
Management of Agritourism Development at Yala Rajabhat University Learning Center, Mae Lan Campus, through Social Engineering Process

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Abstract

This research aimed to examine the management and development of agritourism at the Learning Center of Yala Rajabhat University by employing the social engineering process as a core strategy in driving and sustaining agritourism activities at the community level. A convergent mixed-methods research design was adopted, integrating quantitative questionnaire data from 40 purposively selected stakeholders with qualitative data from in-depth interviews with five key informants. The study sought to understand the dynamics of participation, management practices, and the broader socio-economic impacts resulting from the integration of social engineering principles.

Findings revealed that applying the four core social engineering skills—critical thinking, effective communication, collaboration, and innovation—greatly enhanced the capacity of local personnel and communities in managing agritourism sites efficiently and sustainably. These skills also fostered stronger networks among community members, academic institutions, and external agencies, leading to the creation of diverse, innovative tourism activities rooted in local wisdom. Importantly, the process facilitated genuine community participation and empowerment, supporting local economic opportunities, cultural preservation, and environmental awareness. As a result, the Learning Center has become a model for community-driven agritourism development through integrated social engineering approaches. Quantitatively, agritourism management (Mean = 4.12, S.D. = 0.55), community participation (Mean = 4.18, S.D. = 0.60), and sustainability (Mean = 4.09, S.D. = 0.51) were all rated at a high level; Control and Evaluation was the lowest-rated management dimension (Mean = 3.89).

Keywords: Agritourism Management, Social Engineer, Community Participation, Sustainability

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Introduction

Agritourism is a currently popular form of tourism that allows visitors to closely experience agricultural lifestyles and activities. In Thailand, there are several renowned agritourism destinations, such as Farm Chokchai in Nakhon Ratchasima Province, which has achieved commercial and marketing success by enabling tourists to observe various farm activities like cow milking, ice cream production, and animal shows. However, most of these attractions restrict the local community's role to mere observers and do not provide opportunities for the public to apply this knowledge practically within their own contexts. Conversely, the Yala Rajabhat University Learning Center, Mae Lan Campus, has developed an agricultural learning model that genuinely responds to the community's context by emphasizing "learning by doing" and "transferring knowledge for practical application". Activities within the center aim not only to create memorable experiences for tourists but also to teach visitors appropriate agricultural techniques tailored to their resources and environments, such as self-sufficient renewable energy systems, pesticide-free vegetable cultivation, recirculating aquaculture systems, and cost-effective poultry farming.

A core concept utilized by the center in designing its activities is the "3 Black 1 Gold" agricultural model, based on the principles of the Institute for the Promotion of Knowledge Management for Society (ISOC). This refers to agriculture comprising three black animals: Black Goats, Black Cows, and Black Sheep, alongside the "Gold": Goldfish (Red Mahseer) and Golden Chickens (Betong Chickens). Furthermore, the center has adapted the "3 Black 1 Gold" concept to local livestock farming, specifically focusing on Black Cows, Black Pigs, Black Chickens, and Goldfish/Tilapia. These are easy-to-raise, low-cost economic animals linked to a comprehensive farm management system that utilizes animal manure for compost production and processes products to increase economic value, thereby allowing participants to immediately apply this model in their areas. Integrating this concept creates a holistic learning process emphasizing the resourceful use of local assets, cost reduction, and economic value enhancement for local farmers. The strength of this center lies in its ability to connect academic concepts with local wisdom through the "Social Engineer" process. This process strengthens key skills for learners, including critical thinking, collaboration, communication, and innovation, enabling the community to systematically elevate its agricultural knowledge and drive household and community economic development.

Therefore, studying the management and development model of agritourism at the Mae Lan Learning Center through the social engineering process is highly significant for the sustainable development of the community. This is particularly relevant in the context of the Deep South provinces, which possess a diversity of culture and resources, along with the potential to serve as a learning hub aligned with the real lives of the people.

Although the center has developed a distinctive learning-based agritourism model, the literature reviewed in this study provides limited evidence on how social engineering skills are systematically integrated with agritourism management, community participation, and sustainability in a university learning-center context in Thailand's Deep South. This gap limits understanding of the mechanisms through which social engineering can support participatory agritourism management. Accordingly, this study contributes by examining the management

process, analyzing the role of the four social engineering skills, and proposing context-based guidelines for sustainable agritourism development at the Mae Lan Campus Learning Center.

Objectives

1. To study the management process of agritourism development at the Yala Rajabhat University Learning Center, Mae Lan Campus.
2. To analyze the application of the social engineering process in the development and management of agritourism.
3. To propose guidelines for sustainable agritourism development that emphasizes community participation.

Research Questions

1. How is agritourism development managed at the Yala Rajabhat University Learning Center, Mae Lan Campus?
2. How are the four social engineering skills applied in the development and management of agritourism at the Learning Center?
3. What guidelines can strengthen sustainable agritourism development while maintaining meaningful community participation?

Literature Review

1. Concepts of Agritourism Management

Agritourism refers to tourism in rural or agricultural areas that allows tourists to experience and participate in farmers' activities, such as planting vegetables, raising animals, harvesting crops, or processing agricultural products. This approach generates income for the community while aiding in the conservation of natural resources and local wisdom (Department of Agricultural Extension, 2021). Effective agritourism management should comprise the following key elements: 1. Strategic Direction: Like the strategic leadership concept of Hitt et al. (2007), which emphasizes clear goal setting, vision, and direction, attractions should have a strategic plan that satisfies both tourists and the community, especially linking with government policies and sustainability tourism market trends. 2. Resource Management: Maximizing the benefits of agricultural land, personnel, and budgets by building collaborations with public and private agencies and empowering farmers to manage their resources effectively. 3. Promotion of Culture and Local Wisdom: Supporting the preservation and extension of local wisdom, such as organizing workshops on basketry, weaving, or utilizing local herbs, to facilitate genuine experiential learning. Strategic Marketing Promotion: Branding the tourist destination, leveraging online media and social platforms, and attracting niche markets like health tourists, families, or educational groups. Community Participation: The community should determine the content, activities, and operational formats to build a sense of ownership, transforming them from mere "service providers" into "co-developers".

While cases like Farm Chokchai are commercially successful, they focus heavily on observational tourism. In contrast, the Mae Lan Learning Center emphasizes hands-on learning where visitors can take knowledge back for practical agricultural applications.

2. The Social Engineer Concept

The "Social Engineer" concept is a systematic development framework aimed at creating a "Change Agent" capable of working with the community to analyze problems, design solutions, and drive concrete changes toward sustainability. Social engineers are not merely external experts but include empowered community members who act as co-leaders of local change. This role requires four critical skills: 1. **Critical Thinking:** Enables practitioners to systematically analyze problems, distinguish diverse information to identify root causes, and design development guidelines that align with facts and local contexts 2. **Effective Communication:** Involves deep listening, understanding diverse perspectives, and appropriately conveying information to foster cooperation, shared understanding, and community participation. 3. **Team Collaboration:** Requires skills to work equitably with diverse groups across the community, public, and private sectors, fostering a sense of ownership that makes development more sustainable than top-down directives. 4. **Innovation for Change:** Demands creativity and practical experimentation to develop community products, creatively manage resources, and design agritourism activities that meet market demands and generate new local income.

When integrated holistically, these four skills empower personnel and communities to design agritourism processes that are responsive to local contexts, flexible to change, and capable of continuous adaptation. At the Mae Lan Campus Learning Center, this concept is vividly applied through participatory efforts bridging academics, students, and the community, empowering the community to act as the "owners of knowledge".

The conceptual framework is additionally informed by Stakeholder Theory and Participatory Development Theory. In this study, university personnel, community members, farmers, public agencies, and partner organizations are treated as interdependent stakeholders whose participation influences management outcomes. The participatory-development perspective further emphasizes co-analysis of problems, co-design of activities, shared decision-making, and joint monitoring. Together, these perspectives provide a logical basis for linking social engineering skills with agritourism management, community participation, and sustainable development outcomes.

3. Development Tools: M.I.C Model and "Fah Prathan" Tools

In developing sustainable agritourism, it is essential to rely on "support tools" that promote the community's learning, planning, participation, and monitoring and evaluation processes across all dimensions. This is particularly true in the area of the Mae Lan Learning Center, where various key tools have been comprehensively adapted to foster development in terms of systems, thinking, and concrete implementation.

1. **M.I.C Model:** A framework for developing interconnected systems. The M.I.C Model is a systematic development approach comprising three main components:

- **1.1 Market (Understanding the market):** Agritourism development cannot be separated from the market and its target audience. M.I.C emphasizes equipping the community with knowledge and an understanding of tourists' trends, needs, and behaviors. This enables them to design activities or products that meet expectations, including appropriate pricing, public relations, and local branding.

- **1.2 Innovation (Developing innovation):** Encouraging the community to dare to think, experiment, and present new ideas based on local wisdom. Examples include processing agricultural products with unique recipes, using natural materials to create souvenirs, or

organizing creative agricultural activities. These initiatives help make the tourist destination outstanding, distinct, and appealing in the long term.

- **1.3 Community (Utilizing the community base):** The community is the heart of development, especially in a grassroots economy. M.I.C indicates that all changes should originate from the foundation of local knowledge, culture, and potential to build a sense of ownership and internal sustainability. Therefore, this M.I.C framework acts as a strategic mechanism that helps the community drive development by "systematically connecting" market demands, creativity, and social capital.

2. Development Timeline: A tool for systematically tracking changes. This tool is used to monitor and evaluate the progress of various activities or projects within the community. It allows for time to be divided into monthly or quarterly periods and facilitates proactive planning with clear goals. In the context of agritourism, the Development Timeline provides an overview of activities, such as harvest seasons, optimal times for organizing tourist activities, and periods for training or capacity-building for farmers. Furthermore, it can be used to clearly review annual achievements and areas requiring improvement.

3. Fah Prathan Tools: A toolkit for thinking, planning, and development. The "Fah Prathan Tools" concept was developed by social development agencies in Southern Thailand. It is designed to be applicable to all age groups and community contexts, systematically compiling tools related to psychology, learning, and management. It consists of:

- **3.1 Life Wheel:** Used to help individuals or families visualize an overview of their lives across various aspects, such as health, economy, education, society, and mental well-being. It aids in problem analysis and planning to restore life balance.

- **3.2 PDCA Cycle (Plan-Do-Check-Act):** A classic management tool applied at the community level to ensure that all operations undergo continuous planning, implementation, checking, and improvement. This is highly suitable for monitoring agricultural and tourism development activities.

- **3.3 Life Clock:** Helps individuals understand their roles and responsibilities at different stages of life. It is ideal for designing age-specific capacity-building activities, such as for children, youth, and the elderly, ensuring that all age groups participate and engage in learning appropriate to their time and roles.

When integrated, all these tools help promote a systematic process of thinking, analyzing, planning, and decision-making for community leaders and local members. They provide clear sequential steps, trackable outcomes, and the flexibility to be adapted to real contexts. This ensures that agritourism development is not merely a commercial activity, but a genuine collaborative learning process for the community.

4. The "3 Black 1 Gold" Concept

The "3 Black 1 Gold" concept is a form of integrated farming system applied in the context of agritourism development, particularly in the area of the Mae Lan Learning Center, Yala Province. This concept emphasizes raising economic animals that are resilient to the environment, require low capital investment, and can generate multifaceted added value economically, socially, and environmentally. Economic animals in the "3 Black 1 Gold" system consist of three types of black animals and one primary economic animal representing the "Gold" of the system, detailed as follows:

- **1) Black Cows:** Black cows are animals that can serve multiple roles in agriculture, including serving as labor in the fields, producing manure fertilizer, and processing meat or dairy products for sale. They can also facilitate experiential learning activities for visitors in the form of an open cow farm.

- **2) Black Goats:** Black goats and sheep are economic animals that are easy to raise, grow quickly, are disease-resistant, and can consume a wide variety of vegetation. Therefore, they are highly suitable for agricultural systems in arid areas.

- **3) Tilapia / Goldfish / Betong Chickens (Gold Economic Animals):** Economic animals in this group act as the "Gold" in the system. In other words, they are high-quality protein sources that can be consumed within the household or sold to generate income. Additionally, they can be integrated with other agricultural systems, such as combining fish farming with hydroponic vegetable cultivation (Aquaponics) by using wastewater from the fish pond to water plants, or raising Betong chickens, which are local animals with high commercial potential.

Benefits of the "3 Black 1 Gold" system in the context of agritourism development: This concept promotes economic development alongside environmental conservation through circular resource management, as follows:

- 1. Resource Circulation: Examples include using animal manure as organic fertilizer, utilizing water from fish ponds to water crops, or converting leftover materials from vegetable plots into animal feed.

- 2. Food Security: Encouraging households to produce their own food, reducing external reliance, and increasing economic opportunities within the community.

- 3. Experiential Learning: Creating activities that offer tourists the opportunity to learn through hands-on experience, such as collecting eggs, processing meat, feeding animals, and making compost.

- 4. Promoting the Sufficiency Economy Concept: The "3 Black 1 Gold" concept aligns with the Philosophy of the Sufficiency Economy, which includes moderation, reasonableness, and self-immunity, using the principles of "knowledge" and "virtue" as a foundation for decision-making and operations.

In conclusion, the "3 Black 1 Gold" concept is a holistic agricultural management model that not only addresses the community's economic needs but also systematically connects with agritourism development. It creates a sustainable balance between natural resource utilization, income generation, and collaborative learning within the community.

Conceptual Framework

The revised conceptual framework clarifies the logical sequence from local context and stakeholder inputs, through social engineering skills and agritourism management processes, to participatory application and sustainable outcomes.



Figure 1. Conceptual Framework for Sustainable Agritourism Management through Social Engineering Skills and Participatory Application at Mae Lan Campus

Research Methodology

This study employed a convergent mixed-methods design. Quantitative and qualitative data were collected within the same study period, analyzed separately, and integrated during interpretation to obtain a more comprehensive explanation of agritourism management, the application of social engineering, and sustainable development guidelines.

1. Population and Sample

• **1.1 The population** in this research included administrators or individuals involved in the management of the Yala Rajabhat University Learning Center, Mae Lan Campus, and agritourism sites within Yala Province, as well as model farmers, community speakers, and all relevant project officers. A sample size of 40 individuals was determined using Purposive Sampling based

on their roles, duties, and involvement in the agritourism development process. This approach was chosen to capture in-depth information specific to the area's context and to ensure the inclusion of perspectives from all stakeholder sectors.

- The quantitative component was intended for descriptive analysis of stakeholder perceptions within the study context rather than population-level statistical generalization. Therefore, the purposive sample of 40 respondents was analyzed using descriptive statistics only, while the qualitative component was used to provide contextual depth and explanation.

- **1.2 For the qualitative component**, Key Informants consisted of 5 individuals, including executive-level personnel, project developers, or community leaders playing a crucial role in driving local agritourism development. They were selected based on the following criteria:

1. Holding a position or active role in managing or designing activities at the learning center or agritourism sites.

2. Having no less than 3 years of experience in community development or learning center management at the local level.

3. Possessing knowledge and understanding of the social engineering process or participatory development.

4. Demonstrating a willingness to provide comprehensive information.

2. Research Instruments

- **2.1 Quantitative Research Instrument:** A questionnaire was utilized, developed from studying theories and concepts related to agritourism development management, the social engineering process, and the M.I.C (Market – Innovation – Community) Model. It was divided into 2 parts:

- **Part 1:** General information of the respondents, including gender, position, educational level, and work experience related to tourism development.

- **Part 2:** A questionnaire regarding opinions on the management of agritourism development through the social engineering process, divided into 3 main areas: 1) Tourism site management, 2) Community participation, and 3) Sustainability of tourism development. A 5-level Likert Scale was used as follows:

1	means	Lowest
2	means	Low
3	means	Moderate
4	means	High
5	means	Highest

- **Score Interpretation:** The evaluation utilized a scale-based reference, dividing the average score range into 5 levels (with an interval of 0.80 points), based on Hair et al. (2006):

4.21 – 5.00	means	Highest level
3.41 – 4.20	means	High level
2.61 – 3.40	means	Moderate level
1.81 – 2.60	means	Low level
1.00 – 1.80	means	Lowest level

Instrument Reliability Testing

The researcher pre-tested the questionnaire with a pilot group of 20 individuals possessing characteristics similar to the actual sample. The reliability coefficient was analyzed using Cronbach's Alpha method, yielding a value of 0.90. This indicates a very high level of internal consistency and reliability for the questionnaire.

2.2 Qualitative Research Instrument: A Structured Interview form was used, divided into 2 parts:

Part 1: General information of the interviewees, such as position, organization, and experience in managing or developing agritourism sites.

Part 2: In-depth questions regarding agritourism management guidelines, the application of social engineering concepts, and community participation in sustainable tourism development. The content was categorized into 3 main issues aligning with the research objectives:

1. Management of Agritourism Development: How is the planning process and direction-setting of the tourist site conducted? What are the steps in resource management and operations? Which agencies or partners play a role in management?

2. Application of the Social Engineering Process: How is the social engineering concept utilized in analyzing problems and designing activities? What are the communication and participation mechanisms at the community level? What are the roles of stakeholders in advancing innovations or new guidelines?

3. Sustainable Development Guidelines and Community Participation: In what aspects of the development process does the community participate? Which development guidelines impact long-term sustainability? What are the recommendations for developing tourist sites to align with the local context?

Content Validity Testing for Qualitative Research: To ensure Content Validity, the researcher proceeded as follows:

1. Verified the consistency of the interview questions with the research conceptual framework by consulting 3 experts in tourism management and community development.
2. Evaluated the content validity of each question using the Index of Item-Objective Congruence (IOC) method, establishing a threshold of 0.50 and above as acceptable.
3. The evaluation results demonstrated that the interview form had an average IOC value of 0.93, indicating that the instrument possessed high consistency with the research objectives and was appropriate for collecting qualitative data (Rovinelli & Hambleton, 1976).

3. Data Collection

3.1 Quantitative Data Collection: The researcher executed the following steps:

1. Requesting permission: An official letter was issued by Yala Rajabhat University to request cooperation from relevant agencies and personnel associated with the learning center and agritourism sites in Yala Province.

2. Distributing questionnaires: Questionnaires were distributed to the sample group of 40 individuals (comprising administrators, project officers, model farmers, and community speakers) using both physical distribution and online channels (e.g., Google Forms).

3. Coordination and follow-up: Phone calls and communication applications were utilized to ensure the sample group returned the questionnaires within the specified timeframe.

4. Verifying data completeness: Upon receiving all 40 returned questionnaires (a 100% response rate), the researcher verified the completeness and accuracy of the data before proceeding to quantitative analysis.

3.2 Qualitative Data Collection: The researcher conducted in-depth interviews with the 5 purposefully selected key informants using the following procedure:

1. Contact and coordination: Reached out to key informants via phone, email, and other communication channels to request interview participation.

2. Requesting organizational permission: Prepared an official letter from Yala Rajabhat University detailing the research objectives to facilitate the scheduling of the interview date, time, and location.

3. Conducting in-depth interviews: The researcher utilized the Structured Interview form and obtained informant consent for audio recording, photography, and note-taking. Each interview lasted approximately 40–50 minutes.

4. Verifying data accuracy: Post-interview, the researcher transcribed the recordings/notes and conducted Member Checking with the informants to validate data accuracy.

5. Content analysis preparation: The finalized data was then forwarded for Content Analysis, involving categorization, synthesis of key issues, and alignment with research objectives.

4. Data Analysis

4.1 Quantitative Data Analysis: The data obtained from the questionnaires were checked for completeness and analyzed using a statistical software package (e.g., SPSS) to describe the data characteristics and behaviors of the sample group. Descriptive Statistics were applied, including Frequency, Percentage, Mean, and Standard Deviation. The mean interpretation utilized the 5-level scoring criteria based on Hair et al. (2006), with a 0.80 interval per level, as follows:

4.21 – 5.00 = Highest level

3.41 – 4.20 = High level

2.61 – 3.40 = Moderate level

1.81 – 2.60 = Low level

1.00 – 1.80 = Lowest level

4.2 Qualitative Data Analysis: Data from in-depth interviews were transcribed and analyzed using Structured Content Analysis. The procedure included the following steps:

1. Repeatedly reading and reviewing the data to thoroughly understand the context.

2. Categorizing the data according to sub-topics related to the research objectives.

3. Synthesizing key issues that reflect the management processes, the application of social engineering concepts, and sustainable development guidelines.

4. Presenting the analytical results in a descriptive narrative format, linking them to the conceptual framework and relevant literature to provide a comprehensive overview and policy recommendations.

This qualitative analysis aimed to capture the depth of the data, the core perspectives of the key informants, and an interpretation highly aligned with the study area's context.

4.3 Integration of Quantitative and Qualitative Findings

Following separate analyses, the quantitative patterns were compared with qualitative themes at the interpretation stage. Areas of convergence were used to strengthen interpretation, while differences or lower-rated issues were examined using qualitative evidence to explain the context.

This integration allowed the study to relate numerical perceptions to stakeholder experiences and to develop context-based recommendations.

Results

1. General Demographics

The respondents were primarily male (62%) and female (38%). Educational backgrounds included Vocational Certificates (35%), High Vocational Certificates (55%), and Bachelor's Degrees (10%). Experience levels in agritourism management were predominantly under 5 years (62.50%), followed by 5–10 years (30.00%), and over 10 years (7.50%).

2. Agritourism Management Process at the Learning Center

Qualitative findings indicated that management operates under a participatory planning framework, with collaborative committees from the public sector and community leaders co-designing activities. This includes setting clear goals, allocating flexible resources, and maximizing local asset utilization (e.g., bio-fermented water and recycled materials). Quantitatively, the overall agritourism management scored at a "High" level (Mean = 4.12, S.D. = 0.55). The highest-rated sub-category was Community Resource Management (Mean = 4.20), while Control and Evaluation scored the lowest (Mean = 3.89), highlighting an area needing improvement.

3. Application of the Social Engineering Process

Qualitative research revealed that the "Social Engineer" concept is a critical development pathway characterized by systemic problem analysis, integrated cooperation, and grassroots innovation. Key examples include aligning tourism activities with local identity (e.g., organic vegetable gardens and traditional livestock) and training youths as local guides. Key informants identified systemic thinking and participatory communication via public forums as the driving forces. Quantitatively, "Community Participation" was rated "High" (Mean = 4.18, S.D. = 0.60), with the highest satisfaction noted in allowing the community to co-design activities (Mean = 4.25), reflecting successful social engineering integration.

4. Guidelines for Sustainable Agritourism Development

Analysis determined that sustainable development must comprehensively address three dimensions:

1. **Economic Dimension:** Creating opportunities for supplementary income through the sale of processed agricultural goods and community products.
2. **Social Dimension:** Instilling local pride, providing exchange platforms, and emphasizing the role of community leaders.
3. **Environmental Dimension:** Promoting organic farming concepts, waste management, and cultivating environmental consciousness among the youth.

Quantitatively, the sustainability of tourism development achieved a "High" average score (Mean = 4.09, S.D. = 0.51), with local natural resource conservation receiving the highest rating (Mean = 4.30).

Table 1. Summary of key quantitative findings

Indicator	Mean	S.D.	Interpretation
Agritourism management overall	4.12	0.55	High
Community resource management	4.20	-	High
Control and Evaluation	3.89	-	High
Community participation overall	4.18	0.60	High
Community co-design of activities	4.25	-	Highest
Sustainability of tourism development overall	4.09	0.51	High
Local natural resource conservation	4.30	-	Highest

Discussion

The results of this research demonstrate the critical importance of the agritourism management process in community areas, particularly highlighting the role of the Yala Rajabhat University Learning Center, Mae Lan Campus. The center serves as a central mechanism in coordinating collaboration among government agencies, communities, and academic networks. The quantitative data analysis revealed that the sample group's opinions on agritourism management were at a high level. This reflects a management process characterized by clear strategic goal setting, efficient local resource management, and support for activities that align with the community context. This finding is consistent with Yüksel's (2004) concept, which states that tourism planning and management at the local level must be based on continuous cooperation and participation.

A particularly important finding concerns Control and Evaluation. Although this dimension remained at a high level (Mean = 3.89), it received the lowest score among the management indicators. This relative weakness suggests that the Learning Center should strengthen systematic follow-up through clear indicators, scheduled reviews, documented feedback, and regular participation of community stakeholders in evaluating activities. Addressing this area would help convert strong participation and resource management into a more continuous improvement cycle.

Data from the in-depth interviews further indicated that the social engineer concept has been concretely applied in the study area. This is evident across the dimensions of systematic thinking, working towards shared goals, and practical implementation—primarily through the utilization of public forums, collaborative problem analysis, and the initiation of activities driven by community needs. These characteristics reflect an understanding of social engineering principles as defined by Dorf & Bishop (2005), which emphasize systematic social problem-solving, a sense of collective responsibility, and creative collaboration with others.

The research also found that community participation is robust across multiple dimensions, including planning, decision-making, and monitoring and evaluation. This is particularly notable in the process of designing agritourism activities that integrate local wisdom and cultural capital, such as organizing learning activities based on organic farming plots, traditional livestock raising, and utilizing community products as core tourism components. The sample group's high and continuous evaluation scores for community participation align with the

proposition by Phatchara Chuphanit (2018), who noted that sustainable community development must rely on the power of local people rather than solely depending on external support.

Regarding guidelines for sustainable agritourism development, data from both research approaches highlighted the necessity for balanced development across three dimensions: economic, social, and environmental. The community should play a leading role in determining management guidelines, ensuring the continuity of activities, and establishing an internally driven monitoring system. This is in accordance with UNWTO (2018) guidelines, which emphasize that sustainable tourism requires the equitable distribution of benefits, the preservation of cultural values, and the sustainable conservation of natural resources. Furthermore, these findings support the conclusions of Suphawadee Chusri (2021), who emphasized that agritourism development in border areas must be acutely aware of cultural diversity and community vulnerability; thus, any development must stem from voluntary participation, not external coercion.

The study contributes conceptually by demonstrating how the four social engineering skills can operate as practical capabilities that connect stakeholder participation with agritourism management in a university-community learning context. Its practical contribution lies in showing how locally grounded learning activities, community co-design, and resource-based management can be combined to support sustainable agritourism. However, claims regarding increases in household income should be interpreted as potential economic opportunities unless supported by verified financial or before-and-after income data.

Conclusion

In conclusion, managing agritourism by integrating the social engineer concept alongside active community participation can create a viable model of sustainable development rooted in the local area. This model can serve as a practical guideline applicable to other regions with similar contexts in the future.

Recommendations

Practical and Managerial Implications

1. Government agencies, educational institutions, and local administrative organizations should be encouraged to adopt the "Social Engineer" concept in developing other tourist sites, ensuring community participation at every step to build long-term acceptance and project continuity.
2. The Learning Center should regularly host experience-sharing forums and "Community Classrooms" to continuously develop the potential of residents, enabling them to independently analyze, plan, and manage tourism resources.
3. Agritourism should be integrated into higher education and vocational curricula, allowing students to learn from real-world scenarios and develop community innovations tailored to specific local contexts.
4. A participatory monitoring and evaluation system must be established, granting the community an active role in providing feedback and proposing improvements, thereby fostering shared learning and structural sustainability.

Recommendations for Future Research

1. Future studies should include larger or comparative samples across multiple agritourism sites to examine whether the management pattern identified at Mae Lan Campus is transferable to other contexts.
2. Longitudinal or before-and-after studies should measure objective outcomes such as visitor numbers, participation levels, product sales, and household income so that economic and social impacts can be assessed more directly.
3. Future research should examine the effectiveness of formal monitoring and evaluation mechanisms, particularly because Control and Evaluation received the lowest mean score among the reported management indicators.

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