muterang Group through several agendas, including diversifying markets, enhancing negotiation skills, and strengthening the group's bargaining position in the global market. Coffee processors should prioritize systematic financial bookkeeping and the formal



adoption of administrative Standard Operating Procedures (SOPs) to address improper administration as a primary risk agent, thereby enhancing operational efficiency and product quality. Simultaneously, the gradual implementation of written contracts is essential to establish a robust legal foundation against market volatility and unstable prices while navigating the socio cultural dilemmas associated with traditional verbal agreements. Village governments can facilitate this transition by serving as administrative hubs for P-IRT and UKM registration, directly addressing prevalent MSME weaknesses such as inadequate legal documentation and limited institutional support. Furthermore, relevant government agencies must provide site-specific mentoring and facilitate access to formal credit services, utilizing improved financial records as evidence of creditworthiness to overcome significant economic barriers. Through the consolidation of these multi-sectoral efforts, stakeholders can effectively transform informal processing units into resilient agro-industrial entities capable of sustainable market expansion and enhanced productivity.

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