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Strengthening Ina Chip Microenterprise through Production Improvement, Packaging Innovation, and Marketing Development

[1]Widya Adhariyanty Rahayu*, [1]Widi Dewi Ruspitasari, [1]Ida Nuryana
[1]Institut Teknologi dan Bisnis Asia Malang, Indonesia
*Corresponding author
E-mail: widyariyanty@asia.ac.id

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Abstract

Purpose: This community engagement program aimed to strengthen Ina Chip's fruit-chip production, packaging and labelling, and marketing practices.

Method: The program employed a participatory approach involving preparation, socialization, practical training, mentoring, and evaluation. Activities focused on fruit preparation and slicing, vacuum frying, oil removal, sealing, product labelling, and marketing development.

Practical Applications: The program provided practical guidance on production processes, packaging equipment, label development, and marketing practices. These activities were intended to help the partner improve production consistency, product presentation, and business development.

Conclusion: The program addressed three interconnected areas of microenterprise development: production, packaging and labelling, and marketing. Although the project report recorded the program's output indicators as achieved, it did not provide quantitative evidence of changes in product quality, sales, or market reach. Further monitoring is needed to assess the sustainability and business impact of the intervention.

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Introduction

Micro, small, and medium-sized enterprises (MSMEs) play an important role in local economies by creating livelihoods and adding value to locally available resources. For food-processing businesses, converting fresh agricultural products into processed snacks can create additional value, but the business opportunity depends on product consistency, safe handling, attractive packaging, and access to markets. Food value-chain development requires attention not only to production but also to the relationships between processing, product presentation, distribution, and consumer demand (Food and Agriculture Organization of the United Nations [FAO], 2014).

Community engagement programs can support local capacity building through context-specific training and participatory learning activities. For example, Rahayu et al. (2025) reported a community engagement program involving bilingual inquiry-based mathematics games for teachers and students at SDN 1 Taji, Malang. Although the program focused on educational activities rather than food processing, it provides a local example of community-based capacity building in the Taji area. Building on the importance of context-specific community engagement, the present program focuses on improving production practices, packaging, and marketing at the Ina Chip microenterprise.

Ina Chip is a microenterprise engaged in producing fruit chips from local fruit. The community engagement report identifies several development constraints: production techniques that have not consistently produced uniform quality, basic packaging and labeling, limited marketing beyond direct and local sales, and a continuing need for product innovation and business-development support. These constraints are connected. Product quality is a central element of consumer evaluation, while packaging can protect a product and communicate information and brand identity (Robertson, 2013; Silayoi & Speece, 2007).

Marketing development also requires more than making a product available. Small businesses need to understand customer value, communicate product benefits, and select channels that fit their capacity and target market (Kotler & Keller, 2016). Digital channels may offer additional visibility, although their effectiveness depends on the enterprise's ability to maintain content, respond to customers, and manage orders. Innovation and adoption of new practices are more likely to be sustained when business owners can test and incorporate them into everyday routines (Rogers, 2003).

Despite the importance of production quality, packaging, and marketing for food-processing microenterprises, these aspects need to be addressed in an integrated manner within the operational context of individual businesses. This community engagement program therefore aimed to support Ina Chip through practical activities focusing on fruit-chip production, packaging and labeling, and marketing development. The article describes the implementation process and reported outputs while acknowledging the limitations of the available evaluation evidence. It also identifies monitoring measures that could be used to assess the program's longer-term contribution to business performance.

Method

The program used a participatory community-engagement approach. The partner, Ina Chip, was expected to take an active role in identifying needs, participating in practical activities, applying the training, and providing feedback. Participatory approaches are useful when interventions are intended to respond to local needs and build the capacity of the people who will continue the work after external support ends (Pretty, 1995).

The project report identifies the implementation stages as preparation, socialization, practical training, mentoring, and evaluation. Preparation involved observing the business, identifying partner needs, preparing training materials, and coordinating schedules. Socialization introduced the potential for fruit-chip development, the importance of sound production practices, and marketing opportunities. Practical training addressed fruit processing, packaging, and labeling. Mentoring was intended to support the application of the

practices in routine production and marketing, while evaluation relied on observation and discussion.

The technical guidance described in the report included sorting and washing fruit, peeling and slicing, vacuum frying, removing excess oil with a spinner, cooling, sealing, and labeling. The equipment described included a fruit slicer, vacuum fryer, spinner, and impulse sealer. These steps were presented as practical options for supporting more uniform slices, product texture, oil removal, and sealed packaging. Food processing and packaging choices should be matched to the food product, handling conditions, and intended shelf life rather than treated as interchangeable solutions (Fellows, 2017; Robertson, 2013).

The source document states that the activity was funded internally by Institut Teknologi dan Bisnis Asia Malang and identifies two lecturers and two student participants in the implementation team. It does not consistently specify the actual number of community participants or provide a complete dated activity log. Accordingly, this article does not assign a definitive participant count or claim a particular duration beyond the project report's stated implementation period.

The report describes evaluation through observation and discussion, with attention to knowledge, practical skills, product quality, packaging, and marketing. However, no validated instrument, numerical pre-test/post-test results, sales data, or shelf-life measurements are supplied. The results below therefore distinguish reported program outputs from impacts that would require further measurement.

Result

The production improvement component of the community service program primarily focused on optimizing the fundamental processes used to manufacture high-quality fruit chips. To achieve this goal, the project document provided comprehensive practical guidance regarding appropriate processing techniques tailored to the specific needs of the microenterprise. A detailed workflow was established to cover every critical stage of production, starting from careful fruit selection and ending with final preparation for the market. This structured approach ensured that the partner understood the sequential importance of each step in maintaining the overall quality of the final product.

The initial stages of the proposed workflow emphasized the necessity of rigorous preparation, which included thorough washing, peeling, and precise slicing of the raw fruits. During the slicing phase, the project team introduced a specialized mechanical slicer to replace traditional manual cutting methods that were previously utilized by the partner. The primary intention behind deploying this slicer was to support a much more consistent slice thickness across all batches of the produced fruit chips. Achieving uniform thickness is a critical technical requirement because it directly influences the evenness of the cooking process and the final texture of the snack.

Following the preparation stage, the program introduced advanced thermal processing methods, specifically highlighting the implementation of vacuum frying technology for the microenterprise. Vacuum frying was selected as a highly relevant equipment option because it allows the fruit to be cooked at lower temperatures, thereby preserving its natural color and nutritional value. In addition to the frying process, a mechanical spinner was introduced to the workflow as a vital tool for effective oil reduction immediately after the chips are cooked. By efficiently removing excess surface oil, the spinner helps to improve the crispiness of the chips while simultaneously reducing the overall fat content of the final product.

While these technical components are thoroughly documented in the project report as significant operational upgrades, there are notable limitations regarding the empirical validation of these improvements. Specifically, the source documentation does not include any formal laboratory tests that were conducted to objectively measure the outcomes of the new processing techniques. Furthermore, there are no measured comparisons provided regarding critical quality parameters such as the specific texture, color retention, or exact oil content of

the fruit chips. The absence of scientific evaluations concerning the product shelf life also means that the long-term stability of the chips remains an assumed benefit rather than a verified fact.

Transitioning from production to product presentation, the program directly addressed the partner's previous reliance on very simple and rudimentary packaging and labeling methods. Before the intervention, the microenterprise utilized basic plastic bags that offered minimal protection and lacked any professional branding or detailed product information. To rectify this issue, the reported support included the procurement and training on the use of an impulse sealer to ensure that each package was tightly closed. Alongside the sealing equipment, the project team assisted in the development of newly designed product labels that were intentionally crafted to be both more attractive and highly informative for potential buyers.

The strategic shift in packaging design is grounded in established marketing theories that highlight the multifaceted role of product containers in consumer goods. As noted in the literature (Silayoi & Speece, 2007), packaging serves a dual function by acting not only as a protective barrier for the physical product but also as a crucial communication tool. This communication function is essential because the visual design and informational content of the package actively shape consumer expectations before they even taste the product. Consequently, investing in better packaging and labeling directly influences consumer purchase decisions and helps differentiate the microenterprise chips from competing local snacks.

Despite the clear theoretical benefits of the new packaging strategy, the project report exhibits certain deficiencies in terms of comprehensive visual and analytical documentation. Notably, the report does not provide any before-and-after photographs that would allow external reviewers to visually assess the scale of the aesthetic and functional improvements. Additionally, there is a distinct lack of detailed label specifications, which leaves the exact materials, dimensions, and graphic elements of the new design somewhat ambiguous. The absence of consumer testing and packaging-integrity measurements further limits the ability to independently assess how effectively the new packaging performs in real-world market conditions.

Beyond the physical production and packaging of the fruit chips, the program also included a dedicated marketing and business development component to address commercial challenges. This specific component was developed in direct response to the report's identification that the partner's sales were heavily concentrated in direct, face-to-face transactions and strictly limited local networks. To overcome this geographical and relational limitation, intensive mentoring was provided to help the partner consider and implement broader strategies for expanding sales opportunities. The ultimate objective of this mentoring process was to significantly improve the overall competitiveness of the product in a much wider and more diverse commercial landscape.

The approach taken toward marketing development is highly consistent with broader academic perspectives on strategic business management and consumer engagement. According to Kotler and Keller (2016), effective marketing decisions must seamlessly connect specific product attributes with identified customer needs through targeted communication and optimized distribution channels. By applying these foundational principles, the mentoring sessions aimed to help the microenterprise align the unique qualities of their fruit chips with the broader demands of the snack market. Understanding this connection is vital for microenterprises looking to transition from subsistence-level selling to establishing a sustainable and scalable commercial presence.

In evaluating the overall success of the intervention, the project report officially marks its specific output indicators as fully achieved by the conclusion of the program. These marked indicators include improved partner knowledge and skills, better product quality, enhanced packaging and labeling, stronger marketing capabilities, and comprehensive activity

documentation. While these entries certainly provide evidence of the project team's reported completion status and their perceived success, they must be interpreted with a degree of critical caution. Because supporting measurements and detailed evaluation records are noticeably missing from the supplied document, these indicators should not be misconstrued as definitive proof of a measured increase in revenue, customer acquisition, or other quantifiable economic impacts.

Discussion

The main value of the intervention lies in its highly integrated focus on multiple business areas. Production, packaging, and marketing are frequently treated as entirely separate business functions in traditional models. However, significant weaknesses in any single area can drastically reduce the overall value of improvements made in another. Therefore, a holistic approach is essential for sustainable microenterprise development.

Better processing practices may successfully support greater product consistency and quality. Nevertheless, the tangible benefit to customers can be severely weakened if the packaging fails to adequately protect the product. Furthermore, poor packaging will fail to communicate relevant and necessary information to the target market. This demonstrates that isolated improvements are insufficient without systemic coordination.

Similarly, attractive packaging alone is highly unlikely to sustain long-term business growth. If the underlying product quality is inconsistent, customers will not return regardless of how appealing the exterior appears. Marketing activities must also be consistent and aligned with the actual capabilities of the production team. A value-chain perspective therefore strongly supports coordinating these components rather than addressing them in isolation (FAO, 2014).

The practical, hands-on format of this program is highly appropriate for a small enterprise setting. Participants can much more easily relate abstract technical guidance to their actual, daily workflow. This direct application bridges the gap between theoretical knowledge and practical, on-the-ground execution. Consequently, the training becomes immediately relevant to the specific operational challenges faced by the microenterprise.

Training is significantly more likely to become a permanent routine when it is followed by ample opportunities to practice. Participants must also receive constructive feedback to correct minor errors before they become ingrained habits. Additionally, they need the flexibility to adapt new procedures to their unique local operating conditions. This iterative process ensures that the new methods are both practical and sustainable over time.

From a broader innovation perspective, the successful adoption of new methods depends heavily on several key factors. It requires the perceived usefulness and compatibility of a new practice with existing workflows. Furthermore, there must be a genuine opportunity for the participants to learn through direct, hands-on experience (Rogers, 2003). Without these elements, even the most well-designed interventions may fail to gain traction.

Because of these adoption dynamics, continued mentoring may be critically important after the formal training period officially ends. Ongoing support helps the microenterprise navigate unforeseen challenges that arise during real-world implementation. Mentors can provide timely troubleshooting and reinforce the correct application of the newly learned skills. This sustained engagement significantly increases the likelihood of long-term behavioral and operational change.

Packaging improvement should be fundamentally understood as both a technical and a marketing task. On the technical side, the seal and packaging material must be strictly suitable for the specific product and its handling conditions. On the marketing side, the label design should present clear, accurate, and highly useful product information to the consumer. Neglecting either aspect compromises the overall effectiveness of the packaging strategy.

Extensive research on food packaging shows that visual elements and provided information can significantly influence consumer responses. However, these effects can vary

widely depending on the specific product type and the broader consumer context (Silayoi & Speece, 2007). Therefore, future assistance should combine practical, technical packaging checks with direct feedback from potential buyers. This dual approach ensures that the packaging is both functionally sound and commercially appealing.

Marketing support must likewise be developed around the realistic business capacity of the microenterprise, starting with basic documentation of customer groups, prices, and sales channels before expanding. A simple record of inquiries, orders, and customer feedback provides a reliable basis for evaluating whether marketing changes are actually working, rather than relying on digital marketing as a guaranteed route to increased sales. However, several limitations affect the interpretation of the current report, as it provides no numerical baseline or endline data, nor does it present sales records, consumer assessments, or laboratory quality tests. Future programs must therefore define a small set of measurable indicators, such as production checklists, packaging compliance, and monthly sales, collecting this data both before and after support to distinguish completed activities from genuine changes in business performance.

Conclusion

The community engagement program at Ina Chip was designed to strengthen fruit-chip production, packaging and labeling, and marketing through socialization, practical training, mentoring, and evaluation. The project report documents guidance on processing equipment and workflow, improved packaging practices, and marketing development as the principal intervention areas. It also records the program's output indicators as achieved. However, the supplied evidence does not include numerical pre- and post-intervention measures or business-performance data, so the magnitude of improvement cannot be established from the report alone.

For future implementation, the team should maintain a simple monitoring record covering production consistency, packaging and labeling checks, marketing activity, sales, and customer feedback. Follow-up mentoring and periodic review may help the partner sustain the practices introduced. With clearer indicators and documented evidence, subsequent reporting will be better able to demonstrate both the immediate outputs and the longer-term economic contribution of the program.

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Reference

Food and Agriculture Organization of the United Nations. (2014). Developing sustainable food value chains: Guiding principles. FAO. https://www.fao.org/3/i3953e/i3953e.pdf

Fellows, P. J. (2017). Food processing technology: Principles and practice (4th ed.). Woodhead Publishing.

Grunert, K. G. (2005). Food quality and safety: Consumer perception and demand. European Review of Agricultural Economics, 32(3), 369–391. https://doi.org/10.1093/eurrag/jbi011

International Trade Centre. (2015). SME competitiveness outlook 2015: Connect, compete and change for inclusive growth. International Trade Centre.

Kaplinsky, R., & Morris, M. (2001). A handbook for value chain research. Institute of Development Studies, University of Sussex.

Kotler, P., & Keller, K. L. (2016). Marketing management (15th ed.). Pearson.

OECD. (2023). OECD SME and entrepreneurship outlook 2023. OECD Publishing. https://doi.org/10.1787/342b8564-en

Pretty, J. N. (1995). Participatory learning for sustainable agriculture. World Development, 23(8), 1247–1263. https://doi.org/10.1016/0305-750X(95)00046-F

Rahayu, W. A., Subekti, P., & Nuryana, I. (2025). Training bilingual inquiry-based mathematics games for teachers and students at SDN 1 Taji Malang. Jurnal Pengabdian Masyarakat, 6(2), 694–701. https://doi.org/10.32815/jpm.v6i2.2818

Robertson, G. L. (2013). Food packaging: Principles and practice (3rd ed.). CRC Press.

Rogers, E. M. (2003). Diffusion of innovations (5th ed.). Free Press.

Silayoi, P., & Speece, M. (2007). The importance of packaging attributes: A conjoint analysis approach. European Journal of Marketing, 41(11/12), 1495–1517. https://doi.org/10.1108/03090560710821279

World Bank. (2020). Small and medium enterprises (SMEs) finance. World Bank. https://www.worldbank.org/en/topic/smefinance