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## Experiences of Banana Farmers in Montalban, Rizal: A Research for the Development of an Extension Program

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### Abstract

**Aim:** Banana farming is a significant contributor to the agricultural sector in the Philippines, playing a vital role in the economy and food security. Despite its importance, banana farmers often face challenges due to the lack of tailored support and resources. This research aimed to explore the experiences of banana farmers in Montalban, Rizal, with the objective of informing the development of an extension program that addresses their specific needs.

**Methodology:** A qualitative research design was employed, utilizing interviews, focus group discussions, and observations to gather insights into the experiences, challenges, and preferences of banana farmers in Montalban, Rizal. Participants included local banana farmers, and data collection methods were chosen to ensure a comprehensive understanding of their perspectives.

**Results:** The study revealed that banana farming is deeply rooted in the community, with farmers engaging in the practice across generations. Despite their resilience, farmers face challenges such as pest management, market accessibility, and technical proficiency. However, there is a strong interest among farmers in learning about value-added products and engaging in training workshops to enhance their skills.

**Conclusion:** The findings highlight the need for tailored support and interventions to empower banana farmers in Montalban, Rizal. A well-designed extension program, informed by the community's unique needs and preferences, holds promise for enhancing livelihoods, fostering innovation, and contributing to the sustainable growth of the local agricultural sector. This research provides valuable insights into the experiences of banana farmers and underscores the importance of developing targeted interventions to address their specific challenges. By leveraging community strengths and addressing identified gaps, stakeholders can work towards a more resilient and prosperous future for banana farming.

**Keywords:** Banana farming, Agricultural sector, Extension program, Qualitative research, Farmer support, Sustainable growth, Montalban Rizal

### INTRODUCTION

Banana cultivation holds a significant place in the agricultural landscape of the Philippines, contributing substantially to the country's economy and food security. According to data from the Philippine Statistics Authority (PSA), the banana subsector has consistently contributed an average of PHP123.3 billion per year to the gross value added (GVA) in the agriculture, forestry, and fisheries (AFF) sector from 2001 to 2020. This represents 8.2% of the total GVA in AFF, highlighting the economic importance of bananas (PSA, at constant 2018 prices).

Bananas are not only consumed locally as fresh and processed fruits but are also recognized for their nutritional value, serving as a good source of fiber, vitamin C, and potassium. In 2020, the Philippines produced a total of 9.06 million metric tons (MT) of bananas, with Cavendish being the predominant variety, accounting for 52% of the total production. Other major varieties cultivated include Saba (27%) and Lakatan (10%), among others (Philippine Banana Industry Roadmap, 2021-2025). Bananas play a crucial role in ensuring food security in the



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Philippines, with Filipinos historically exhibiting high per capita consumption rates. However, recent trends indicate a decline in per capita consumption from 50 kg/year in 2015 to 31 kg/year in 2019 (PSA, 2021). This emphasizes the importance of understanding the experiences of banana farmers and developing strategies to support sustainable banana production and consumption patterns.

This research aimed to explore the experiences of banana farmers in Montalban, Rizal, with the objective of informing the development of an extension program tailored to their needs. By understanding the challenges, successes, and aspirations of local banana growers, this study sought to contribute to the advancement of the Philippine banana industry and the welfare of its stakeholders.

The importance of such research is underlined by the Philippine Higher Education Reform Agenda 2017, which emphasizes competitiveness in upgrading capacity on directed research and development (R&D) and extension programs to serve socio-economic goals under developed niche areas (Carvajal & Sanchez, 2023; Carvajal, Sanchez & Amihan, 2023; Sanchez, et al., 2024a; Sanchez & Sarmiento, 2020). The Philippine Higher Education Roadmap for CHED, HEIs, and SUCs outlines the mission "to be in full service of national development," performing a strategic role in the Philippine Development Plan. Furthermore, R.A. 8435 or the Agriculture and Fishery Modernization Act of 1997 stipulates that the state must prioritize the utilization of research results through formal and non-formal education, extension, and training services. This supports the development of a national extension system to transform Philippine agriculture and fisheries from a resource-based to a technology-based industry. The extension program of state universities and colleges is focused on improving LGU capability in extension service through degree and non-degree training programs, technical assistance, extension cum research activities, monitoring and evaluation of extension projects, and information support services through tri-media and electronics (Carvajal & Sanchez, 2024; Carvajal, et al., 2024; Salendab & Sanchez, 2023; Salendab, Ocariza-Salendab & Sanchez, 2023; Sanchez, 2023a; Sanchez, Sanchez & Sanchez, 2023). Additionally, CHED has established the National Agriculture and Fisheries Education System (NAFES) to prioritize education and training in science and technology to accelerate social progress and promote total human liberation and development.

Republic Act 8292, otherwise known as the Higher Education Modernization Act of 1997, allows SUCs to establish extension centers to promote development. It also permits institutions to adopt modern and innovative modes of transmitting knowledge, such as the use of information technology, open learning, and community laboratories, to promote greater access to higher education. These legislative frameworks and strategic plans emphasize the importance of tailored extension programs to support banana farmers in Montalban, Rizal, thereby enhancing their contributions to the Philippine agricultural sector and national development.

## Objectives

This study explored the specific needs and preferences of banana farmers in Montalban, Rizal, and how these insights can inform the development of an effective extension program to support their agricultural practices. Specifically, this study addressed the following questions:

1. What are the unique challenges faced by banana farmers in Montalban, Rizal?
2. What specific support and resources do banana farmers in Montalban, Rizal, require to enhance their productivity?
3. What are the preferences of banana farmers in terms of training and extension services?
4. How can insights into the needs and preferences of banana farmers be utilized to design a tailored extension program?
5. What components should be included in an extension program to effectively support the sustainable agricultural practices of banana farmers in Montalban, Rizal?

## RELATED LITERATURE

### Philippine Banana Industry Profile

The banana industry is a cornerstone of the Philippine agricultural sector, characterized by its economic significance and extensive cultivation. Bananas, with their notable health benefits, are among the most critical fruit



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crops in the country. The industry encompasses a diverse range of stakeholders including farmers, cooperatives, traders, exporters, and manufacturers, though it is predominantly controlled by large multinational companies (PCAARRD, 2019.). Globally, the Philippines ranks as the third-largest banana producer, following India and China as of 2014 (FAOStat, 2017). In 2019, the Davao region emerged as the top banana producer in the country, contributing 3.43 million metric tons or 37.4% of the national output. Other significant banana-producing regions include Northern Mindanao, SOCCSKSARGEN, and BARMM (PCAARRD, 2019) Banana products are major exports, both fresh and processed, with banana chips becoming a notable export commodity.

The paper "Factors Affecting Participation in Contract Farming of Smallholder Cavendish Banana Farmers in the Philippines" by UP Mindanao recommends that the government implement policies to protect farmers' welfare, ensure fair contracts, provide comprehensive training on sustainable practices, and improve access to credit to enhance the resilience and productivity of the banana industry.

### Problems in the Industry

The Philippine banana industry faces several significant challenges, primarily due to its vulnerability to various diseases. Major diseases affecting the industry include banana bunchy top disease (BBTD), Sigatoka, and Fusarium wilt (FW), also known as Panama disease. Cavendish bananas are particularly threatened by Fusarium wilt tropical race 4, a soil-borne pathogen caused by *Fusarium oxysporum* f. sp. *cubense* (Foc). This pathogen can persist in the soil for years, causing severe wilting and making plantations unproductive. BBTD, regarded as the most destructive virus disease of bananas in the country, severely impacts the Lakatan variety, which is predominantly grown by small-scale farmers (PCAARRD, n.d.). Additionally, the industry faces supply issues, especially in the banana chips sector, due to the traditional Saba variety's lengthy maturation period, which takes 18-24 months before harvest (PCAARRD, 2019.).

### The Philippine Banana Industry Roadmap (2021-2025)

In the Philippine Banana Industry Roadmap (2021-2025), the Philippines ranks fourth among Asian banana growers, trailing behind India, China, and Indonesia. However, despite this ranking, a substantial portion of the produce is consumed domestically. It explores the various product forms offered by the Philippine banana industry, catering to both local and international markets. This shows that there are opportunities in banana farming.

The Philippine banana industry offers a plethora of product forms, showcasing its versatility and market adaptability:

- a. Fresh Bananas: Different varieties are primarily marketed as fresh produce, with some undergoing post-harvest processes to prolong shelf life.
- b. Banana Snacks: Locally cooked and sweetened bananas, including turn on and banana cue, are popular snacks among Filipinos.
- c. Banana Chips: Thinly sliced and processed banana chips are sold both domestically and internationally, showcasing the industry's global reach.
- d. Banana for Animal Feed: Unusable Cavendish bananas are repurposed into animal feed, minimizing waste and maximizing utility.
- e. Banana Flour: Utilizing mature green bananas, banana flour serves as a viable substitute for wheat flour, catering to health-conscious consumers.
- f. Banana Ketchup: A beloved condiment in Filipino cuisine, banana ketchup presents export potential, highlighting the industry's capacity for value-added products.
- g. Banana Blossoms: Exported to various countries, banana blossoms are gaining popularity as a versatile ingredient in Asian cuisines.
- h. Banana-derived Organic Fertilizers: Plant residues are processed into organic fertilizers, contributing to sustainable agricultural practices.

The diversification of products within the Philippine banana industry emphasizes its resilience and adaptability to changing market demands. By offering a wide array of products, the industry not only ensures its sustainability but also contributes to the country's economic growth and agricultural development.



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## Priority Recommendations for Sustainable Banana Production in Lao PDR

The document "Exploring Banana Futures: Building Sustainable and Climate Resilient Pathways in Lao People's Democratic Republic" emphasizes the necessity of integrating all relevant factors in current and future banana production in Lao PDR. It calls for stakeholders to support and implement scientific recommendations with proper permissions. Key recommendations include robust land allocation and planning through tools like pFALUPAM and AEZ maps to facilitate effective land zoning and reduce competition over land uses. Enhancing public-private partnerships through market-oriented policies, R&D initiatives, and the establishment of a banana trade association is also emphasized to encourage responsible investment in the sector.

Additionally, promoting clean and organic agricultural techniques aligned with the Department of Agriculture's criteria, alongside targeted education programs on best practices and Integrated Pest Management, is highlighted. Capacity building to address human rights risks, gender inequalities, and safe labor practices through training programs and worker groups is deemed crucial. Facilitating access to processing technologies for banana by-products to diversify products and cater to consumer preferences is also recommended. Implementing these strategies is critical for establishing a sustainable and climate-resilient banana production system in Lao PDR, ensuring long-term viability and success in the sector through stakeholder collaboration and adherence to best practices.

## METHODS

### Research Design

This study utilized a qualitative phenomenological research design to explore the lived experiences of banana farmers in Montalban, Rizal. The qualitative approach allows for an in-depth understanding of the subject matter, capturing the nuances and complexities of farmers' experiences, needs, and aspirations (Amihan & Sanchez, 2023; Dizon & Sanchez, 2020; Muñoz & Sanchez, 2023; Sanchez, 2022; Sanchez, et al., 2024b; Sanchez, et al., 2022). Data were gathered through interviews, focus group discussions, and observations.

The use of multiple data collection techniques enhances the richness and validity of the findings, ensuring a holistic understanding of the research topic (Amihan, Sanchez & Carvajal, 2023; Sanchez, 2020; Sanchez, 2023b; Sanchez, et al., 2024c). By employing qualitative methods, the study aims to provide a comprehensive exploration of the challenges and preferences of banana farmers, which can inform the development of tailored support and extension programs.

### Instruments

The study utilized a multi-faceted approach, including focus group discussions, interviews, and observations, to gather comprehensive insights into the experiences, challenges, and preferences of banana farmers in the target area.

### Data Collection

Focus Group Discussion (FGD), in-depth interviews, field notes, reflexive journals, documentary analysis and observations were employed to gain comprehensive insights into the experiences and challenges of banana farmers. Focus group discussions allow farmers to share and collaboratively discuss their perceptions and propose solutions, guided by a semi-structured interview format and to ensure coverage and understanding of key topics. These discussions are audio-recorded and transcribed for detailed analysis. In-depth interviews with individual farmers provide a deeper understanding of their unique perspectives through semi-structured, open-ended questioning, ensuring diverse representation and capturing rich, detailed responses. These interviews are also audio-recorded and transcribed. Observations of farmers' daily activities and practices complement the survey, focus group, and interview data, offering firsthand insights and contextual understanding of their farming environment and validating the findings from other methods.



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## Population and Sampling

Fifteen (15) smallholder banana farmers from various barangays in Montalban, Rizal, were involved in this study. The participants were purposely selected to engage in focus group discussions and in-depth interviews. The qualifications considered in selecting the participants as a valid source of information were the following: 1) the participant was actively engaged in banana farming; 2) a resident of Montalban, Rizal; and 3) willing to participate in discussions and interviews about their farming experiences and challenges. To aid in the data collection process, interview questions were presented in a structured format to assist the interviewees in providing detailed responses. All interviews were digitally recorded for later transcription and coding. The recorded interviews were transcribed and analyzed using the constant comparative method.

## Data Analysis

After gathering the relevant data of the study through the responses of the participants, data analysis followed utilizing a Thematic Approach as suggested by Husserl's Phenomenological research design.

The transcribed data from a recorded of the Focus Group Discussion were collected, read, revisited, and categorized into ideas and themes to create clusters of meaning. Through this process, the researcher formulated the common meaning of the event, situation, or experience and attain a more profound understanding of the phenomenon. Directly related opinions are going to be emphasized to assess the similarity among the answers of the participants.

In order to answer the research questions, the data were analyzed utilizing Thematic Analysis. According to Maguirre and Delahunt (2017), thematic analysis is a process that involves finding patterns or themes in qualitative data. The purpose of thematic analysis is to find themes - that is, significant or intriguing patterns in the data - and then utilize those themes to discuss the research or make a point (Sanchez, et al., 2024d). A strong theme analysis goes much beyond just summarizing the data, it interprets and clarifies phenomena. For undertaking this kind of analysis, Braun and Clarke (2006) offer six-phase guidance that is a highly helpful structure: familiarizing with the data, generating initial codes, searching for themes, reviewing themes, defining themes, and writing up. These protocols were methodologically and carefully followed. To verify that no data was missing, steps one through five were accomplished (Maguire & Delahunt, 2017).

Various meanings were developed from significant responses to themes in the next stage of the analysis. Through this method, the researchers developed a common meaning of the event, situation, or experience and gained a deeper understanding of the phenomenon. The researchers would identify the various factors and gain more insight into the nature and purpose of the phenomenon.

## Ethical Consideration

Research protocols were observed by the researcher to ensure the quality and reliability of the study and research findings. The researcher sought approval from the president of the farmers associations and the participants to conduct the study. Consent letters were provided for the participants to express their willingness to take part in the study. When approved, the researcher scheduled the FGD and interviews with the participants. The researcher personally conducted the interview. Interview questions were given ahead of time to prepare the interviewee in answering the questions. All interviews were recorded for later verbatim transcription. Before the recording, permission, and consent were sought for Data privacy act compliance. Pseudonyms were used to maintain the anonymity of the participants during the document analysis. The data gathered remained confidential and anonymous. Nobody, other than the researcher knew their answers to the interview. The collected data were discarded after they has served their purpose.

## RESULTS and DISCUSSION

This section presents the analyses and interpretation of data obtained from the participants of the study. The information is presented in themes with interpretation and implication. The presentation is organized based on the order of the problems in the statement of the problem.



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## 1. An Overview of Banana Farmers in Montalban, Rizal

Three distinct themes emerged in the description of banana farmers in Montalban, Rizal:

### Themes

*Demographics and Crop Diversity*  
*Farming Experience and Family Involvement*  
*Supplemental Occupations*

#### 1.1 Demographics and Crop Diversity

The majority of respondents are actively engaged in banana farming in Montalban, Rizal, indicating a significant presence of banana farming within the community. In addition to bananas, farmers cultivate a diverse range of crops such as coconut, coffee, cacao, avocado, langka, star apple, mango, eggplant, and lettuce. This crop diversity suggests a multifaceted agricultural landscape in Montalban, which could help mitigate risks associated with single-crop dependency. The following are samples of transcription:

*Farmer 1: "Our crops are mostly banana, and others like eggplant, lettuce."*

*Farmer 3: "we have banana and other crops"*

*Farmer 6: "banana, coffee, cacao, coconut, langka, and many more."*

#### 1.2 Farming Experience and Family Involvement

Participants have extensive experience in banana farming, often starting from a young age alongside their fathers. This deep-rooted agricultural tradition is now being passed on to their children, who assist during weekends and school breaks. Additionally, family members, particularly wives, assist in selling the harvest. This family involvement highlights the integral role of agriculture in their daily lives and economic stability. The following are samples of transcription:

*Farmer 2: "I am helping in the farm with my father since I was very young."*

*Farmer 5: "I am a farming since I am young, all of us in the family."*

*Farmer 3: "My children, the boys, are working with me in the farm during weekends."*

*Farmer 4: "My wife assists in selling our bananas in the barangay, my children help in the farm if no school."*

#### 1.3 Supplemental Occupations

Farmers frequently engage in other occupations such as carpentry, construction work, or local government positions to supplement their income. This diversification of income sources underscores the economic challenges faced by smallholder farmers and their need for multiple revenue streams to support their families. The following are samples of transcription:

*Farmer 2: "I work in the municipal hall to have regular income."*

*Farmer 7: "I am a laborer in the construction if there is project."*

*Farmer 11: "Income in the farm is not regular and low, I need other work for my family needs"*

## 2. Perceived Challenges of Banana Farmers

During the investigation, five overarching themes emerged regarding the challenges encountered by banana farmers:

### Themes

*Pest and Disease Management*  
*Market Accessibility and Technical Proficiency*  
*Insufficient Support and Resources*  
*Water Availability and Market Prices*  
*Knowledge and Skills in Innovative Practices*



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## 2.1 Pest and Disease Management

Farmers identified pest and disease management as critical areas needing improvement. Effective pest control and disease management are essential for sustaining banana production and minimizing crop losses. The following are samples of transcription:

*Farmer 2: "We need better solutions and training to handle pests like the banana weevil and nematodes."*

*Farmer 7: "Pests are a major problem, and we need more support in managing them."*

*Farmer 3: "We lack the knowledge and resources for integrated pest management practices and need affordable options."*

*Farmer 9: "We need more research on resistant banana varieties and better disease management techniques."*

## Market Accessibility and Technical Proficiency

Market accessibility remains a significant challenge, with farmers struggling to sell their harvest at favorable prices. Additionally, there is a need for enhanced technical proficiency in processing techniques to add value to their products. The following are samples of transcription:

*Farmer 4: "We need better infrastructure and market access to improve our sales."*

*Farmer 5: "We need more training and equipment to process bananas into higher-value products."*

*Farmer 3: "We need more support to get better prices and understand market trends."*

*Farmer 2: "We need training in proper handling and transportation techniques to maintain quality and get better prices."*

## 2.2 Insufficient Support and Resources

Farmers seek help from government agencies for agricultural supplies such as seeds, fertilizers, and tools, as well as for training. However, they find this assistance insufficient. To supplement their income, many also work as laborers or carpenters. The following are samples of transcription:

*Farmer 1: "I get support from Department of Agriculture through their programs for supplies and equipment."*

*Farmer 2: "Students from University of the Philippines helped us through their programs by giving farming equipment."*

*Farmer 9: "I get help from barangay or any agency to help me for seeds, fertilizers and other tools for agriculture."*

## 2.3 Water Availability and Market Prices

The availability of water, particularly during the summer or dry seasons, poses a significant challenge. Farmers also express frustration over the low market prices for their harvests, which impacts their overall income and sustainability. The following are samples of transcription:

*Farmer 1: "It is very hard during dry season, because of poor water system in our farm."*

*Farmer 5: "We can only sell our products in a very low price, so they will buy our harvest."*

*Farmer 13: "Our vegetables get very dry during summer, it is very hard."*

## 2.4 Knowledge and Skills in Innovative Practices

Farmers admitted to lacking knowledge and skills in innovative farming practices. They also face a shortage of farming equipment and supplies, further hindering their ability to implement modern agricultural techniques. The following are samples of transcription:

*Farmer 3: "I don't know how to make products from our harvest, we only sell the vegetables and banana."*

*Farmer 6: "I have very limited knowledge about innovative farming practices."*

*Farmer 9: "We need enough farming equipment and supplies for modern agriculture."*

*Farmer 15: "Lack of knowledge about innovation, traditional farming only."*



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### 3. Empowering Banana Farmers in Montalban, Rizal: Insights and Implications for Tailored Support and Extension Programs

The analysis revealed four key themes regarding the impact of tailored support and extension programs in empowering banana farmers:

#### Themes

*Awareness of Support Programs*  
*Role of Farmers' Associations*  
*Income Generation and Product Distribution*  
*Training and Development Needs*

#### 3.1 Awareness of Support Programs

A small percentage of farmers are aware of existing support programs from local government, colleges, and universities. There is room for improvement in disseminating information about available resources and initiatives to ensure farmers can fully benefit from them.

The following are samples of transcription:

*Farmer 1: "I am not familiar that there are programs in the school like colleges."*

*Farmer 2: "sometimes, there I am informed about school support programs for agriculture."*

*Farmer 7: "I don't know how to get support from schools."*

*Farmer 10: "I am not aware that there is support from schools."*

#### 3.2 Role of Farmers' Associations

Most farmers are members of farmers' associations, which provide benefits such as representation in government agencies for acquiring fertilizers, supplies, and equipment. Associations play a crucial role in advocating for farmers' needs and facilitating access to resources. The following are samples of transcription:

*Farmer 1: "Associations help us get fertilizers and equipment by representing us to the government."*

*Farmer 3: "Our association advocates for our needs and helps us access necessary resources."*

*Farmer 6: "Being part of the association means we can get supplies and support more easily."*

*Farmer 9: "Associations play a key role in securing the resources we need for farming."*

#### 3.3 Income Generation and Product Distribution

Farmers primarily generate income from selling their products but have limited knowledge on product distribution and sustainable agriculture practices. Only one farmer mentioned producing vinegar from banana harvests, indicating potential for diversification.

The following are samples of transcription:

*Farmer 2: "We mostly sell raw bananas and lack knowledge on distribution and sustainable practices."*

*Farmer 7: "Income comes from selling our products, but we don't know much about better distribution methods."*

*Farmer 3: "Our income is limited by our lack of knowledge in product distribution and sustainable farming."*

*Farmer 9: "There's potential for diversification, like making vinegar from bananas, but we need more information."*

#### 3.4 Training and Development Needs

The unanimous interest among farmers in learning about value-added banana products and their willingness to participate in training workshops highlights the need for tailored extension programs. Farmers expressed a desire for support in marketing their products and increasing their income through innovative practices.

The following are samples of transcription:





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*Farmer 3: "We are interested in training for value-added products to increase our income."*

*Farmer 5: "Training workshops on marketing and innovative practices would be very helpful."*

*Farmer 10: "We need support in learning how to market our products effectively."*

*Farmer 12: "Tailored training programs could help us improve our income and product quality."*

#### 4. Fostering Agricultural Innovation and Market Expansion

During the research, three prominent themes emerged regarding the interests and needs of the participants for learning, training, and support:

##### Themes

*Interest in Value-Added Products*

*Willingness to Collaborate with Educational Institutions*

*Need for Training and Market Support*

##### 4.1 Interest in Value-Added Products

Farmers showed a unanimous interest in learning about value-added banana products, recognizing the potential economic benefits of product diversification. This interest forms a strong basis for extension programs focused on innovation. The following are samples of transcription:

*Farmer 2: "I am very interested, I will sure join."*

*Farmer 4: "I am happy to join to learn more how to make products from banana."*

*Farmer 7: "I want to learn to make products and about banana farming to earn more."*

*Farmer 11: "I like to join to any learning for me to have more income."*

##### 4.2 Willingness to Collaborate with Educational Institutions

Farmers' willingness to collaborate with educational institutions reflects a proactive approach to improving their practices and diversifying their products. This collaboration can enhance knowledge and skills through targeted training. The following are samples of transcription:

*Farmer 4: "I like to participate to the school and learn about banana farming."*

*Farmer 8: "I am very interested to work with the school about banana farming products and farming."*

*Farmer 10: "I am very interested to be part of the school program about banana farming."*

##### 4.3 Need for Training and Market Support

Farmers expressed a need for formal training to enhance their skills and improve their income. They also seek support for basic farming needs such as tools, equipment, and supplies, as well as assistance in marketing their products. The following are samples of transcription:

*Farmer 2: "I need a training to improve my skills in farming."*

*Farmer 7: "farming tools, equipment, supplies will surely help us."*

*Farmer 3: "We do not know how to market our coffee and other harvest."*

*Farmer 9: "I need training to improve my income."*

These findings align with the definition and legal bases of extension programs outlined by Bicol University, emphasizing the importance of systematic transfer of technology and innovation from higher education institutions to address specific developmental concerns. By incorporating these findings into its extension program, Colegio de Montalban can effectively foster agricultural innovation, facilitate market expansion, and support local community development.

#### Conclusions

The following results were disclosed after the data gathered were analyzed:



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The research provides a comprehensive overview of smallholder banana farming in Montalban, Rizal, highlighting the significant presence of banana farming within the community and the cultivation of diverse crops by farmers. Generational involvement and the active participation of family members indicate a deep-rooted agricultural tradition and the collaborative nature of farming practices in the area. Farmers face significant challenges, including pest and disease management, market accessibility, and technical proficiency in processing techniques. Issues such as water availability and fair market prices also pose hurdles to agricultural sustainability.

There is a proactive stance among farmers towards seeking solutions and embracing innovation, as evidenced by their interest in value-added products, willingness to participate in training workshops, and eagerness to collaborate with educational institutions. The findings align with the principles of extension programs as outlined by Bicol University, emphasizing the importance of partnerships, knowledge transfer, and targeted interventions. Tailored support and intervention programs are essential to address the specific needs and aspirations of banana farmers in Montalban, Rizal.

### Recommendations

To address the challenges faced by smallholder banana farmers in Montalban, Rizal, and to leverage their proactive stance towards innovation, the following recommendations are proposed. These recommendations are designed to enhance agricultural sustainability, improve market access, and support the overall development of the farming community.

1. Enhance Extension Programs: Institutions like Colegio de Montalban should incorporate the insights from this research into their extension programs to foster agricultural innovation, facilitate market expansion, and support sustainable agricultural development.
2. Improve Pest and Disease Management: Develop and implement targeted strategies to address pest and disease issues affecting banana farming, including the provision of technical training and resources.
3. Increase Market Accessibility: Create initiatives to improve market access for farmers, such as establishing fair trade practices and connecting farmers with larger markets.
4. Provide Technical Training: Offer workshops and training sessions focused on improving technical proficiency in farming and processing techniques.
5. Enhance Water Management: Address water availability issues by developing efficient irrigation systems and promoting water conservation practices.
6. Promote Collaborative Partnerships: Foster collaboration between farmers, educational institutions, and other stakeholders to leverage resources and knowledge for agricultural development.
7. Support Innovation and Value-Added Products: Encourage the exploration and development of value-added products through training and innovation workshops.
8. Engage the Community: Engage the local community in agricultural initiatives to ensure the sustainability and prosperity of the agricultural sector in Montalban, Rizal.

### Future Researchers

1. Conduct longitudinal studies to track the progress and impact of the implemented recommendations over time. This will provide valuable data on the effectiveness of various interventions and help refine strategies for agricultural development.



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2. Assess the effectiveness of training programs and workshops provided to farmers, focusing on the adoption of new techniques, improvements in yield and quality of produce, and overall economic impact on the farmers.

#### Policy Makers

1. Formulate policies that support smallholder farmers, including improving market access, providing subsidies or financial support for pest and disease management, and investing in infrastructure for better water management.
2. Develop comprehensive support systems that include financial assistance, access to modern farming equipment, and continuous education programs to ensure the long-term sustainability of smallholder farming.

By implementing these recommendations, stakeholders can work together to empower smallholder banana farmers in Montalban, Rizal, fostering a more sustainable and prosperous agricultural sector.

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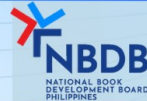
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