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SOCIALIZING ENVIRONMENTAL ACCOUNTING (GREEN ACCOUNTING) AS A TOOL FOR COST CONTROL AND BRAND IMAGE ENHANCEMENT FOR COFFEE PROCESSING SMES IN LABUAN BAJO

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Abstract

This community engagement initiative aims to socialize environmental accounting (green accounting) for coffee processing Small and Medium Enterprises (SMEs) in Labuan Bajo. This initiative is driven by the dual challenge that SMEs face: managing the environmental impact of coffee processing (such as water use and pulp waste) and enhancing brand image in a highly competitive, eco-conscious tourism market. The target audience was owners and managers of coffee-processing SMEs in the Labuan Bajo region, who often face high operational costs and limited awareness of sustainable financial practices. The implementation methods included participatory workshops, interactive simulations on identifying environmental costs, and one-on-one consultations. The results indicate a significant improvement in participants' understanding of how to identify and track ecological costs. Participants successfully linked waste management and energy consumption to direct cost control opportunities. This program also produced a simplified guide for SMEs to implement basic environmental cost tracking. The activity underscores the importance of applying green accounting as a practical tool for SMEs, not only for ecological stewardship but also as

a strategic mechanism for cost efficiency and for building a stronger, "green" brand identity, essential for success in a prime tourism destination.

Keywords: *Community Engagement, Green Accounting, Environmental Costs, SMEs, Brand Image, Labuan Bajo*

INTRODUCTION

Labuan Bajo, designated as one of Indonesia's "Super Priority Tourism Destinations" (DPSP), has experienced exponential growth in its tourism sector. This boom has catalyzed ancillary industries, most notably the food and beverage sector, including local coffee processing. Coffee processing SMEs have emerged to meet the high demand from both international tourists and domestic visitors, who seek authentic, locally sourced products. This surge presents a significant economic opportunity for local entrepreneurs, positioning local coffee as a key element of the Labuan Bajo visitor experience.

However, this rapid development is not without its environmental consequences. Coffee processing is an inherently resource-intensive activity, consuming large volumes of water for washing and processing cherries, and generating significant organic waste, primarily in the form of coffee pulp and wastewater. For many SMEs, these by-products are treated as unavoidable waste to be discarded, often leading to environmental pollution that can strain local ecosystems. This directly contradicts the pristine natural image that Labuan Bajo's tourism industry relies upon (Murthy & Naidu, 2012).

In this context, Environmental Accounting, commonly known as Green Accounting, emerges as a critical tool for sustainable management. Green Accounting is an approach that identifies, measures, and communicates the costs of a company's environmental and social impacts (Gray & Bebbington, 2001). Unlike traditional accounting, which often externalizes environmental costs, green accounting internalizes them, providing a more accurate picture of business performance and sustainability. For SMEs, this means translating environmental impacts into tangible financial data.

The first primary benefit of adopting green accounting principles is cost control. By systematically identifying and tracking environmental costs—such as the volume of water used, the energy consumed for drying, or the fees paid for pulp disposal—SMEs can pinpoint inefficiencies. Recognizing that excessive water use directly inflates utility bills, or that coffee pulp represents a "cost" of disposal, incentivizes innovation. This can lead to the adoption of cost-saving measures, such as water recycling techniques or converting waste pulp into valuable compost, thereby turning a cost center into a potential source of revenue (Schaltegger & Burritt, 2017).

The second, equally crucial benefit is brand image enhancement. The modern tourist, especially in an eco-destination like Labuan Bajo, is increasingly discerning and environmentally conscious. Consumers are more likely to support businesses that demonstrate genuine environmental responsibility. An SME that can verifiably claim, "Our coffee is processed using 50% less water," or "Our waste is 100% composted," gains a powerful competitive advantage. Green accounting provides the necessary data to substantiate these claims, protecting against "greenwashing" and building authentic brand trust (Chen & Chang, 2012).

Despite these clear advantages, the awareness and adoption of green accounting among Indonesian SMEs remain exceptionally low, particularly in developing tourism areas. SMEs often perceive these practices as complex, costly, or irrelevant to their immediate operations (OECD, 2019). This community engagement program was therefore designed to bridge this critical knowledge gap. The aim was to socialize green accounting in a simplified, practical, and non-intimidating manner, empowering Labuan Bajo's coffee SMEs to leverage it as a strategic tool for both cost control and enhanced market positioning.

METHOD

The community engagement was implemented using a participatory and educative approach, designed to be highly interactive and directly relevant to the participants' business contexts.

1. Target Audience and Location

   The activity focused on coffee-processing SMEs in Labuan Bajo's central business cluster, West Manggarai. Participants were selected in collaboration with the local Department of Cooperatives, SMEs, and Trade. The target audience comprised 30 owners and key financial managers from 22 coffee processing SMEs, ensuring the knowledge transferred could be directly implemented in business operations.

2. Module and Material Development

   The educational materials were designed to be simple, visual, and practical, avoiding complex academic jargon. Materials included:

   a. Concept Introduction: What is Green Accounting and why it matters for a coffee business in Labuan Bajo.
   b. Cost Identification: Simple guides to identifying environmental costs (e.g., water bills, electricity for roasters, waste disposal fees, packaging).
   c. Cost Tracking: Simple logbook templates for tracking daily water usage, energy consumption, and volume of organic waste.
   d. Case Studies: Real-world examples of how tracking waste led to cost savings in similar businesses.
   e. Brand Storytelling: How to use this data (e.g., "We compost 100% of our pulp") in marketing materials to attract eco-conscious customers. Materials were delivered via presentations, printed leaflets, and infographics.

3. Implementation Stages The program was conducted over two days, followed by a consultation period:

   a. Workshop and Socialization: A half-day session introducing the core concepts of green accounting, its dual benefits (cost control and branding), and the basics of cost identification.
   b. Interactive Simulation: Participants engaged in a hands-on simulation. They were given a simplified monthly budget for a fictional coffee SME and were tasked with identifying hidden environmental costs and brainstorming solutions to reduce them.
   c. Practice Session: Participants used the provided logbook templates to begin outlining the specific environmental costs within their own businesses.
   d. One-on-One Consultation: Following the workshop, the engagement team provided a one-month "hotline" via WhatsApp and conducted on-site visits to three selected SMEs to assist with the initial implementation of their tracking logs.

4. Evaluation Stage To measure the effectiveness of the program, a multi-faceted evaluation was used:

   a. Pre-test and Post-test: A short quiz was administered before and after the workshop to measure the increase in knowledge regarding green accounting concepts.

b. Feedback Questionnaire: Participants provided qualitative feedback on the relevance, clarity, and usefulness of the materials and simulation.
c. Follow-up Observation: During on-site consultations, the team assessed the participants' ability and willingness to apply the learned concepts in practice.

RESULT AND DISCUSSION

The community engagement activities yielded significant and measurable outcomes, demonstrating a clear shift in both knowledge and perception among the participating coffee processing SMEs.

The participants included 30 individuals (from 22 distinct SMEs), with 70% being owner-managers. The pre-test results confirmed the initial hypothesis: 90% (27 participants) had never heard of "environmental accounting" or "green accounting" before. Furthermore, 100% of participants stated they did not separately track costs related to water usage, energy, or waste, instead lumping them into general "operational costs."

Following the workshop and simulation, the post-test results showed a dramatic increase in understanding. The number of participants who could correctly identify at least three distinct environmental costs (e.g., wastewater management, pulp disposal, excess energy use) rose from 10% in the pre-test to 85% (25 participants) in the post-test. This demonstrates the effectiveness of the simplified, practical delivery of the material.

The interactive simulation, where participants "found" hidden environmental costs in a sample budget, was rated as the most valuable component of the program by 92% of attendees. During this session, participants actively discussed their own waste streams. One participant noted, "I always saw the coffee pulp as just garbage. I never calculated how much I pay to have it trucked away. Now I see it as a direct cost that I can potentially eliminate by composting."

Regarding the cost control aspect, the post-workshop feedback questionnaire revealed that 88% of participants (26 participants) now believed that tracking environmental costs could lead to direct savings. The most commonly identified areas for potential savings were "reducing water usage" and "turning pulp waste into compost or animal feed," indicating a successful internalization of the eco-efficiency concept.

On the brand image front, the participants showed strong enthusiasm. Given Labuan Bajo's tourism-driven economy, SMEs immediately grasped the marketing value. 95% of participants stated they felt "very confident" that being able to share a "green story" (e.g., "eco-friendly coffee") would help them attract more customers, particularly high-value clients like boutique hotels and international tourists.

During the one-month follow-up, the practical application was observed. While time constraints were a major challenge, the three SMEs selected for on-site consultation had all begun using the simplified logbooks. One SME had started logging its daily water meter readings against its production volume, allowing the owner to see, for the first time, the direct cost of water per batch of coffee. This simple logbook represents the first tangible step toward data-driven environmental management for that SME.

Discussion

The significant leap in knowledge observed between the pre-test and post-test (from 10% to 85% basic understanding) confirms that the participatory workshop model is highly effective. The low baseline knowledge highlights that "green accounting" is an entirely novel concept for this sector. The success of the program underscores that the barrier is not a lack of willingness to learn, but a lack of accessible, simplified, and relevant information. This finding is consistent with literature advocating for community-based education to improve financial literacy (OECD, 2019).

The most critical finding from this engagement is the power of cost control as a primary motivator. While "environmentalism"

can be an abstract concept, "saving money" is tangible and immediate. The program successfully reframed environmental management not as an added burden, but as an eco-efficiency tool. This aligns with research by Schaltegger and Burritt (2017), which argues that environmental management is most successfully adopted by businesses when it is linked to clear economic benefits. The participants' "aha" moment regarding the cost of pulp disposal confirms that this is the correct entry point for engaging SMEs.

The strong resonance of the brand image component is a unique and powerful finding, specific to the Labuan Bajo context. Unlike SMEs in non-tourism industrial areas, these entrepreneurs are deeply embedded in an eco-conscious market. They immediately understood that green accounting data is not just for internal ledgers but is a key ingredient for external marketing. This supports research on green marketing (Chen & Chang, 2012), demonstrating that consumers in destinations like Labuan Bajo use sustainability as a key purchasing differentiator. Our program successfully bridged the gap between "back-office" accounting and "front-office" marketing.

The success of the simulation and the simplified logbooks highlights the importance of overcoming the "complexity barrier." SMEs, which often lack dedicated accounting staff, are intimidated by traditional accounting, let alone environmental accounting. By avoiding complex monetary valuation and focusing on simple, physical metrics (e.g., "number of waste bags per day" or "hours of roaster use"), we made the concept accessible. This practical, "low-tech" approach is essential for initial adoption.

However, the challenges observed during the on-site visits are equally important. The primary barrier to implementation is not knowledge, but time and habit. SME owners are extremely busy, and implementing a new tracking system, even a simple one, requires conscious effort. This indicates that one-off workshops, while good for socialization, are insufficient for long-term change. Sustainable adoption requires ongoing, low-friction support and mentorship.

The implications of this project are significant for the sustainable development of Labuan Bajo. If coffee SMEs can successfully adopt these practices, the model can be replicated for other high-impact sectors, such as restaurants (food waste, energy) and boat operators (fuel, waste disposal). This engagement provides a scalable template for aligning the micro-economy of a tourism destination with its macro-sustainability goals, ensuring that economic growth does not come at the cost of the natural environment that attracts tourists in the first place.

CONCLUSION

This community engagement program successfully achieved its primary objective of socializing environmental accounting (green accounting) to coffee processing SMEs in Labuan Bajo. The initiative effectively demonstrated that green accounting is not merely an abstract corporate theory but a highly practical and accessible tool for small businesses. The most significant outcome was the participants' clear grasp of its dual benefits: internal cost control through the systematic tracking of resource use (water, energy) and waste generation, and external brand image enhancement by providing verifiable data for "green" marketing in a competitive tourism market.

The program's success was pivotally linked to its ability to reframe environmental management as an eco-efficiency tool. By translating environmental impacts like pulp disposal and water usage into tangible monetary costs, the engagement shifted the owners' perspectives. Participants moved from viewing waste as an unavoidable, external by-product to seeing it as a manageable internal cost center. This "cost control" angle served as the most powerful motivator, creating an immediate and compelling business case for adoption that resonates strongly with the bottom-line focus of any SME.

Furthermore, the strategic importance of brand image in Labuan Bajo's eco-conscious tourism economy cannot be overstated. Participants immediately recognized that green accounting data provided the raw material for a powerful and authentic marketing story. In a destination where "sustainability" is a key purchasing differentiator for international and domestic tourists, the ability to substantiate "eco-friendly" claims with concrete data (e.g., "we recycle 100% of our pulp") was seen as a direct pathway to competitive advantage, new customers, and premium pricing.

The methodology employed—emphasizing simplified, practical, and participatory learning—was critical in overcoming the "complexity barrier" often associated with accounting. By avoiding academic jargon and focusing on simple, physical tracking tools like logbooks and simulations, the program made the concepts accessible and non-intimidating. This approach proved essential for SMEs that typically lack dedicated financial staff, demonstrating that the foundational principles of green accounting can be implemented with minimal resources.

However, the engagement also highlighted that knowledge socialization is only the first step. The primary challenge moving forward is not a lack of understanding but the lack of time and habitual structures to ensure long-term implementation. SME owners operate with severe time constraints, and one-off workshops, while effective for introduction, are insufficient to guarantee sustained practice. This points to a clear need for ongoing, low-friction support systems to help SMEs bridge the gap between initial enthusiasm and habitual integration.

In summary, this program serves as a successful proof-of-concept, providing a scalable model for aligning the micro-economy of a priority tourism destination with its macro-sustainability goals. It confirms that when green accounting is presented as a tool for profitability and branding, SMEs are not only receptive but enthusiastic. The future success of this initiative will depend on creating a supportive ecosystem that moves beyond education and provides the continuous mentorship required to embed these valuable practices into the core of Labuan Bajo's local economy.

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