

Development Of An Agriculture-Based Msme Through Chili Seedling Production In Tiga Beringin Village

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Abstract

This article examines the development of an agriculture-based micro and small enterprise through chili seedling production in Tiga Beringin Village, Karo Regency. The study aims to identify the potential of chili seedling businesses, examine their development constraints, describe feasible development strategies, and explain the role of the Community Service Program (KKN) in identifying local economic potential. A descriptive qualitative approach was used. Data were obtained through field observation, interviews with chili seedling business actors, KKN documentation, and literature from journals, books, BPS, and official agricultural sources. The findings indicate that chili seedling production has development potential because seedlings are needed by local residents and farmers, the activity can utilize available land, and it can provide an additional source of household income. The main constraints include weather, pests and plant diseases, the need for regular maintenance, limited routine financial recording, and marketing that still relies heavily on direct sales and word-of-mouth promotion. Development strategies include improving seedling quality, implementing simple financial records, expanding marketing through WhatsApp and social media, strengthening relationships with farmers or farmer groups, and improving business-management knowledge. KKN functions as a means for students to observe, interact with, document, and understand local economic potential rather than taking over the management of the business.

Keywords: MSMEs, chili seedlings, agribusiness, marketing, rural economy, KKN.



INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) have an important position in community economic activities because they provide opportunities for people to generate income, create employment, and develop the potential available in their surroundings. Legally, MSMEs are productive businesses that may be operated by individuals or business entities according to criteria established by the government. Law Number 20 of 2008 also places the development of businesses based on regional potential and market orientation as part of MSME empowerment. In the latest developments, the government continues to position MSMEs as an important part of the national economy and encourages stronger financing, financial literacy, and digital ecosystems.

Data from the Central Statistics Agency (BPS) show that micro and small industries still face issues such as limited access and capital, human-resource quality, management, and legality. At the same time, BPS agricultural and horticultural data indicate that the agricultural sector remains an important part of regional economic activity. Karo Regency has a strong agricultural and horticultural base that can provide a context for the development of businesses supporting agriculture, including seedling production.

Chili is a horticultural commodity with economic value and relatively strong market demand. Official sources from the Ministry of Agriculture explain that healthy and high-quality seedlings are an important component of horticultural cultivation. The nursery stage is decisive because seedlings must be maintained until they are strong enough to be transferred to planting areas. This means that seedling production has its own economic value because farmers or community members do not always have to carry out the nursery process themselves.

Tiga Beringin Village, Karo Regency, is an interesting location for examining the relationship between agricultural potential and community business opportunities. During the KKN program from 28 July to 28 August 2026, students interacted with the community and identified seedling production as one potential agriculture-based economic activity. Field documentation showed a nursery area with racks and seedling containers, as well as community activities involving seedling maintenance. These findings indicate that the activity has moved beyond a simple planting experiment and can be viewed as a small-scale business opportunity.

Based on interviews, the chili seedling business was established because of community demand for seedlings. Initially, the activity was conducted on a small scale and then developed as nearby residents began purchasing the seedlings. The seedlings are marketed mainly through direct sales and word-of-mouth information. The business actor also stated that WhatsApp and social media have not yet been utilized optimally. In



terms of financial management, records of income and expenses are still limited, so the business has not yet had a periodic financial picture that can be measured clearly.

This condition indicates a gap between business potential and business management. Previous studies on chili seedling production have discussed financial feasibility, production factors, nursery techniques, or marketing of chili commodities. For example, Suhesti, Hidayat, and Suryaningsih (2026) examined the feasibility of chili seedling production in a farmer group, while Putri, Hadi, and Prawitasari (2019) discussed production factors, profit, cost efficiency, and the contribution of seedling production activities.

The difference in this study lies in its focus on connecting the potential of chili seedling production with MSME management, marketing, constraints, and the role of KKN in identifying local economic potential in Tiga Beringin Village. This study does not calculate financial feasibility because complete data on capital, costs, production volume, prices, turnover, and profit were not available. Therefore, the discussion is directed toward qualitative findings and does not create numerical estimates that are not derived from field data.

LITERATURE REVIEW

MSMEs and Business Development

MSMEs can be understood as productive businesses operated by individuals or business entities at a certain scale. Law Number 20 of 2008 emphasizes that MSME empowerment is directed toward making businesses resilient and independent while supporting regional development, job creation, income distribution, and economic growth. In this study, chili seedling production can be viewed as a small-scale economic activity that utilizes local resources and meets the needs of farmers and the surrounding community.

Agribusiness and Chili Seedling Production

Seedling production is part of the upstream segment of agribusiness because it provides seedlings as inputs for cultivation activities. Harahap and Khaidir (2007) explain that chili has economic value and requires agronomic treatment from the early growth stage. Chili cultivation guidelines issued by the Ministry of Agriculture also place the nursery stage as an important stage. Seedlings need to be sown in an appropriate medium, receive sufficient water and protection, and then be transferred when they are strong enough. Thus, seedling production is not merely a technical activity but can also become an economic activity when managed consistently.



MSME Marketing and Digital Marketing

Marketing for small-scale businesses does not always require a complicated system. Direct sales, customer relationships, customer recommendations, and farmer networks can serve as initial channels. However, technological development creates opportunities to expand market reach. Septiyanti et al. (2026) found a relationship between the implementation of digital marketing and the performance of food micro and small enterprises, including market reach. This finding does not mean that every business will automatically succeed after adopting digital marketing, but it indicates that digital channels can complement existing marketing methods.

Rural Economic Empowerment and the Role of KKN

Rural economic empowerment is essentially related to the ability of communities to identify, manage, and develop the resources they possess. The KKN program can provide a learning space for students to understand community conditions directly. In this study, KKN is positioned as a context for observation and interaction. Students are not positioned as business managers but as parties who help document activities, identify potential, and develop analyses based on concepts learned at university.

METHOD

This study used a descriptive qualitative approach. The approach was selected because the research focuses on understanding business processes, management conditions, the experiences of business actors, constraints, and development opportunities rather than statistically testing relationships among variables. The research location was Tiga Beringin Village, Karo Regency, with observations conducted in the context of the KKN program from 28 July to 28 August 2026.

Data sources consisted of primary and secondary data. Primary data were obtained through field observations and interviews with chili seedling business actors. The interviews used open-ended questions concerning the beginning of the business, reasons for choosing seedling production, production processes, business requirements, customers, marketing, constraints, costs, income, financial recording, development opportunities, and business expectations. Secondary data were obtained from journals, books, BPS publications, and official agricultural sources.

Data analysis was conducted through three general stages: data reduction, data presentation, and conclusion drawing. Interview data were selected according to the research focus and then grouped into business potential, processes and management, marketing, constraints, development strategies, and the role of KKN. Photographic documentation was used as visual evidence of field activities. This study does not present

figures for capital, turnover, profit, number of seedlings, prices, or costs because such data had not been collected completely.

RESULTS AND DISCUSSION

Potential of Chili Seedling Production in Tiga Beringin Village

The interview results show that the main reason the business actor engages in chili seedling production is the demand for seedlings from community members and farmers. The business actor explained that chili is widely cultivated, so seedlings remain in demand. The business can also be started on a small scale and does not require a very large area of land. These conditions give seedling production characteristics that are suitable for a household-based business or MSME, particularly when managed gradually. Another potential is reflected in the availability of nursery facilities. Field documentation shows a nursery using simple structures such as racks, seedling tables, shade structures, and planting containers. A large number of seedlings can be seen growing in nursery media. This condition indicates that seedling production is not merely an attempt to grow plants but already has an organized work process. From an economic perspective, the resulting ready-to-plant seedlings have value because buyers receive plants at a certain stage of growth, allowing them to save time and nursery labor.

Table 1. Potential of Chili Seedling Production in Tiga Beringin Village.

Potential Aspect	Field Findings	Development Implication
Local market demand	Chili seedlings are widely needed by local residents and farmers.	Opportunity to retain customers and build a buyer network.
Local resources	The seedling business utilizes available land and facilities.	The business can be developed gradually according to capacity.
Valuable product	Seedlings are maintained until they grow healthily and are ready for planting.	Seedling quality becomes the basis of selling value and customer trust.
Income potential	Seedling production can help increase household income.	Business records are needed to understand results more clearly.
Community network	Sales are already supported by word-of-mouth information.	The network can be expanded through farmer groups and digital media.

Source: field observations and interviews, processed by the researchers (2026).



These findings are consistent with Apipuddin et al. (2024), who viewed chili seedling production as an opportunity for new sources of rural income when managed with appropriate techniques and assistance. Suhesti et al. (2026) also showed that chili seedling production can be analyzed as a business activity with economic prospects. The difference is that this study has not conducted a financial feasibility analysis, so the potential discussed remains at a qualitative level.

Chili Seedling Production Process and Management

The business actor explained that the process begins by selecting good-quality seeds, after which the seeds are sown in prepared media. The seedlings are then maintained through watering and growth monitoring until they are strong enough to be transferred or sold. The business requirements mentioned include seeds, soil or growing media, fertilizer, containers such as polybags or trays, water, and maintenance equipment.

Field observations show that the nursery stage requires a place capable of protecting seedlings from environmental conditions. Photographic documentation shows the use of shade or screening as part of the nursery area. The Ministry of Agriculture explains that chili nurseries need to be protected from excessive heat and direct rainfall, while seedlings are transferred after they are sufficiently strong. Thus, the simple facilities observed in the field have technical functions that also support product quality.

Juhariah and Aulia (2020) showed that seed type and fertilization treatment are related to chili seedling growth in their experimental study. Their research illustrates that seedling quality cannot be separated from the quality of the initial materials and maintenance. In the context of Tiga Beringin Village, interview findings also place seedling quality as an aspect that needs to be maintained so that sold seedlings are healthy, grow well, and are sufficiently strong when transferred.

Business Economic Management

From an economic perspective, seedling production has several components that need to be managed, including seeds, growing media, containers, fertilizer, water, labor, and maintenance equipment. The business actor stated that costs vary depending on the number of seedlings produced. Because complete numerical records of costs and sales were not available, this study did not calculate profit or business feasibility ratios.

The interviews more clearly showed that financial recording remains simple and is not conducted routinely. This condition is important because a growing business needs to distinguish business money from household money, identify production expenditures, record sales, and estimate business results. BPS, in its Profile of Micro and Small Industries, also places capital, management, and various business constraints among

important aspects of small-business development. Therefore, simple bookkeeping can be a realistic first step for business actors before adopting more complex accounting systems.

Putri et al. (2019) indicated that chili seedling production can be influenced by production factors and costs, while Suhesti et al. (2026) used cost, revenue, income, and feasibility analyses to assess seedling production. These previous studies demonstrate the importance of financial data if future research intends to measure the feasibility of the business in Tiga Beringin Village. Therefore, regularly collecting cost and sales records is an important recommendation.

Marketing of Chili Seedling Production

The business actor stated that marketing is currently carried out mostly through direct sales and word-of-mouth information. This approach shows that trust and social relationships remain important marketing assets. If customers consider the seedlings they purchase to be good, they can recommend them to other potential buyers. This pattern is suitable for a business that still serves a surrounding market because it does not require large promotional costs.

However, market reach can be expanded. The business actor acknowledged that WhatsApp and social media have not yet been used optimally but expressed interest in using them. Digital marketing can begin simply, for example by creating a photo catalog of seedlings, listing available seedling types, expected readiness for sale, location, and ordering procedures. WhatsApp can be used for previous customers, while social media can be used to introduce the business to new potential customers.

Zai and Simanullang (2024), in Sidodadi Ramunia Village, Beringin District, Deli Serdang Regency, showed that relationships between agricultural actors and marketing channels influence the marketing process for chili commodities. Although their research object was chili marketed as a commodity rather than seedlings, the finding is relevant in demonstrating the importance of marketing networks in agribusiness activities. Septiyanti et al. (2026) also showed that digital marketing can be associated with the reach and performance of micro and small enterprises. Therefore, in Tiga Beringin Village, digital marketing should be viewed as an additional channel rather than a replacement for existing direct relationships.

Business Development Constraints

Based on interviews, the most frequently experienced constraints are weather, pests, and plant diseases. Seedling production requires routine maintenance because seedlings are still at a relatively vulnerable growth stage. If maintenance is inadequate, seedling growth may be disrupted and product quality may decline. This constraint shows

that business development depends not only on marketing but also on the ability to maintain product quality.

Another constraint concerns financial management and marketing. Recording of cash inflows and outflows is not yet routine, so the business owner does not have a periodically measurable picture of business performance. In marketing, sales still depend on nearby customers and recommendations. Although this approach helps maintain the existing market, its reach is relatively limited. In addition, the use of digital media still requires knowledge and skills.

Table 2. Constraints in Chili Seedling Business Development.

Constraint	Finding	Suggested Direction
Weather	Changes in environmental conditions can disrupt seedling growth.	Protect the nursery, regulate watering, and monitor plant conditions.
Pests and diseases	Seedlings may be affected if they are not maintained and monitored routinely.	Improve maintenance knowledge and conduct regular seedling observation.
Financial recording	Income and expenses are recorded simply and not routinely.	Create a simple cash book and separate business money from household money.
Marketing	Sales are still dominated by direct and word-of-mouth transactions.	Expand farmer networks and use WhatsApp/social media.
Business knowledge	Business development requires technical and management capabilities.	Provide basic training in seedling production, marketing, and bookkeeping.

Source: interview and observation results, processed by the researchers (2026).

Business Development Strategies

The first strategy is to maintain and improve seedling quality. The business actor needs to establish simple standards for seedlings to be sold, for example, seedlings should grow healthily, show no symptoms of disease, and be strong enough to be transferred. These standards can be explained to buyers so that quality becomes part of the business identity.



The second strategy is to improve financial recording. The business actor does not need to immediately use a complicated accounting system. A simple cash book recording the date, description, cash inflow, cash outflow, and balance can serve as a starting point. The records can then be used to identify production costs and sales results more measurably. If the business grows, the records can be developed into simple financial statements.

The third strategy is to expand marketing. Direct sales and customer recommendations should be maintained but complemented by WhatsApp and social media. Promotional content does not need to be complicated. Clear seedling photographs, availability information, seedling types, ordering procedures, and business location can already help potential buyers. Digital marketing research indicates that capability, education, innovation, partnerships, and business support are factors that can be associated with the adoption of digital marketing.

The fourth strategy is to strengthen networks with farmers or farmer groups. Such relationships can help identify seedling needs, planting schedules, and demand patterns. Partnerships can also provide access to knowledge and markets. Salsabila et al. (2025) discussed partnerships as an approach that can provide support such as market access and improved business capabilities. In this study context, a partnership does not have to take the form of a large formal contract but can begin with communication and cooperation at the local level.

The fifth strategy is to improve technical and management knowledge. Business actors need to continuously update their knowledge about seed quality, nursery media, maintenance, pests and diseases, and business recordkeeping. Village governments, agricultural extension officers, universities, or farmer groups can support this process.

Table 3. Development Strategies for the Chili Seedling MSME.

Area	Strategy	Expected Result
Product quality	Maintain healthy, uniform seedlings that are strong enough to be transferred.	Customer trust and the possibility of repeat purchases.
Finance	Create a simple cash book and record costs and sales.	The business becomes easier to evaluate and plan.
Marketing	Combine direct sales, recommendations, WhatsApp, and social media.	Wider reach to potential buyers.

Market network	Build relationships with farmers and farmer groups.	Market demand and needs become easier to identify.
Human resources	Improve technical knowledge of seedling production and business management.	Improved business quality and decision-making ability.

Source: researchers' analysis based on field data and literature (2026).

The Role of KKN in Identifying Local Economic Potential

The KKN program provides students with an opportunity to observe community economic conditions directly. Interaction with residents enables students not only to understand social and educational activities in the village but also to see ongoing economic activities. In this study, chili seedling production was one activity that could be observed because it is directly related to the agricultural sector and community needs.

In this context, the role of KKN is more appropriately described as a means of observation, documentation, and potential identification. Students can discuss activities with business actors, understand work processes, document field conditions, and connect findings with MSME and agribusiness concepts learned at university. Such activities help students understand that rural economic development does not always begin with a large business; it can originate from activities that are already operating and then be improved through better management.

On the other hand, this study also demonstrates the limits of the students' role. Students do not take over business decisions and cannot conclude that the business will develop simply because of KKN. Business sustainability remains dependent on the business actor, market conditions, seedling quality, financial management, and environmental support. Therefore, KKN can serve as an initial bridge for identifying potential, while long-term development requires follow-up by business actors and relevant stakeholders.

CONCLUSION

Chili seedling production in Tiga Beringin Village has potential to be developed as an agriculture-based MSME activity. This potential is reflected in the demand for seedlings among residents and farmers, the business's ability to utilize available land, and the opportunity for seedlings to become an additional source of household income. The business already has a seedling production process consisting of seed selection, sowing, watering, maintenance, and determining seedlings that are ready to be transferred or sold.



The main constraints identified include weather, pests and plant diseases, the need for routine maintenance, irregular financial recording, and marketing that still relies heavily on direct sales and word-of-mouth information. These conditions indicate that business development needs to be carried out comprehensively rather than merely by increasing production.

Possible strategies include improving seedling quality, establishing simple financial records, expanding marketing through WhatsApp and social media, building networks with farmers or farmer groups, and improving technical and business-management knowledge. These strategies can be implemented gradually according to the business actor's capacity.

KKN serves as a means for students to identify community economic potential through observation, interviews, interaction, and documentation. However, continued business development remains dependent on the business actor and support from relevant stakeholders. This study cannot yet provide a financial analysis because complete data on costs, prices, seedling quantities, turnover, and profit were not available. Such data can become a focus for future research.

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