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Developing community-based enterprises from the selected agrarian reform communities in Quezon Province

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ABSTRACT
This research aims to develop community-based enterprises in agrarian reform communities (ARCs) anchored in urban-rural development through climate-resilient agricultural practices in Quezon Province, particularly in the municipalities of Sariaya and Dolores. Following a community-based participatory action research (CBPAR) approach, a needs assessment revealed that local farmers faced significant challenges, including overproduction, low prices, inadequate storage, and limited market access, while a few had ventured into value-added processing. Training gaps in food processing, marketing, and business skills were also identified, highlighting the need for capacity-building programs to enhance entrepreneurship and agricultural productivity. Through participatory learning trials (PLTs), a variety of value-added products, such as tomato ketchup, pork tocino, and buko pie, were developed, incorporating local agricultural produce. Training focused on food processing techniques, entrepreneurial skills, and good manufacturing practices (GMP). While feedback from participants was largely positive, challenges such as high attrition rates in certain training modules were noted. The study recommends the establishment of shared service facilities for food processing, financial assistance for capital development, and the creation of cooperatives to support sustainable entrepreneurship. Additionally, further standardization of products to meet FDA requirements, coupled with continuous monitoring and mentoring, is crucial for ensuring the long-term viability of community-based enterprises.

Contribution/Originality: This study is original as it specifically targets Agrarian Reform Community (ARC) beneficiaries with the goal of establishing a sustainable community-based enterprise. Unlike other agricultural initiatives in Quezon Province, this project introduces a distinct product innovation tailored to the local resources, cultural practices, and economic needs of the ARC members.

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1. INTRODUCTION

Agriculture plays a significant role in the development of society. In the Philippines, the agriculture sector serves as the economic backbone of societal progress, on which millions of farmers and fisherfolk are dependent. The Philippine Statistics Authority (PSA) revealed that this sector contributed an 8.2% share of the country's gross domestic product in the third quarter of 2022.

However, the development pathways of the country are geared towards urbanization and building metropolises, where economic, political, and social activities are concentrated. This has led to densely populated urban centers, such as the National Capital Region (NCR), which represents 12.37% of the country's total population (PSA, 2021a). Interestingly, the poverty incidence in Metropolitan Manila rose from 6.6% in 2018 to 7.8% in 2021, despite being the richest region in the country (PSA, 2021b). The prolonged COVID-19 pandemic and the inflation rate were among the attributed causes for these numbers (Correa & Abueg, 2020).

Leading the food security and agricultural productivity concerns is the Department of Agriculture (DA), which is mandated to create a sustainable food production system in the post-pandemic recovery period. Related to this, the Adaptation and Mitigation in Agriculture (AMIA) Program was institutionalized to achieve a sustainable food supply despite the changing climate that greatly affects the agriculture sector. Under this program is the employment of climate-resilient agriculture (CRA) technologies that can be adopted by farming and fisherfolk communities across the country. These technologies were anchored on the spatial and temporal analysis conducted in the earlier phase of the AMIA program.

One of the identified sites for interventions by the Department of Agriculture (DA) is Quezon Province. It is the largest province in the CALABARZON Region in terms of land area and is considered the food basket of the region due to its production records of crops. Strategically located within the province, the identified areas for implementation are Dolores, Sariaya, and Macalelon. Agrarian reform communities (ARCs) are present in these sites. The DA focuses on interventions such as capacity building, household food sufficiency, livelihood, and agri-fishery enterprises.

Operationalizing the support to the ARC, the DA will integrate the BP2 program and the Climate Resilient Agriculture (CRA) approach applied in AMIA villages to two selected ARCs in Quezon province. The convergence of CRA is expected to create a sustainable social enterprise adaptive to the changing climate and vulnerabilities of the identified project sites in the province in the context of post-pandemic recovery.

In attaining its vision, Southern Luzon State University (SLSU) strives to provide transdisciplinary research and responsive extension services that will advance knowledge creation, social development, and economic growth in Quezon Province and the CALABARZON Region. Previously, SLSU has been engaged in AMIA programs, particularly in the conduct of Climate Risks Vulnerability Assessment (CRVA) in Quezon Province and in establishing a community-based enterprise in AMIA Village at San Francisco, Quezon. Likewise, SLSU received grants from the Bureau of Agricultural Research of the Department of Agriculture (DA) to produce agricultural products and technologies needed for farming community transformation and technology commercialization. In terms of extension programs, the university is engaged in capacitating communities in the provinces not just in climate change adaptation and resilience, but also in skills development and knowledge enhancement that can be useful for the economic development of partner communities. In this sense, the university is committed to providing its expertise in establishing climate-resilient and sustainable communities in the province.

This project was implemented to support the DA Regional Field Office IVA in executing the community-based enterprise development program in Quezon Province and to incorporate it into the AMIA program framework.

1.1. Objectives

This study has the following objectives.

1. Determine the needs of Agrarian Reform Communities (ARC) in developing a social enterprise.
2. Establish resilient and sustainable ARC communities in the two (2) municipalities of Quezon Province through capacity building; and
3. Implement activities that will help the villagers develop social enterprises for the sustainable livelihood of the established climate-resilient ARC communities.

2. METHODOLOGY

This project is framed on a multi- and interdisciplinary community-based participatory action research (CBPAR). CBPAR is an applied research methodology that actively involves stakeholders throughout the research process at a community level. This approach is well-suited to the nature of the project since it will enable beneficiaries in ARCs to analyze, elicit, and evaluate their situations and to develop a common perspective on their needs, local knowledge, agricultural practices, community potentials, and business endeavors. It is a research framework that aims to address the practical concerns of people in a community and fundamentally changes the roles of the researchers and those being researched. "The CBPAR framework begins with a community's issue, proposed action, or strategy and then supports or enhances this action with research that is community-based and engaged" (Burns, Cooke, & Schweidler, 2011). It is an assessment and learning process that empowers farmers to create the information base they need for participatory planning and action. Outsiders (i.e., project team, market stakeholders, extension workers) contribute facilitation skills and external information and opinions.

For the development of community-based enterprises, primary data, key informant surveys, semi-structured interviews, and Focus Group Discussions (FGDs) were utilized to come up with a thorough assessment to formulate a baseline for the knowledge, skills, and technology inputs for the beneficiaries. This comprised the Participatory Rural Appraisal (PRA) for the needs assessment in which pertinent data sets were collected, including their profiles, training/seminars attended, production volume, marketing strategies, institutional support, and others. This approach

led to participatory development cooperation that involved training, seminars, orientation, technology transfer, establishing social support linkages, and other types of interventions in the form of extension activities. In these activities, selected beneficiaries from the ARC were provided learning opportunities through seminars, modules, and experiential workshops on community organization and education, and social enterprise development, including livelihood training.

2.1. Needs Assessment for the Development of Community-based Enterprise for the Villager-farmers in selected ARCs in Quezon Province

Table 1 presents that in the selected ARCs in Quezon Province, there is a strong agricultural focus on coconut (79.10%), vegetables (74.63%), and bananas (70.15%), which rank as the top three products, indicating their prevalence in the province. The profile of the community in terms of agricultural produce reflects a typical agricultural community in Quezon Province—characterized by coconut produce and typically with vegetables alongside. One of the respondents said that they are producing "lahat po nang nasa bahay-kubo" (referring to all those mentioned in the song bahay-kubo). They mentioned that they are producing vegetables for "pinakbet," a popular Filipino vegetable dish that also includes squash or pumpkin, which is locally known as "kalabasa." However, respondents cited experiences of wastage of their produce due to very low prices from vegetable dealers. Instead of selling them, they dump the vegetables and let them rot to form fertilizers. Additionally, animal husbandry, particularly swine (64.18%) and cattle (62.69%), plays a significant role, though it is less dominant than the top crops. Moderate engagement is seen with products like citrus, such as calamansi and dalandan (32.84%), ginger (19.40%), and staple crops like corn (16.42%) and rice (16.42%). In contrast, other activities such as beekeeping, mushroom farming, and freshwater fish cultivation (some of the items included in the survey) showed no data, highlighting the selective focus on certain agricultural products over others.

The results indicate that coconut is the predominant agricultural commodity produced by the ARC beneficiaries, aligning with the report from the Province of Quezon. Quezon is the leading coconut-producing province in the Philippines, with a total production of 1,493,066.64 metric tons in 2020 (Province of Quezon, 2023). Due to its physical location, Quezon Province encompasses 4,167.6421 square kilometers of agricultural land, constituting 47.87 percent of the total provincial area. Therefore, it is evident in the current agricultural products produced by the ARC beneficiaries.

In addition, according to Briones (2014), the Department of Agriculture has identified the following priority commodities: traditional crops, including rice, corn, coconut, and sugarcane; and livestock and poultry, comprising chicken and hogs. High-value crops and fisheries encompass additional commodities. These align largely with the agricultural products produced by the ARC beneficiaries.

Table 1. Types of agricultural products available in selected ARCs in Quezon province.

Types of agricultural products*	***f***	**Percentage**	**Rank**
Cattle	42	62.69%	5
Yam/Ube	7	10.45%	14
Corn	11	16.42%	11
Rice	12	17.91%	10
Banana	47	70.15%	3
Cacao	8	11.94%	12.5
Vegetables	50	74.63%	2
Coconut	53	79.10%	1
Swine	43	64.18%	4
Poultry	24	35.82%	6
Goat	15	22.39%	8
Citrus	22	32.84%	7
Ginger	13	19.40%	9
Cassava	8	11.94%	12.5
Fish and other seafood	1	1.49%	16
Others	5	7.46%	15

Note: *Multiple response (n=67).

Table 2 shows the data on existing products, highlighting varying engagement levels in value-added processing. Interestingly, not all respondents provided data and information on value-adding, indicating their non-engagement in food processing. Products from coconut and charcoal are the most prominent, with 8.96% engagement, ranking first. Calamansi juice and pepper ranked second, which also showed significant activity (7.46%). "*Marami kaming citrus dito, dalandan at sintonis,*" proves that juice production from citrus fruits has the potential for the community. Furthermore, the FGD revealed that farmers are encountering overproduction of dalandan, which leads to wastage of this agricultural produce, as one of the respondents shared, *"oversupply po kami, itinatapon lang lalo na 'yung maliliit, oversized, at may mga batik ang balat."*

Table 2. Existing products in the selected ARCs in Quezon province.

Existing products*	*f*	Percentage	Rank
Calamansi juice	5	7.46%	3.5
Ube powder	1	1.49%	12
Rice delicacies	4	5.97%	5
Banana chips	1	1.49%	12
Tablea	1	1.49%	12
Charcoal	6	8.96%	1.5
Cassava starch	1	1.49%	12
Pepper	5	7.46%	3.5
Yam (Ube) jam	2	2.99%	7
Virgin coconut oil	1	1.49%	12
Coco jam	2	2.99%	7
Copra	1	1.49%	12
Other coconut products	6	8.96%	1.5
Honey	2	2.99%	7
Mushroom	1	1.49%	12

Note: *Multiple responses; others have no response (n=67).

On the other hand, products from rice are also among the leading products (5.97%). However, many products, including cornik, vinegar, sardines, and various coconut derivatives like coco sugar and coir dust (some of the items included in the survey), were not identified in the survey, indicating either a lack of production or market demand. Lesser engagement (2.99%) is seen in products like yam or ube jam, coco jam, and honey, reflecting modest activity in processing these goods. The low percentages for many items suggest that while there is some diversification in agricultural processing, it is limited, with a few products dominating the landscape.

Table 3. Trainings received and the level of competence of the ARC villagers in product and enterprise development.

Trainings	Trainings received				Level of competence from the training*							
	Yes		No		Very high		High		Moderate		Low	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Agricultural production	39	58.21	28	41.79	7	17.95	14	35.90	15	38.46	3	7.69
Food processing	13	19.40	54	80.60	2	15.38	3	23.08	7	53.85	1	7.69
Good manufacturing practices	11	16.42	56	83.58	1	9.09	4	36.36	6	54.55	-	-
Food hygiene	14	20.90	53	79.10	2	14.28	3	21.43	9	64.29	-	-
Philippine mandatory labelling and packaging	17	25.37	50	74.63	1	5.88	3	17.65	10	58.82	3	17.65
Application for license to operate business	9	13.43	58	86.57	-	-	2	22.22	4	44.45	3	33.33
Marketing	27	40.30	40	59.70	4	14.81	5	18.53	14	51.85	4	14.81
Cost and benefit analysis	23	34.33	44	65.67	2	8.69	9	39.13	11	47.83	1	4.35
Basic accounting	25	37.31	42	62.69	3	12.00	7	28.00	13	52.00	2	8.00
Financial literacy	24	35.82	43	64.18	2	8.33	7	29.17	13	54.17	2	8.33
Business planning	24	35.82	43	64.18	4	16.67	11	45.83	9	37.50	-	-

Note: n=67 *from respondents who said "yes."

Table 3 indicates the data on training and competence levels across various agricultural and business-related areas. It reveals gaps in both training received and skill proficiency. Agricultural production (58.21%) is the most received training. However, most of those who were trained (38.46%) were moderately competent. In contrast, food processing shows a significant training gap, with 80.60% not having received any training, and only 15.38% reaching a skill level of very competent, highlighting a critical need for more comprehensive education in this area. Good Manufacturing Practices (GMP), including sanitation procedures and food hygiene, as well as the Philippine Mandatory Labeling and Packaging, also showed low levels of training, with over 74% to 83% of respondents lacking formal training in these areas. These trainings were previously provided by other agencies such as the Department of Agriculture (DA), Department of Trade and Industry (DTI), Department of Labor and Employment (DOLE), and Department of Science and Technology (DOST), among others. But even where some training is present, proficiency remains low, as indicated by the limited number of respondents at higher skill levels. In the business domain, areas like marketing, cost and benefit analysis, basic accounting, financial literacy, and business planning have been received by less than half of the respondents (with around 35-40% of the respondents), with skill levels remaining relatively low to moderate. This suggests that even with some training, the depth of knowledge may be insufficient, particularly in more complex areas like business planning, with only 16.67% of those who were trained being highly competent. Interestingly, training on the application for a license to operate a business was least received by the ARC villagers (13.43%) and with a very low level of proficiency. Overall, the data indicates a pressing need for expanded training programs, particularly in food processing, GMP, and applications for licenses to operate businesses to elevate both the participation and proficiency of individuals in these critical areas.

Table 4. Training preferences of the ARC villagers for product and enterprise development.

Trainings	Response scale					
	Highly preferred		Somewhat preferred		Not preferred	
	f	%	*f*	%	*f*	%
Ube processing	4	5.97%	31	46.27%	32	47.76%
Meat processing	15	22.39%	31	46.27%	21	31.34%
Fruit processing	14	20.90%	36	55.73%	17	23.37%
Philippine mandatory labelling and packaging	12	17.91%	28	41.79%	27	40.30%
Vegetable processing	32	47.76%	32	47.76%	3	4.48%
Good manufacturing practices	15	22.38%	26	38.81%	26	38.81%
Application for license to operate business	20	29.85%	24	35.82%	23	34.33%
Marketing	31	46.27%	23	34.33%	13	19.40%
Cost and benefit analysis	17	25.37%	35	52.24%	15	22.39%
Product costing	17	25.37%	26	38.81%	24	35.82%
Basic accounting	21	31.34%	34	50.75%	12	17.91%
Financial literacy	24	35.82%	28	41.79%	15	22.39%
Business planning	32	47.76%	21	31.34%	14	20.90%

Note: n=67.

Table 4 reveals data on the training preferences of the ARC villagers for product and enterprise development. Among the villager-farmers who responded to the needs assessment survey, the majority of them highly preferred vegetable processing (47.76%), marketing (46.27%), and business planning (47.76%). Meanwhile, most of the respondents somewhat preferred training on meat processing (46.27%), fruit processing (55.73%), Philippine mandatory labeling and packaging (41.79%), good manufacturing practices (38.81%), application for a license to operate the business (35.82%), product costing (38.81%), basic accounting (50.75%), and financial literacy (41.79%). On the other hand, most of the respondents do not prefer ube processing (47.76%). These results are one of the bases for the series of training activities for the ARC villager-farmers. These data are consistent with the results of the FGD conducted, which revealed that they need training on value-adding, as one of them stressed, "Wala po kami masyadong training sa value adding." As mentioned earlier, their sharing during the FGD circled around vegetable and fruit processing. In addition, respondents considered meat processing as another potentially beneficial training since they look at it as a possible source of additional income: "Pwede rin po ang meat processing, pandagdag din po iyan." Meat processing is their alternative when planting and harvesting are off-season: "Kung hindi kami nagtatanim, nag-aalaga kami ng baboy." Moreover, labeling was also identified by the farmers: "Labeling po, kailangan po nating pangalanan."

Table 5. Challenges faced by the ARC villagers related to product and enterprise development.

Challenges	*f*	Percentage	Rank
Absence of potable water source	14	20.90%	5
Lack of electric supply	3	4.48%	6
Scarcity of storage facilities for processed products	37	55.22%	1
Limited buyer of processed product	31	46.27%	3
Limited access to needed ingredients	25	37.31%	4
Insufficient knowledge of advanced technology and online marketing	33	49.25%	2

Note: *Some respondents have no response (n=67).

Table 5 indicates data on challenges faced by respondents, highlighting critical barriers to effective agricultural processing and other entrepreneurial pursuits. The most significant challenge is the scarcity of storage facilities for processed products, affecting 55.22% of respondents, ranking it as the top concern. This indicates a substantial bottleneck in preserving and managing the output from agricultural processing, which could lead to product spoilage and financial losses. Another major challenge is the insufficient knowledge of advanced technology and online marketing, impacting 49.25% of respondents and ranking second. This suggests that while there may be efforts to engage in modern marketing practices, many are struggling to effectively leverage technology to expand their reach and improve their operations. Limited buyers for processed products also present a significant obstacle, with 46.27% of respondents citing this as a challenge, ranking third. This limitation could be linked to the difficulties in accessing broader markets, further exacerbated by inadequate marketing skills and technology use. Limited access to needed ingredients is another critical issue, affecting 37.31% of respondents and ranking as the fourth one. This challenge can hinder production processes, limiting the variety and quality of products that can be offered to the market. Infrastructure issues such as the absence of potable water sources (20.90%) and lack of electric supply (4.48%) are also highlighted, though they rank lower. In the FGD, it was revealed that some of the respondents received equipment assistance from DOST and have loaned capital from the Land Bank of the Philippines (LBP). However, many have argued that capital for a start-up business is at the top of their needs. Some also highlighted their concerns for warehouses for the safekeeping of products and equipment, especially during times of calamities, and market linkage to find fair and equitable prices for their products. One of the respondents shared, *"Kailangan po naming ng market na pagdadalhan, wala po kaming mapagdalahan."*

These challenges, while affecting a smaller portion of the respondents, can have severe impacts on the feasibility and sustainability of agricultural processing activities. Overall, the challenges point to a need for improved

infrastructure, better access to markets, enhanced knowledge and skills in technology and marketing, and increased availability of essential resources to support the agricultural sector effectively. These challenges align with the findings of Miano, Cabrera, Yao, Cayabat, and Laguador (2024) in their study on the needs and challenges of farmers and fisherfolk in San Francisco, Quezon Province, Philippines. However, the degree of severity associated with these challenges varies, as reflected in the differing percentages reported in their research.

2.2. Enterprise and Product Development

As revealed in the needs assessment conducted, a series of activities, mostly training and participatory learning trials (PLTs), were conducted targeting the needs of the community to develop, if not improve, their products, which may lead to the development of sustainable enterprises in villages within the ARCs. The following includes the products developed through the training conducted. For vegetable processing, the products developed are tomato ketchup, tomato sauce, pineapple-pumpkin (*pinya-kalabasa)* cupcake, and pumpkin-raisin (*kalabasa-raisin*) loaf. For meat processing, skinless longganisa and pork tocino. For fruit processing, dalandan concentrate, dalandan juice, and buko pie.

Product development is considered a key ingredient in entrepreneurship. The product developed by the ARC beneficiaries helped them establish a community-based enterprise, providing capacity and giving them opportunities to generate revenue from their products, which drives economic growth. According to Patankar and Mehta (2014), enterprise development plays a vital role in economic development and creates changes in market economies. Moreover, entrepreneurial activities fuel economic growth and development. If farmers venture into entrepreneurship, it will diversify their income source and create job opportunities for other sectors. According to Santiago and Roxas (2015), entrepreneurship shifts attention from producing more of the same things to producing value-added goods and services through managed agriculture. This can be done by stimulating entrepreneurial activities in agriculture through training, seminars, workshops, and other educational endeavors.

Furthermore, product development helps the beneficiaries acquire and enhance skills. Peredo and Chrisman (2006) observed that the economic activities undertaken by Community-Based Enterprises (CBEs), such as livestock management, cheese production, mining, trading, and handicrafts, are generally associated with the skills and experiences possessed by local individuals prior to the establishment of the CBE. Certain abilities derive from common ancestral knowledge, such as forestry, livestock, and crop management, while others have emerged from the experiences of individuals operating beyond the group.

2.3. Capability-building program for Enterprise Development in ARCs in Quezon Province

The capability-building program comprises a series of training sessions centered on entrepreneurial skills and product development, intended to develop a community-based enterprise in their ARCs. These were based on the results of the needs assessment conducted. This model was used by Miano, Cabrera, Yao, Cayabat, and Laguador (2025) to actively involve stakeholders from San Francisco, Quezon Province, Philippines. Miano et al. (2025) used it as an intervention to empower the Uber farmers and form community-based enterprises.

Several interventions were initiated to alleviate poverty in rural areas, but many failed due to certain factors (Cabanis, 1998; Ezekilov, 2011). Ballesteros, Orbeta, Corpus, and Ancheta (2017) believed that the first thing to consider for any development project is social preparation. Mula and Sevilla (2020) recognized that social preparation activities are relevant to the community organizing process. Community organizing (CO) is the process by which individuals and group members are encouraged to participate in all levels of development activities toward building community empowerment, empowering the members of the ARC to become a climate-resilient and sustainable community. One of the primary methods for fostering economic development is business growth. However, there are many diverse business models, and not all of them prioritize the well-being of the community in their daily operations.

The module given to the ARC beneficiaries aimed to equip them with the skills required for enterprise development. Moreover, this intervention provides the beneficiaries with the skills necessary to ensure the success and sustainability of the formed social enterprise.

Table 6 presents the modules, topics, and venue of the capacity-building activities for enterprise development. Among the trainings for entrepreneurial skills, the modules centered on orientation, entrepreneurial mind-setting, and values formation; marketing mindset; supply and value chain management; entrepreneurial accounting and financial management; and market-driven innovation. These are based on the needs assessment conducted at the two (2) project sites alongside existing literature and framework for enterprise development. This comprised a total of five (5) modules for entrepreneurial skills development intended for the villager-farmers of the ARCs in Sariaya and Dolores, Quezon. These activities were held from October to December 2023 and were designed as a weekly community-based class. Each module for entrepreneurial skills was taught for at least 4 hours in a lecture-workshop approach, while modules for product development were designed in 2 to 4 hours of combined lecture and hands-on activities to form a participatory learning trial (PLT).

Table 6. Modules, topics, dates, and venue of the capability-building activities.

Modules & topics	Dates & venue
Entrepreneurial skills	
Module 1: Orientation, entrepreneurial mind- setting, and values formation	October 19, 2023 (Sariaya) October 21, 2023 (Dolores)
Module 2: Marketing mindset	November 7, 2023 (Sariaya) November 20, 2023 (Dolores)
Module 3: Supply and value chain management	November 13, 2023 (Sariaya) December 5, 2023 (Dolores)
Module 4: Entrepreneurial accounting and financial management	December 13, 2023 (Dolores) December 18, 2023 (Sariaya)
Module 5: Market-driven innovation	December 18, 2023 (Sariaya & Dolores)
Product development	
Module 1: Personal hygiene, food safety, and GMP	October 23, 2023 (Dolores) October 24, 2023 (Sariaya)
Module 2: Tomato sauce & Tomato ketchup processing	November 10, 2023 (Dolores) November 15, 2023 (Sariaya)
Module 3: Meat processing (Tapa, Longganisa, & Tocino)	November 13, 2023 (Dolores) November 15, 2023 (Sariaya)
*Module 4: Buko Pie Making	December 15, 2023 (Sariaya)
Module 5: Pineapple-pumpkin cupcake and pumpkin-raisin loaf bread	December 19, 2023 (Sariaya) December 20, 2023 (Dolores)
*Module 6: Fruit processing (Dalandan juice/ Concentrate)	December 20, 2023 (Dolores)
Culminating activity	
Product pitching, team building, and project evaluation	December 22-23, 2023 (Tagaytay city)

Note: *Intended for one site only based on the needs assessment.

According to Peredo and Chrisman (2006), the Community-Based Enterprise (CBE) is a community functioning collectively as both entrepreneur and enterprise to achieve the common benefit. Community-Based Entrepreneurship (CBE) is when people in a community take part in business activities to start and run a new company that fits in with their existing social structure. With this, the intervention provided to the ARC beneficiaries was essential to achieving a common benefit and equipping them with the skills necessary to manage developed enterprises. Furthermore, as noted by Ensley, Carland, and Carland (2000), the acquired skills and experience impact the character of entrepreneurial endeavors. The community's talents and experiences will be instrumental in fostering community-based enterprise. Skills and resources obtained before embarking on a business are critical elements that enhance the likelihood of success (Bygrave & Minniti, 2000; Harvey & Evans, 1995) and establish a framework for opportunity exploration (Ardichvili, Cardozo, & Ray, 2003). The community serves as the entrepreneur, and the establishment and efficacy of a Community-Based Enterprise (CBE) are significantly influenced by the community's capacity to innovatively integrate and adapt diverse ancestral and contemporary skills, experiences, collaborative practices, and values.

Table 7. Participants' evaluation and attendance attrition during the capability-building program.

Clustered modules/ Activities	Participant's evaluation		Participants' attendance	
	Mean rating	Interpretation	No. of participants	Attrition rate (%)
Orientation, entrepreneurial mind- setting and values formation	4.69	Excellent	60	Baseline
Marketing mindset	4.87	Excellent	49	81.67
Supply and value chain management	4.87	Excellent	44	73.33
Entrepreneurial accounting and financial management	4.84	Excellent	36	60.00
Market-driven innovation	5.00	Excellent	20	33.33
Personal hygiene, food safety, and good manufacturing practices	4.75	Excellent	30	50.00
Tomato sauce and tomato ketchup processing	4.77	Excellent	40	66.67
Meat processing	5.00	Excellent	38	63.33
Buko pie making*	5.00	Excellent	15	25.00
Pineapple-pumpkin cupcake and pumpkin-raisin loaf bread processing	5.00	Excellent	39	65.00
Fruit processing (*Dalandan* juice/ Concentrate)*	4.87	Excellent	15	25.00
Culminating activity	5.00	Excellent	49	81.67

Note: *Intended for one project site only
4.20-5.00 = Excellent. 1.80-2.59 = Fair.
3.40-4.19 = Very satisfactory. 1.00-1.79 = Poor.
2.60-3.39 = Satisfactory.

Table 7 indicates participants' evaluation and attendance attrition during the capacity-building program. The training sessions and activities conducted from October to December 2023 received consistently excellent evaluations from participants, with mean ratings ranging from 4.69 to 5.00. Despite the high satisfaction levels, as reflected in these

ratings, there was considerable variation in the attrition rates across the different modules. The marketing mindset module and the culminating activity had the highest attrition rates at 81.67%, while the buko pie-making and fruit processing (*dalandan juice/concentrate*) sessions had the lowest attrition rate at 25.00%. This low attrition is due to the fact that the two modules are intended for each of the two project sites. Overall, while participant feedback was overwhelmingly positive, the differing attrition rates suggest varying levels of sustained engagement or attendance among participants, potentially due to the nature or timing of the modules offered.

3. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The Philippines remains an agricultural economy, and its social development relies on various interventions spearheaded by the Department of Agriculture (DA) focused on enhancing local industries, improving food security, and promoting agricultural productivity. Baconguis (2022) asserts that the implementation of technology at the farm level is crucial for agricultural development to achieve the Department of Agriculture's purpose of improving farming communities. Agricultural extensions enhance the agricultural sector's development by increasing production through knowledge distribution, capacity building, and the provision of support services to farmers and fisherfolk. In Quezon Province, one of the identified implementation sites, the DA integrates climate-resilient agriculture (CRA) practices to ensure long-term agricultural sustainability in the face of climate change. In the past, Southern Luzon State University (SLSU) was tapped to implement various initiatives related to the development of climate-resilient communities.

This project, anchored in a community-based participatory action research (CBPAR) approach, sought to assess community needs and the creation of sustainable community-based enterprises in agrarian reform communities (ARCs) in the municipalities of Sariaya and Dolores, province of Quezon. According to Wilson (2019), community-based participatory research (CBPR) is considered an equitable research methodology implemented within a social justice perspective. It has been characterized as a continuum of research methodologies ranging from action research to participatory action research. Researchers are increasingly attracted to Community-Based Participatory Research (CBPR) for collaborative studies that prioritize community involvement to address disparities stemming from socioeconomic disadvantages. The needs assessment conducted among villager-farmers in Sariaya and Dolores ARCs highlights the community's strong focus on coconuts, vegetables, and other fruits as key agricultural products. Many farmers face challenges, such as overproduction, low prices, and product wastage. While a few have engaged in value-added processing (e.g., coconut and citrus juice), training gaps are evident, especially in food processing, business skills, and good manufacturing practices (GMP). The main challenges include inadequate storage, limited knowledge of technology and online marketing, and a lack of buyers for processed goods. There is a strong demand for training in vegetable and meat processing, marketing, and business planning. Additionally, infrastructure issues like limited access to water and electricity, along with insufficient capital and market access, hinder business growth. The findings suggest the need for expanded training and support in these areas to enhance productivity and entrepreneurship among the farmers. Through participatory learning trials (PLTs), vegetable, meat, and fruit products that include tomato ketchup, tomato sauce, pineapple-pumpkin cupcakes, pumpkin-raisin loaf bread, pork tapa, skinless longganisa, pork tocino, dalandan concentrate, dalandan juice, and buko pie were developed based on the needs assessment and profile of the ARCs. Each product was developed with distinct procedures, product costing, packaging, and labeling. To form the community-based enterprise, a series of training activities were conducted for villager-farmers in Sariaya and Dolores, Quezon. The capacity-building program focused on developing entrepreneurial skills and food product development. Participants learned food processing techniques for vegetables, meat, and fruits, as well as essential entrepreneurial skills like entrepreneurial mind-setting and values formation; marketing mindset; supply and value chain management; entrepreneurial accounting and financial management; and market-driven innovation. Additional training on food safety, personal hygiene, and good manufacturing practices was provided. A culminating activity evaluated the products developed through product pitching and set up team-building sessions to hone interpersonal skills and attitudes toward the work of the project beneficiaries. While participant feedback was overwhelmingly positive, there were varying attrition rates across modules, with some sessions experiencing higher drop-offs than others.

Given the outcomes of the project, recommendations for future directions of the climate-resilient community-based enterprise include the (1) establishment of a shared service facility for food processing equipped with necessary tools and equipment; (2) financial assistance for capital build-up; (3) forming a start-up cooperative or reviving the initially established cooperative may also be considered as good support for the entrepreneurial activities; (4) strategic market linkage for the products developed; (5) testing and further standardization of the food products shall be undertaken to comply with the requirements of the Food and Drug Administration (FDA); and (6) periodic monitoring and evaluation mechanisms should be put in place, as well as continuous mentoring to ensure the sustainability of the enterprise.

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