

SUSTAINABLE FINANCIAL MANAGEMENT AND GREEN SUPPLY CHAIN OPTIMIZATION FOR FEMALE-EMPOWERED MSMES: A CASE STUDY OF NUTSAFIR COOKIES

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Abstract

This international community service article addresses the critical financial management gaps faced by socially responsible Micro, Small, and Medium Enterprises (MSMEs) in integrating sustainability costs within their daily business operations. While many MSMEs possess a noble social or environmental mission, traditional financial accounting systems fail to capture and evaluate "sustainability costs" such as fair-trade sourcing and social empowerment investments and often threatening the business's long-term survival. Focusing on Nutsafir Cookies (CV. Safir Indo Raya) in Mataram, Lombok, Indonesia as a prominent case study, this intervention program addresses challenges such as green supply chain volatility, the "green premium" of certifications, and financial risks in international cross-border trade. The methodology utilizes an in-depth qualitative case study approach combined with a five-phase implementation model: initial financial assessment, green budgeting mentorship, fair-trade costing formulation, gender-responsive financial literacy workshops, and continuous post-intervention evaluation. The findings reveal that transitioning from conventional cash-basis bookkeeping to strategic sustainable financial management allows the enterprise to mathematically optimize its Cost of Goods Sold (COGS). This enables the business to accommodate fair margins for local grain farmers without eroding corporate profitability. Furthermore, the financial literacy workshops significantly enhanced the economic resilience of the 100% female production workforce. Ultimately, this program demonstrates that sound sustainable finance frameworks are key catalysts for export-oriented MSMEs to align economic profit with social empowerment and environmental compliance, significantly boosting their competitiveness in the global market.

Keywords: Sustainable Finance, Green Supply Chain, MSME Empowerment, Fair-Trade Costing, Female Workforce

INTRODUCTION

Local economies and Micro, Small, and Medium Enterprises (MSMEs) play a fundamental role in achieving sustainable global development. Within developing economies, MSMEs are uniquely characterized by their operational agility, deep integration within local communities, and heavy reliance on indigenous resources and traditional knowledge. They act as essential drivers of job creation, poverty alleviation, and cultural preservation, directly contributing to the United Nations Sustainable Development Goals (SDGs), particularly SDG 5 (Gender Equality), SDG 8 (Decent Work and Economic Growth), and SDG 12 (Responsible Consumption and Production). However, despite their significant socioeconomic contributions, MSMEs frequently share common systemic

vulnerabilities: they typically operate with limited capital, face constraints in accessing formal financial institutions, and often lack structured, long-term managerial frameworks.

The urgency of conducting this International Community Service program stems from the critical transition phase many local businesses are currently facing. While numerous MSMEs possess strong social and environmental missions, such as empowering marginalized groups or utilizing eco-friendly materials, they often experience a severe gap in financial management. Traditional financial systems utilized by MSMEs typically focus solely on basic cash flow and standard profitability. These systems fail to capture and integrate "sustainability costs," such as fair-trade sourcing, environmental compliance, and social empowerment investments. Without strategic intervention from academics and practitioners, the noble pursuit of sustainability can inadvertently become a financial burden, threatening the survival and scalability of the business. Various studies have found that financial management practices (cash flow, investment, report analysis, inventory) are positively related to the sustainable growth of MSMEs and long-term stability (Arofani and Suryantara, 2025; Citrawati, et al, 2026). There is a pressing need to rethink how local communities can strengthen their economic activities while maintaining environmental and social well-being in a highly competitive global market.

This community service paper addresses this critical gap by proposing the integration of Sustainable Financial Management within the operational framework of green supply chains. By utilizing a real-world case study of an export-oriented, female-empowered MSME, this initiative demonstrates how adopting green budgeting and fair-trade costing can ensure MSMEs grow economically while maintaining their positive impact on local communities and the environment.

The targeted outcomes of this community service program are multi-faceted and practically oriented. First, the program aims to produce a customized "Green Budgeting" framework tailored for local MSMEs, enabling them to accurately calculate a sustainable Cost of Goods Sold (COGS) that accommodates fair-trade margins without sacrificing profit. Second, it targets a significant enhancement in the financial literacy of both the enterprise's management and its local workforce, thereby fostering broader community economic resilience. Ultimately, the program seeks to deliver actionable financial strategies that empower local entrepreneurs to improve their global competitiveness, ensuring that their responsible business practices translate into sustainable, long-term profitability. The implementation of green accounting helps manage the costs and benefits of environmental activities, improving financial performance as well as the sustainability performance of MSMEs (Indriastuti and Mutamimah, 2023).

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

1. Strategic Financial Management and MSME Sustainability

The capacity of an MSME to survive market disruptions heavily depends on its operational governance. Financial literacy strengthens decision-making and risk management skills, thereby supporting the sustainability of MSMEs (Dwyanti, 2024). When managers possess sophisticated financial competencies, they are more capable of navigating short-term cash crunches and making prudent long-term investment decisions that protect the business from volatile macroeconomic shifts.

2. Green Accounting and Environmental Collaboration

Transitioning toward sustainable manufacturing requires small businesses to rethink how ecological impacts are recorded. The implementation of green accounting acts as a bridge to manage the costs and benefits of environmental activities, improving financial performance as well as the sustainability performance of MSMEs (Indriastuti and Mutamimah, 2023). Furthermore, fostering environmental collaboration encourages green innovation capacity, which improves environmental performance and ultimately the financial performance of manufacturing MSMEs (Jo and Kwon, 2021).

3. Strategic Integration of Supply Chain Frameworks

To guarantee survival in an increasingly regulated global market, MSMEs must institutionalize corporate responsibility. The adoption of Green Supply Chain Management (GSCM) is mainly driven by external regulations, and improves the environmental performance of Indonesian SMEs (Dzikriansyah, 2023). Therefore, aligning ethical material procurement with cost efficiency ensures that sustainability metrics directly enhance, rather than hinder, the baseline commercial success of localized manufacturing businesses.

RESEARCH METHODS

To effectively implement sustainable financial management at Nutsafir Cookies, this community service program employs a structured, multi-phase methodology designed to transition theoretical financial concepts into practical, daily operational tools for the MSME. The program integrates qualitative assessments, hands-on financial training, and social empowerment workshops across a sequential five-phase framework:

- A. Case Study Approach and Initial Financial Assessment: The program begins with a comprehensive qualitative assessment of CV. Safir Indo Raya. This phase involves conducting in-depth interviews with the management team and auditing current financial recording practices. The goal is to map the existing financial flow, from the

procurement of local agricultural grains to the final sales of various packaging options, which range from Rp25,000 pouches to premium hampers reaching up to Rp700,000. This initial diagnosis identifies the specific financial bottlenecks related to fair-trade sourcing and the overhead costs of maintaining hygienic processing standards, BPOM, and Halal certifications.

- B. Financial Mentorship and Green Budgeting Training: Following the assessment, a targeted financial mentorship program is conducted for the core management team. The practical activities in this phase include: (a) Financial Restructuring Workshop, guiding the management to transition from basic single-entry bookkeeping to a standardized double-entry system that categorizes sustainability investments as assets rather than mere expenses; and (b) Green Budgeting Simulation, training the team to create a dedicated budget for environmental compliance, including financial planning for eco-friendly packaging transitions and calculating the financial savings generated from minimizing production waste.
- C. Fair-Trade Costing Analysis Implementation: This phase focuses on optimizing the green supply chain through precise pricing strategies. The community service team collaborates with Nutsafir's financial staff to develop a dynamic Cost of Goods Sold (COGS) calculation tool using spreadsheet software. The specific activities include: (a) Fair-Trade Margin Integration, inputting the fair purchasing prices of local grains (such as Mung Bean, Kidney Bean, Cashew, and Lebui) into the COGS formula to ensure local farmers receive equitable compensation without jeopardizing the company's profit margin; and (b) Export Pricing Strategy, simulating cross-border logistics costs, platform fees, and currency exchange risks to establish competitive yet profitable pricing for products sold through the Shopee Export Program.
- D. Gender-Responsive Financial Literacy Workshops: Recognizing that 100% of Nutsafir's production workforce consists of local women, the final phase shifts the focus from corporate finance to personal financial empowerment. The activities involve interactive workshops tailored for the female factory workers, covering: (a) Household Financial Management, educating workers on budgeting, separating daily consumption funds from productive savings, and managing debt; and (b) Micro-Investment Governance, introducing accessible micro-investment tools and establishing a framework for a worker-led cooperative to build long-term economic resilience for their families.
- E. Program Implementation Flowchart: The precise execution steps of the community service intervention are mapped and monitored through a centralized dashboard.

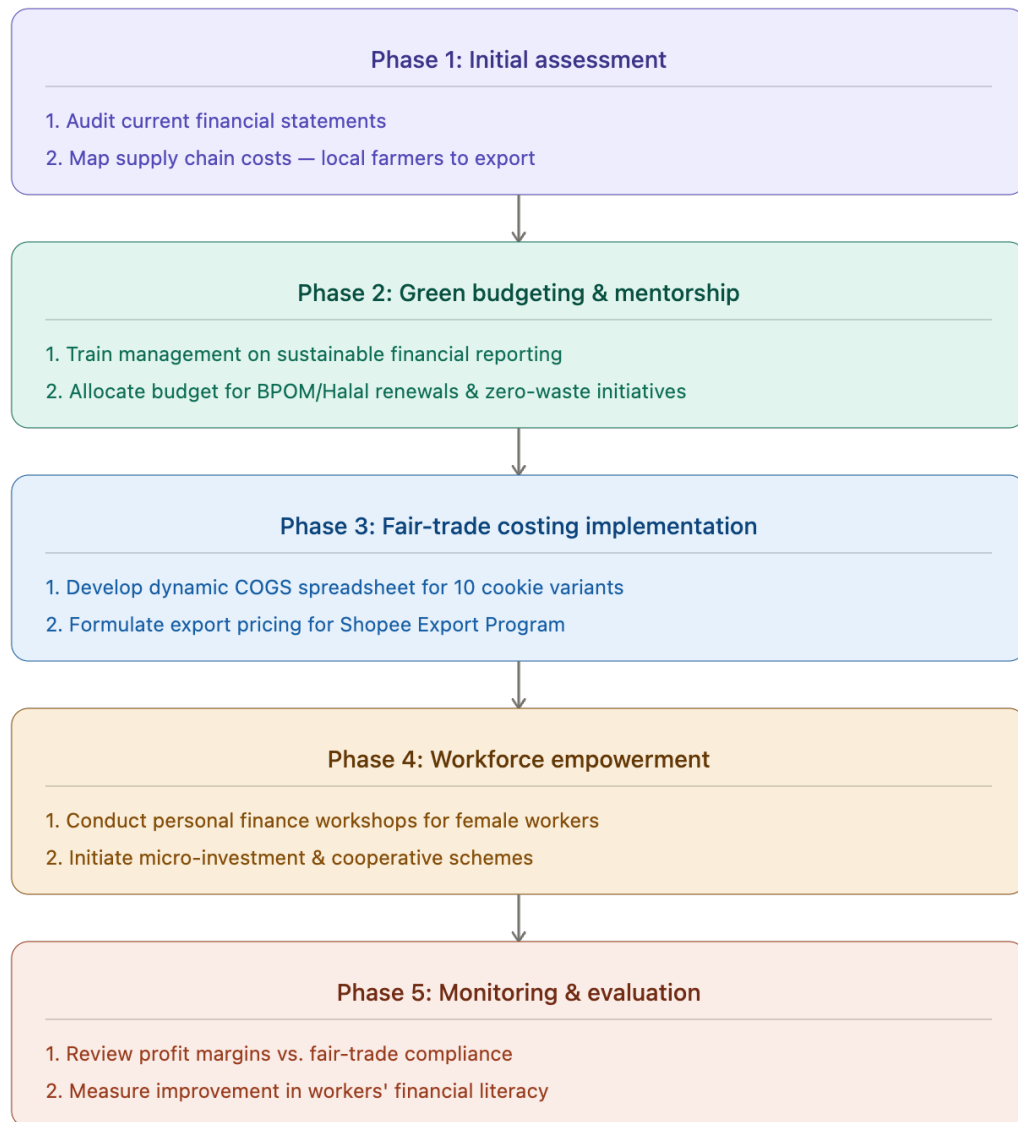


Figure 1. Implementation Framework of the International Community Service Program at Nutsafir Cookies

RESULTS AND DISCUSSION

1. Background and Context of the Selected Partner

Nutsafir Cookies, operating under CV. Safir Indo Raya, is a prominent halal-certified snack manufacturer headquartered in Mataram, Lombok, West Nusa Tenggara. Founded on September 11, 2012, by Sayuk Wibawati, the company focuses on producing nutritious, grain-based cookies utilizing indigenous crops. The brand ensures its delicacies are free from preservatives, artificial colors, and artificial sweeteners.

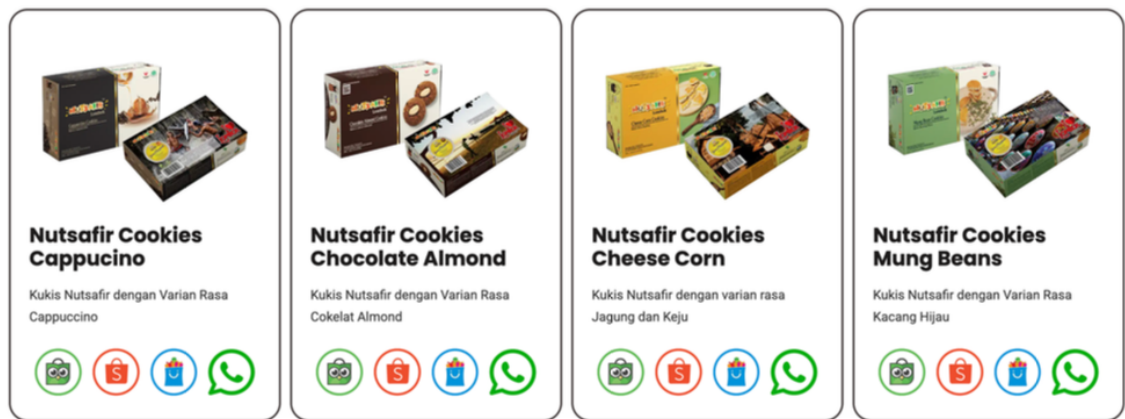


Figure 2. Nutsafir Product Portfolio & Quality

A key pillar of the company's core identity is its profound social mission: 100% of its production workforce consists of local women, demonstrating a strong commitment to economic empowerment and gender equality. Furthermore, Nutsafir sources its high-quality agricultural grains directly from local Lombok farmers, uplifting the local agricultural sector. The company's excellence is widely recognized, having won numerous awards including the 1st Winner in Halal Awards 2017 as The Best Halal SME in Indonesia and the 1st Winner of Sidhakarya 2020.



Figure 3. MSME Profile and Product Performance

2. Analysis of Existing Financial Vulnerabilities

Despite the operational success of socially conscious MSMEs, integrating environmental and social missions into everyday business operations presents complex financial challenges. Financial literacy strengthens decision-making and risk management skills, thereby supporting

the sustainability of MSMEs (Dwyanti, 2024). For enterprises like Nutsafir Cookies, which operates with a profound commitment to local empowerment and sustainability, traditional financial management models often fall short. The primary challenges can be categorized into supply chain volatility, the "green premium" of production, overhead costs of social impact, and the financial pressures of global expansion.

First, managing the complexities of a green supply chain introduces significant cash flow volatility. Sourcing high-quality agricultural grains directly from local Lombok farmers means the company is directly exposed to seasonal harvest fluctuations and raw material price instability. Unlike large corporations that can leverage long-term contracts or credit terms, MSMEs often have to pay suppliers upfront to maintain fair-trade principles, which can strain daily liquidity. Second, there is a financial challenge associated with the "green premium" in production. Nutsafir strictly processes its local delicacies from indigenous crops without the use of preservatives, artificial colors, or artificial sweeteners. While this ensures high product quality, it typically shortens the product's shelf life, necessitating faster inventory turnover rates and tighter logistics control. This requires sophisticated working capital management to avoid financial losses from expired inventory. Furthermore, maintaining stringent hygienic processing standards to hold full BPOM and Halal certifications requires continuous capital expenditure in facility upgrades and administrative renewals, which traditional MSME accounting often views as burdensome sunk costs rather than brand investments.

Third, the allocation of costs for social impact requires a delicate financial balancing act. Operating a production facility where 100% of the workforce consists of local women means the company must integrate specialized capacity-building, workplace safety, and community support into its operational budget. Traditional financial statements struggle to quantify the long-term Return on Investment (ROI) of these social overheads, making it difficult to analyze true profitability. Environmental collaboration encourages green innovation capacity, which improves environmental performance and ultimately the financial performance of manufacturing MSMEs (Jo and Kwon, 2021). Lastly, as MSMEs transition from local to global markets, new financial risks emerge. Nutsafir has expanded into the international market through the Shopee Export Program. This global expansion introduces cross-border financial complexities, including foreign exchange rate risks, international shipping fees, and delayed receivables, which demand a more advanced level of financial risk management than a typical local enterprise possesses.

3. Intervention Impact and Optimization Outcomes

To overcome the multifaceted challenges mentioned above, MSMEs must transition from conventional bookkeeping to strategic Sustainable Financial Management. This integration involves embedding financial decision-making directly into the green supply chain, ensuring that every step is both economically viable and socially responsible.

The first critical integration is the implementation of "Green Budgeting" and dynamic Cost of Goods Sold (COGS) analysis. The adoption of GSCM is mainly driven by external regulations, and improves the environmental performance of Indonesian SMEs (Dzikriansyah 2023). By adopting an adaptive pricing model, an MSME can absorb the price shocks of fair-trade agricultural sourcing while keeping the final product competitive. For Nutsafir, this means structuring the costs of their 10 variants (including Mung Bean, Cashew, and Lebui) in a way that protects farmer margins without eroding the company's profitability. This can be achieved by offsetting raw material costs through circular economy practices, such as minimizing waste in the production line, which is then quantified as direct cost savings in the financial statements.

Second, sustainable finance must redefine how certification and quality control are valued. The investments required to process cookies hygienically and maintain BPOM and Halal certifications should be capitalized as brand equity assets rather than mere operational expenses. By conducting a rigorous Cost-Benefit Analysis, the financial management team can justify these upfront "green premiums" by projecting long-term gains in brand trust, which allows for premium pricing strategies. This is clearly reflected in Nutsafir's ability to offer products in various flexible packaging options, ranging from Rp25,000 pouches to premium hampers reaching up to Rp700,000.

Furthermore, to support the social mission of empowering local women, sustainable financial management includes establishing micro-investment governance and localized profit-sharing schemes. By treating workforce development as a strategic financial investment, the company fosters higher productivity and lower turnover rates, which ultimately stabilizes long-term operational costs. Finally, optimizing the green supply chain for the international market requires robust export financial strategies. To support initiatives like the Shopee Export Program, MSMEs must integrate basic financial hedging and secure cross-border payment gateways to protect their margins from currency fluctuations. By aligning international expansion goals with sound financial risk management, MSMEs can ensure that their responsible entrepreneurship models are not only sustainable at the local level but also highly competitive and profitable on the global stage.

CONCLUSION

The transition toward sustainable financial management should not be viewed as a mandatory cost burden, but rather as a strategic investment that fundamentally strengthens the global competitiveness of MSMEs like Nutsafir Cookies. This community service program demonstrates that optimizing a green supply chain must go hand-in-hand with social equity and robust management practices. Integration of sustainability in the MSME supply chain (economic, environmental, social dimensions) is seen as important in the MSME operating strategy (Kot, 2018) and needs to be supported by strong financial governance, financial literacy, and appropriate financial technology (Desiyanti, 2023).

By shifting the financial paradigm from traditional bookkeeping to green budgeting, enterprises can accurately value their environmental efforts and compliance standards—such as BPOM and Halal credentials—transforming them into premium brand equity assets for both domestic and international markets. Furthermore, integrating a fair-trade costing analysis allows the company to absorb the costs of ethical sourcing from local farmers while maintaining profitability, which is seamlessly paired with a gender-responsive financial literacy framework that directly empowers its 100% female production workforce.

Ultimately, this integrated approach proves that businesses can successfully align economic profitability with social empowerment and environmental preservation. The strategic alignment of sound corporate finance with community-driven initiatives ensures that local economies remain a strong, resilient foundation for inclusive and sustainable global development. As MSMEs continue to expand their reach from local markets to global digital platforms via export programs, adopting adaptive sustainable financial frameworks serves as the critical catalyst. This synergy not only secures long-term business continuity and lowers operational risks, but also actively contributes to the broader objectives of the United Nations Sustainable Development Goals (SDGs), effectively reimagining the role of local economies on the global stage.

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