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Research Paper

The Socioeconomic Implications of Government Initiatives on the Organic Vegetable Production in Los Baños, Laguna

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Abstract

The global demand for organic produce has risen due to health and wellness trends, driving the expansion of organic vegetable production. In the Philippines, government efforts have aimed to increase organic farming by providing various forms of public support. This study aims to assess the social and economic implications of the government initiatives on organic vegetable production in Los Baños, Laguna. It profiles farmers by age, sex, education, civil status, income source, organization affiliation, experience, and farm size. The study also examines government support in education, capacity building, farm inputs, financial incentives, infrastructure, regulation, and marketing. Data from 34 farmers were collected through structured questionnaires and analyzed using descriptive statistics and thematic analysis. Most farmer-respondents are married and aged 40-60 years; there are more females than males. All the farmers have had formal schooling, most of whom are secondary graduates. Their primary source of income is farming, including the cultivation of organic vegetables; hence, they are members of the existing association in the municipality. They have existing knowledge of organic vegetable production even before the government's plans and interventions on organic vegetables were implemented. Their farms measure one hectare or less for organic vegetable production. Government interventions have positively influenced their organic vegetable production both socially and economically. However, further targeted support is needed, including age-specific programs, gender-responsive initiatives, better education and training, infrastructure development, and improved market access. Recommendations to implement government initiatives effectively include implementing one-package-deal programs, continuous monitoring, transparency, shared learning, and investment in research and development.

Keywords: *Organic Vegetable Production, Socioeconomic Implications, Impact Assessment*

INTRODUCTION

Organic agriculture is a form of agricultural production that does not use synthetically compounded fertilizers, growth regulators, pesticides, livestock feed additives, or genetically engineered products, and relies on ecological processes, biodiversity, and cycles adapted to local conditions. This production system incorporates traditional knowledge, innovation, and science (Nelson et al., 2019).

The industry is rapidly growing due to rising disposable incomes. Interest in wellness and immunity, and concern for healthy, safe food consumption, also surged, significantly impacting organic market growth. Due to this demand, organic vegetable production has tremendously increased. Globally, organic farm area increased from 70,984,489.89 hectares in 2018 to 76,403,778.32 hectares in 2021 (Mordor Intelligence, n.d).

In the Philippines, the goal was to have organic vegetable farming practiced on 483,550 hectares, or 5% of the total agricultural land, by 2016. Unfortunately, 107,911 hectares were actually devoted to the organic farm that year. However, the number of farmers practicing organic vegetable production increased by 400% from 2011 to 2015, rising from 9,000 to 43,000 (Nelson et al., 2019). This proved that farmers shifted their farming practices from conventional to organic farming [A2.1]. It was made feasible with the help of the government.

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Different local and national government agencies provide technical, financial, and marketing assistance to the industry. Moreover, Maghirang et al. (2011) acknowledged the imperative role of research and scientific support in organic agriculture. Aguinaldo et al. (2017) emphasized value chain support beyond production, as seen in Davao City. De Guzman et al. (2017) found that stakeholder collaboration within and outside organic agricultural organizations enhances industry growth.

This shift from conventional to organic farming, driven by different factors, has socioeconomic implications. This study would answer the question of what the socioeconomic implications of those initiatives are, focusing on the government-led initiatives for the farmers of Los Baños, Laguna, by characterizing the farmers engaged in organic vegetable production in the municipality, identifying the government interventions received by the organic vegetable farmers, determining the social and economic implications of these interventions, and providing recommendations for the future endeavors of the industry.

LITERATURE REVIEW

Evidence showed that farmers shifted their farming practices from conventional to organic. The shift is driven by stakeholders' perception that organic farming is a means to achieve sustainable development. The theory of sustainable development defines sustainable development as meeting the needs of the present without compromising the ability of future generations to meet their own needs. The development shall be aligned with environmental conservation, economic development, and social sustainability.

Also, based on a review of related literature and studies, organic vegetable production offers many opportunities and positive impacts for practitioners and the community as a whole. Additionally, organic farming, including organic vegetable production, encompasses numerous United Nations Sustainable Development Goals (SDGs), specifically SDG 1: End poverty in all its forms everywhere and SDG 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.

SDG 3: Ensure healthy lives and promote well-being for all at all ages, SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all, SDG 5: Achieve gender equality and empower all women and girls, SDG 6: Ensure availability and sustainable management of water and sanitation for all, SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all, SDG 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation, SDG 10: Reduce inequality within and among countries, SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable, SDG 12: Ensure sustainable consumption and production patterns SDG13: Take urgent action to combat climate change and its impacts, SDG14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

SDG 15: Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss. SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels. SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development (Setboonsarng & Gregorio, 2017).

Successful organic vegetable farming can be achieved if guided by the Agricultural Innovation System (AIS). AIS recognizes that agricultural innovation is a process that involves a network of actors, such as individuals, organizations, and enterprises, together with supporting

institutions and policies in the agricultural and related sectors that bring existing or new products, processes, and forms of organization into social and economic use (IFPRI, 2019).

Organic farming has been recommended and widely promoted by the government, one of the actors in the AIS. The first legal instrument supporting this practice in the country was Executive Order 481, or "Promotion and Development of Organic Agriculture in the Philippines," by former President Gloria Macapagal Arroyo. This EO aligns with the vision of making the country the capital of organic agriculture in Asia (Department of Agriculture, n.d).

Organic agriculture was then institutionalized by Republic Act 10068, or the Organic Agriculture Act, signed in April 2010, and The National Organic Agriculture Program (NOAP) (n.d.) was created. From then on, different local and national government agencies provide technical, financial, and marketing assistance to the industry.

This study, guided by sustainable development theory and the concept of agricultural innovation systems, hypothesized that farmers engaged in organic vegetable production in Los Baños, Laguna, experience significant social and economic benefits as a result of government initiatives promoting organic agriculture, thereby improving livelihoods and community well-being.

RESEARCH METHOD

This study employed a mixed-method design that utilized both qualitative and quantitative research. A mixed-methods design is the most appropriate approach to extract the data needed for the study thoroughly. Quantitative research, specifically the quantitative-descriptive approach, used measures of central tendency and a 4-point Likert Scale. Recommendations and the reasons farmers chose specific Likert-scale responses were then derived from qualitative data analysis.

The data-gathering procedure began with a request for a list of organic farmers from the Municipal Agriculturist's Office of Los Baños, Laguna. The municipality is widely known as the Special Science and Nature City. It continues to be home to various national and international agricultural research institutions that produce valuable research for its local farmers. The respective outputs and technologies developed by these researchers were transferred to them through capacity building, commercialization, and policy measures.

The farmers then adopt those they perceive as beneficial to their social and economic welfare. Moreover, due to the benefits and existing opportunities in the locality, organic farming has become a priority of the LGU. The researchers personally interviewed all 34 farmers according to the agreed schedule, based on the respondents' and researchers' availability. The questionnaire, formulated by the researcher beforehand, sought validation from the statistician and subject-matter expert [A4.1] [A4.2], whose recommendation was to use a Likert scale. The data gathering was conducted in March 2024.

After administering the questionnaire and recording the interview with a cellular phone, the data gathered were cleaned, tallied, tabulated, and interpreted. By combining descriptive statistics for socio-demographic characterization, Likert scale analysis for quantitative data on government interventions, and descriptive analysis for qualitative insights, recommendations were formulated.

FINDINGS AND DISCUSSION

Characteristics of Respondents

Table 1. Farmers' Profile

Variables		Frequency	Percentage
Age	30-40 years old	4	12%
	40-50 years old	11	32%
	50-60 years old	11	32%

	60-70 years old	6	18%
	More than 80 years old	2	6%
Sex	Female	27	79%
	Male	7	21%
Education	Elementary Undergraduate	3	9%
	Elementary Graduate	7	21%
	Secondary Undergraduate	2	6%
	Secondary Graduate	17	50%
	College Undergraduate	3	9%
	College Graduate	2	6%
Civil Status	Single	4	12%
	Married	26	76%
	Widow/Widower	4	12%
Primary Source of Income	Farmer	18	53%
	Fruit and Vegetable Vendor	9	26%
	Others	6	18%
	None	1	3%
Years of Experience	1 - 5 years	9	27%
	6 - 10 years	21	62%
	more than 10	4	12%
Organic Vegetable Farm Size	50	2	6%
	100	11	32%
	200	1	3%
	300	4	12%
	500	2	6%
	700	1	3%
	1,000	2	6%
	2,000	1	3%
	2,500	1	3%
	5,000	2	6%
	10,000	7	21%
Will continue organic vegetable production	Yes	33	97%
	No	1	3%

Farmers engaged in organic vegetable production in Los Baños, Laguna, are primarily aged 40-50 and 50-60 (32%). Following this group are farmers aged 60-70 (18%) and 30-40 (12%). Notably, two farmers are older than 80. This age distribution aligns with the Department of Agriculture's (n.d) reports, highlighting a potential future decline in the number of organic farmers.

In terms of gender, the majority of the farmers are female (27 out of 34 or 79.4%). This trend might be due to organic vegetable production providing additional income, a role women often undertake. West (2018) supports this, noting that women are more involved in organic farming, emphasizing quality of life, health, safety, community education, social and environmental justice, and civic duty.

Educationally, half of the farmers are secondary graduates, with others being elementary graduates (20.6%), college undergraduates (8.8%), elementary undergraduates (8.8%), college graduates (5.9%), and secondary undergraduates (5.9%). This suggests that farmers engaged in organic vegetable production generally have some level of formal education.

Briones (2017) claims that farmers' education levels have improved. This is advantageous for the organic vegetable industry, as formally educated farmers are better at acquiring, interpreting, and utilizing information, making them effective decision-makers and resource managers (Ninh, 2020). Educated farmers also adapt more readily to new technologies and are more knowledgeable about organic farming and its environmental impacts (Nelson et al., 2019).

Most farmers engaged in organic vegetable production in Los Baños are married (76.5%). Providing safe and nutritious food for their families is a significant motivation for pursuing organic farming. Less than 25% of their produce is consumed by their families, with 75% sold in markets (FAO, 2020).

Farming is the primary source of income for 53% of respondents. In addition to organic vegetable production, they raise organic livestock and poultry, and grow organic fruits. Nine farmers (26%) are also fruit and vegetable vendors, selling their own and their neighbors' produce. Others are sari-sari store vendors (6%), barangay tanods and councilors (6%), reflexologists (3%), and homemakers (3%). These farmers see organic farming as an additional source of income.

The farmers' experience in organic vegetable farming varies. Those with less than five years of experience started around 2015 but shifted focus to other income sources. The year 2015 marked a strong promotion of organic vegetable production under Mayor Caesar P. Perez. Farmers with 5 to 9 years of experience continued farming, encouraged by the local government's support. Those with 10 to 53 years of experience had been practicing organic farming before 2015, utilizing traditional methods they later identified as organic.

On average, farmers use 3,103 sqm of land for organic vegetable production, with some cultivating as little as 50 sqm and others up to 1 hectare. This farm size is comparable to organic farms in Tarlac, Quezon, Camarines Sur, Iloilo, Negros Occidental, Negros Oriental, Cebu, Bukidnon, and Davao, where half of the farms are less than 1 hectare (Nelson et al., 2019).

Out of 34 farmers, 22 (64.7%) actively plant organic vegetables, including alugbati, ampalaya, beans, bok choy, Chinese petchay, gabi, squash, tomato, kamote, radish, lettuce, lima beans, ginger, mustasa, okra, papaya, sayote, sili, sitaw, spinach, eggplant, pepper, pechay, and pipino. Twelve farmers (35.3%) have stopped production for various reasons, including work commitments, age, vending activities, childcare responsibilities, pregnancy, and the higher water requirements during the summer. Despite these challenges, 97% of the farmers (33 out of 34) are eager to continue organic vegetable production. This enthusiasm presents a significant opportunity for the local industry to expand, sustain, and strengthen its production.

Farmers continue to produce organic vegetables due to the perceived benefits for their families and communities. It provides additional income, with some farmers relying on it as their primary source. Health benefits from consuming organic vegetables, as well as increased food availability and accessibility, are also significant motivators. Environmental safety and the desire to apply their knowledge further encourage them to pursue organic farming.

However, farmers still need government support and assistance. They require more seedlings and seeds of high-yielding, pest- and disease-resistant varieties, as well as African Night Crawlers for vermicast production. Tools such as garden hoses, nets, and plastic are also needed. Financial support for hiring laborers, procuring seeds and seedlings, and establishing water sources is essential. Infrastructure investments in irrigation and farm-to-market roads would address water supply issues and reduce transportation losses.

Farmers are aware of potential institutional markets but lack the knowledge to access them. Addressing this gap could significantly enhance their income and market reach.

Government Intervention

Table 2. Government Interventions Received by the Farmers

Government Interventions		Received	Did not received
Education and Capacity Building Program	Trainings	30	4
	Farm Visit/Cross Visit	28	6
	IEC Materials	30	4
Farm Inputs	Seedlings/Seeds	34	0
	Organic Fertilizer	22	12
	Organic Pesticide	14	20
	Farm Tools	29	5
	Communal Farms	26	8
Financial Incentives	Financial Subsidy	4	30
	Insurance	0	34
Infrastructure Investment	Green House Facility	1	33
Marketing Initiative	Market Access	22	12

Farmers in Los Baños, Laguna, benefit from various government education and capacity-building initiatives. They participate in training sessions and farm visits and receive informational materials, such as handouts and pamphlets, covering topics including organic vegetable production, benefits, land preparation, planting practices, vermicomposting, pest and disease control, postharvest techniques, packaging, labeling, marketing, and entrepreneurial skills.

Farm visits, known as Lakbay Aral, allow farmers to observe successful organic farms in Batangas, Bulacan, Cavite, Laguna, and Benguet. Unlike some regions in India, women farmers in Los Baños have equal opportunities to participate in these educational programs. For farm inputs, all farmers receive seedlings and seeds from the Local Government Unit (LGU), although they often prefer to produce or purchase their own due to dormancy issues. One farmer emphasized that "a real farmer can and should produce his/her own seeds/seedlings for the next cropping season."

Farmers also receive organic fertilizers and pesticides during training sessions. Business enterprises, introduced by the LGU, distribute samples of their organic products. A significant intervention is the provision of African Night Crawlers for vermicast production, which some farmers sell for additional income. Farm tools such as intake, pala, drum, asarol, kalaykay, wheelbarrow, lagadera, net, and shovel are provided and remain useful. Twenty-six farmers from Bagong Silang and Tuntungin-Putho participated in a communal farm established in 2015, although it is no longer functional. Some Bagong Silang farmers established a new communal farm in their barangay.

Financial assistance for organic vegetable production is limited. Four farmers received aid, with two benefiting from the SURE AID program during the pandemic, which provided a 25,000-peso loan payable over 10 years at 0% interest. One farmer participated in the Department of Agriculture's (n.d) cash-for-work program, and another received a 15,000-peso subsidy from the provincial government. Farmers lack insurance for their organic vegetables, but can obtain life insurance for 325 pesos from the Philippine Crop Insurance Corporation (PCIC), which also offers high-value crop insurance.

One farmer received a greenhouse facility for organic vegetable production and chairs several local agricultural associations. Other farmers can obtain seeds and seedlings from this facility in exchange for farm inputs that can be used as organic fertilizers or pesticides. Market access is enhanced through various government interventions. Farmers sell their produce in front

of the municipal hall, during local festivals, and via the LGU-supported online platform LB Veggie Move. The LGU also connects farmers with institutional buyers such as Landers and SNR.

Social Implications of Government Interventions

With numerous government interventions in organic vegetable production, farmers experienced various social implications. These include impacts on their education and awareness, community involvement, health and nutrition, and food security.

Table 3 outlines the social implications related to education and awareness. The highest-rated statement (M=3.93, SD=0.25) indicates that government training, cross/farm visits, and IEC materials were highly beneficial, enhancing farmers' skills and awareness of sustainable organic vegetable production. The next-highest statement (M=3.83, SD=0.38) indicates that government interventions improved farmers' knowledge through education and capacity-building programs.

Another significant statement (M=3.74, SD=0.45) highlights the ongoing need for knowledge updates. Farmers also acknowledged their existing extensive knowledge (M=3.65, SD=0.56). However, some farmers still feel they need more training and resources (M=3.21, SD=1.01), citing reasons such as age, redundancy of training topics, and a preference for practical learning through cross-farm visits.

The overall mean for the social implications of government intervention in education and awareness is 3.65. Farmers strongly agreed that government intervention significantly enhanced their education and awareness regarding organic vegetable production. Nonetheless, they expressed a need for further knowledge expansion and are open to additional educational opportunities. This aligns with Briones (2017) on improved educational attainment among farmers and Paltasingh and Goyari's (2018) findings on its positive impact on farm productivity.

Table 3. Social Implications of the Interventions in terms of Education and Awareness

Indicative Statement	Mean	Standard Deviation	Remarks
1. I have extensive knowledge of organic vegetable production.	3.56	0.56	Strongly Agree
2. The training, cross/farm visits, and IEC materials provided by the government agency regarding organic vegetable production are meaningful and beneficial.	3.93	0.25	Strongly Agree
3. Government interventions have improved my knowledge of organic vegetable production.	3.83	0.38	Strongly Agree
4. I still need to learn much about organic vegetable production.	3.74	0.45	Strongly Agree
5. I still need more training, cross/farm visits, and IEC materials to further expand my knowledge in organic vegetable production.	3.21	1.01	Agree
Overall mean	**3.65**	**Strongly Agree**	

Legend: 1) 1.00-1.49 = Strongly Disagree 3) 2.50-3.49 = Agree
2) 1.50-2.49 = Disagree 4) 3.50-4.00 = Strongly Agree

Table 4 shows the social implications of government interventions in community involvement. Statements 4 and 5 received the highest mean scores (M=3.91, SD=0.29), indicating that farmers view government initiatives as crucial for community participation and believe the community benefits from organic vegetable production. Statement 3 (M=3.88, SD=0.41) reflects

farmers' agreement that broader community engagement in organic vegetable production would be advantageous.

Farmers also support the continuation of communal farms (statement 2, M=3.56, SD=0.84), recognizing the learning opportunities these farms provide despite some conflicts among members. The overall mean for community participation implications is 3.70, suggesting strong agreement that government interventions foster community participation and benefit the entire community. Farmers believe communal farms should continue, incorporating lessons from previous implementations. Community participation is also linked to the significant involvement of women, as Briones (2017) noted, highlighting women's perception of community efforts as integral to community development.

Table 4. Social Implications of the Interventions in terms of Community Involvement

	Indicative Statement	Mean	Standard Deviation	Remarks
1.	Communal farms are successfully managed in our community.	3.22	0.75	Agree
2.	Communal farms in our community should be continued.	3.56	0.84	Strongly Agree
3.	It would be great if everyone in the community engaged in organic vegetable production.	3.88	0.41	Strongly Agree
4.	The government has been instrumental in my participation in activities related to organic vegetable production in the community.	3.91	0.29	Strongly Agree
5.	Organic vegetable production is beneficial to the community.	3.91	0.29	Strongly Agree
	Overall mean	**3.70**	**Strongly Agree**	

Legend: 1) 1.00-1.49 = Strongly Disagree 3) 2.50-3.49 = Agree
2) 1.50-2.49 = Disagree 4) 3.50-4.00 = Strongly Agree

Table 5 highlights the social implications of government interventions on health and nutrition. All statements had a mean of 4 and a standard deviation of zero, indicating unanimous strong agreement among farmers. They believe the government should prioritize citizens' health and nutrition when implementing organic vegetable production projects. Farmers consume organic vegetables to stay healthy and avoid illnesses, and believe that eating organic vegetables can solve malnutrition problems. They strongly support encouraging and continuing organic vegetable consumption. The overall mean for these social implications is 4.00. Farmers unanimously agree that government initiatives promoting organic vegetable consumption for health and nutrition have led them to prioritize organic produce, reinforcing the belief that it can address malnutrition.

Table 5. Social Implications of the Interventions in terms of Health and Nutrition

	Indicative Statement	Mean	Standard Deviation	Remarks
1.	The government considered the health and nutrition of the citizens when implementing the projects concerning organic vegetable production.	4.00	0.00	Strongly Agree
2.	My family consumes organic vegetables because of their nutritional content.	4.00	0.00	Strongly Agree

3.	Because we consume organic vegetables, my family has become healthy and has avoided illnesses.	4.00	0.00	Strongly Agree
4.	Eating organic vegetables is a solution to malnutrition.	4.00	0.00	Strongly Agree
5.	To maintain good health and prevent illness in the family and community, continuous consumption of organic vegetables is necessary.	4.00	0.00	Strongly Agree
	Overall Mean	**4.00**	**Strongly Agree**	

Legend: 1) 1.00-1.49 = Strongly Disagree 3) 2.50-3.49 = Agree
2) 1.50-2.49 = Disagree 4) 3.50-4.00 = Strongly Agree

Table 6 presents the social implications of government interventions for food security. The five statements also have a mean of 4.00 and a standard deviation of 0.00. Farmers also strongly agreed on the implications of organic vegetable production for food security. They all believed these organic vegetables should be available readily in every household. At home, they eat three or more times a day; organic vegetables are part of their diet. Their engagement in organic vegetable production contributes to the food security of their own family and community. They also believed that to maintain food security in the family and community, more people should engage in organic vegetable production.

The overall mean for the social implications of the government intervention regarding food security is 4.00. Farmers unanimously emphasized the significance of organic vegetable production for food security, advocating for the widespread availability of these vegetables in every household, as they believe in their essential role in daily diets and their contribution to sustaining food security at the family and community levels, encouraging more people to join in organic vegetable production efforts. These findings align closely with Müller's (2017) claims that food security can be achieved through organic vegetable production.

Table 6. Social Implications of the Interventions in terms of Food Security

	Indicative Statement	Mean	Standard Deviation	Remarks
1.	Organic vegetables should be readily available in every household.	4.00	0.00	Strongly Agree
2.	My family eats three times or more a day.	4.00	0.00	Strongly Agree
3.	Organic vegetable production contributes to the food security of my family.	4.00	0.00	Strongly Agree
4.	Organic vegetable production contributes to food security in the community.	4.00	0.00	Strongly Agree
5.	More people should engage in organic vegetable production to maintain food security in the family and community.	4.00	0.00	Strongly Agree
	Overall Mean	**4.00**	**Strongly Agree**	

Legend: 1) 1.00-1.49 = Strongly Disagree 3) 2.50-3.49 = Agree
2) 1.50-2.49 = Disagree 4) 3.50-4.00 = Strongly Agree

Economic Implications of Government Interventions

Aside from the social aspects of the beneficiaries, government interventions also have economic implications. The following are the implications as perceived by the respondents,

specifically regarding their revenue, employment opportunities, the growth of the organic vegetable industry, and the industry's marketing sector.

Table 7 shows the economic implications of government interventions in terms of revenue generated. The highest mean is for statement 2 (M=3.82, SD=0.39), where the family income increased due to organic vegetable production. The additional income that the farmers derived from organic vegetable production ranged from PhP 200 to PhP 25,000.00 and averaged PhP 3,132.35 per month.

Statement 4 follows (M=3.47, SD=0.90). Farmers generally agreed that the government has helped increase their income in organic vegetable production by providing farm inputs and equipment, and linkages to potential buyers. Statement 5 follows (M=3.50, SD=0.66), as farmers generally agreed that their family can save money due to organic vegetable production; some strongly agreed about the cost-saving aspect, while others may not perceive significant savings. Farmers were able to save money first from the income they earned selling organic vegetables and from their savings, since, rather than buying vegetables, they consumed their own produce.

Table 7. Economic Implications of the Interventions in terms of Generated Revenue

	Indicative Statement	Mean	Standard Deviation	Remarks
1.	Income derived from organic vegetable production is minimal.	3.09	0.75	Agree
2.	Our family income has increased due to organic vegetable production.	3.82	0.39	Strongly Agree
3.	The capital and expenses for organic vegetable production are minimal.	3.47	0.90	Agree
4.	The government has helped increase our income from organic vegetable production.	3.68	0.64	Strongly Agree
5.	Because of organic vegetable production, our family can save money.	3.50	0.66	Strongly Agree
	Overall Mean	**3.51**	**Strongly Agree**	

Legend: 1) 1.00-1.49 = Strongly Disagree 3) 2.50-3.49 = Agree
2) 1.50-2.49 = Disagree 4) 3.50-4.00 = Strongly Agree

For statement 3 (M=3.47, SD=0.90), which addresses the cost of capital and operating expenses, some farmers agreed that these are minimal because they produce their own inputs, such as organic pesticides and organic fertilizer, and use their own labor and tools. On the other hand, some farmers mentioned that the costs they incurred were high, given that organic vegetable production is labor-intensive; although they utilized family labor, labor costs accounted for the highest percentage of the total cost. During the dry season, the cost of irrigation is also huge. Farmers' responses here were deviated.

Also, farmers' opinions varied in statement 1 (M=3.09, SD=0.75); they thought that income from organic vegetables varies. This depended heavily on production levels, floods and droughts, and pest infestations. Those who believe the income from organic vegetables is minimal argue that organic vegetable production yields less than synthetically produced vegetables.

This is due to poorer weed control, lower nutrient availability, and limited possibilities to improve it. This is much more prone to pest infestation than synthetically produced vegetables. Farmers shall plant more on larger farms to achieve higher income, since income varies with their production level.

On the other hand, some farmers disagreed. They believed that income from organic vegetable production is huge, as the price of organic produce is usually 30% higher than that of synthetically produced vegetables. According to Mr. Antonio de Castro, President of the Organic Producers Trade Association (OPTA), Project Farm Manager for the ABS-CBN Eco-Village Organic Farm in Iba, Zambales, and owner of the Earthworm Sanctuary, realistically, organic produce should be cheaper than conventional produce since farmers use locally produced fertilizer, heritage seeds, and non-use of pesticides (Maghirang et.al., 2015).

The overall mean for the economic implications of the government intervention in terms of generated revenue is 3.51. Farmers strongly agree that they can earn additional income through organic vegetable farming, and government intervention helps them pursue this opportunity. With this, they can save since their production capital and expenses are minimal, even though organic vegetable production is labor-intensive and yields vary.

Table 8 shows the economic implications of government interventions for employment opportunities. Statements 2 and 3 (M=4.00, SD=0.00) have the highest mean, indicating strong agreement that individuals at any education level, age, and gender can engage in organic vegetable production. This was followed by statement 5 (M=3.82, SD=0.46), as farmers agreed that engaging in organic vegetable production is a good source of income.

For statement 1 (M=3.79, SD=0.48), respondents generally agreed that government intervention has effectively persuaded more people to engage in organic vegetable production. This is true, as the farmers began engaging in organic production after 2015-2016, the years when the local government unit strengthened and prioritized organic vegetable production in the municipality. They also witness their neighborhood engaging in organic vegetable production during those times. One farmer disagreed. She mentioned that other farmers in their barangay were persuaded but unable to sustain their organic production.

Table 8. Economic Implications of the Interventions in terms of Employment Opportunities

	Indicative Statement	Mean	Standard Deviation	Remark
1.	Due to government intervention, more people have been persuaded to engage in organic vegetable production.	3.79	0.48	Strongly Agree
2.	Anyone at any education level can be engaged in organic vegetable production.	4.00	0.00	Strongly Agree
3.	Anyone of any age and gender can produce organic vegetables.	4.00	0.00	Strongly Agree
4.	Organic vegetable production has allowed unemployed individuals to have something to do.	3.74	0.62	Strongly Agree
5.	Engaging in organic vegetable production is a good source of income.	3.82	0.46	Strongly Agree
	Overall Mean	**3.87**	**Strongly Agree**	

Legend: 1) 1.00-1.49 = Strongly Disagree 3) 2.50-3.49 = Agree
2) 1.50-2.49 = Disagree 4) 3.50-4.00 = Strongly Agree

Lastly, statement 4 (M=3.74, SD=0.62) received a relatively high average score, indicating agreement that organic vegetable production has provided an opportunity for unemployed individuals. The overall mean for the economic implications of the government intervention in terms of employment opportunity is 3.87. Farmers strongly agreed that organic vegetable production is for everyone; this is a good source of income. Hence, the government played a significant role in promoting organic vegetable production.

Table 9. Economic Implications of the Interventions in Terms of Growth of Organic Vegetable Industry

	Indicative Statement	Mean	Standard Deviation	Remark
1.	There are many buyers of organic vegetables.	4.00	0.00	Strongly Agree
2.	The supply of organic vegetables is sufficient to meet the demand.	2.79	0.77	Agree
3.	In the coming years, the supply of organic vegetables will remain sufficient.	3.15	0.70	Agree
4.	Because of government support, the organic vegetable industry is strengthened.	3.74	0.62	Strongly Agree
5.	The industry will be stronger and more sustainable if there is a cooperative for organic vegetable production.	3.74	0.57	Strongly Agree
	Overall Mean	**3.48**	**Agree**	

Legend: 1) 1.00-1.49 = Strongly Disagree 3) 2.50-3.49 = Agree
2) 1.50-2.49 = Disagree 4) 3.50-4.00 = Strongly Agree

Table 9 shows the economic implications of the government interventions regarding the growth of the vegetable industry. On average, statement 1 has the highest mean (M = 4.00, SD = 0.00). Respondents unanimously agreed that there are many buyers of organic vegetables in both existing and new markets. This is supported by Porciuncula's (2015) study and the Mordor Intelligence (n.d.) forecast.

Motor Intelligence claimed that the organic fruits and vegetables market size is estimated to be USD 46.19 billion in 2024 and is expected to increase up to USD 75.11 billion by 2024 due to the following reasons: changing to healthier lifestyles and food habits of the consumers, increased in investment of food product manufacturing companies to offer organic food, emergence of internet of things at a commercial level, rise of globalization and growth of trend shipping on online platforms making internal market more accessible, and even the initiative of the government to increase the market share.

Maghirang et al. (2015) noted that the original "niche market" for organic vegetables is now growing and becoming mainstream, with strong demand for organic produce locally and internationally. Those products were sold in international markets at higher, premium prices, and only a few were left for the local market.

In the local market, Maghirang et al. (2015) listed regular markets for organically produced products, which are generally located in supermarkets and specific food outlets in big cities. This includes the PTA Coop Store (Loyola Heights, Quezon City), Mario's Café by the Ruins (Baguio City), La Top (La Trinidad, Benguet), Bios Dynamics Cooperative Store (Davao City), Healthy Options, French Baker, The Coffee Bean and Tea Leaf Coffee Shop, Landmark Supermarkets, Robinson's Supermarkets, Rustan's, SM Supermarkets, Iloilo Supermarket, and Nature's Beauty (Cagayan de Oro).

For the weekend markets, these include the OPTA in the Lung Center of the Philippines (Quezon City), Mara's Organic Market in Legaspi Village on Sundays (Makati City), Organic Market in Salcedo Village on Saturdays (Makati City), Magallanes Organic Market on Sundays (Makati City), Organic na Negros (Bacolod City), and Tabo-an (Dumaguete City).

In the study by Nocon and Fujimoto (2006), in Metro Manila, general consumers seemed to be a more promising market than most hotels and restaurants in the area, as the latter preferred

lower-priced goods and a stable supply of produce. They also discovered that carrots and celery, commonly used as drinks to cure or prevent cancer, were the most in demand among vegetables and complementary products. As for the price, demand for organic vegetables such as carrots, tomatoes, onions, and potatoes is elastic; as the price decreases, the quantity demanded increases.

Statements 4 and 5 followed (M=3.74, SD:0.62) that the organic vegetable industry is strengthening with the support of the government and will continue thriving through the help of cooperatives. Additionally, they perceived cooperatives as more robust than their existing association; those who said otherwise preferred to work alone due to interpersonal conflicts that often arise among members of cooperatives and associations.

Regarding organic vegetable supply, as mentioned in statement 3 (M=3.15, SD=0.70), respondents generally agreed that the supply of organic vegetables will remain sufficient in the coming years. They remained positive despite current issues related to extreme weather conditions, La Niña, and El Niño. Statement 2 (M=2.79, SD=0.77) received a below-average score, indicating disagreement or uncertainty about the sufficiency of supply to meet demand for organic vegetables.

The overall mean for the economic implications of government intervention on the growth of the organic vegetable industry is 3.48. Farmers are aware of the big demand for their organic produce. The government helped them realize this and strengthen their production. They firmly believed that cooperatives could help them meet the current and future growth in demand for their produce and further strengthen and sustain their livelihoods.

Table 10. Economic Implications of the Interventions in terms of the Marketing Sector

	Indicative Statement	Mean	Standard Deviation	Remarks
1.	My own market for organic vegetables is limited.	3.24	0.92	Agree
2.	The Friday Organic Market and Booth Fair help us market our organic vegetables.	3.94	0.25	Strongly Agree
3.	Online marketing greatly helps us in selling our organic vegetables.	3.38	0.89	Agree
4.	The market for my organic vegetables is good.	3.71	0.52	Strongly Agree
5.	We still need more places/buyers to sell organic vegetables.	3.26	0.99	Agree
	Overall Mean	**3.51**	**Strongly Agree**	

Legend: 1) 1.00-1.49 = Strongly Disagree 3) 2.50-3.49 = Agree
2) 1.50-2.49 = Disagree 4) 3.50-4.00 = Strongly Agree

Table 10 shows the economic implications of government interventions in the marketing sector. The highest mean is observed in statement 2 (M=3.94, SD=0.92). During government festivals, they introduced the Friday Organic Market, located at the municipal hall of Los Baños every Tuesday and Friday, and the Booth Fair helped them promote and market their organic vegetables. Statement 4 follows (M=3.71, SD=0.52): their own market is still good; they can still meet their customers' demands and maintain strong relationships with them.

Statement 3 follows (M=3.38, SD=0.89): In this digital age, where social media is part of almost everything, organic vegetable production should be updated. Farmers agreed that online marketing greatly helps them sell their organic vegetables, as it offers limitless reach for their produce. Some disagreed because, according to them, their current system is LB Veggie Move, and payment for the products is received a week after delivery, hurting the farmers financially.

For statement 5 (M=3.26, SD=0.99), farmers' perception varies. Some answered that they still need more places and buyers to sell their organic vegetables. Seven disagreed, and two strongly disagreed. Those who said they no longer need new markets already have the opportunity to cater to institutional buyers and are currently increasing production to meet their demand.

Lastly, in statement 1 (M=3.24, SD=0.92), respondents expressed a moderate agreement that the market for organic vegetables is limited. Some had already discovered the institutional market demand, and some were not looking for other buyers until they could fully satisfy their current market.

The overall mean for the economic implications of government intervention for the growth of the organic vegetable industry is 3.51. Government interventions in marketing greatly helped the farmers; they could access a good market that they could continuously serve and maintain a good relationship with. Organic vegetables also benefited from the online market. However, their current systems still require modification, and production practices need to be adjusted to meet existing demand and prepare for future market opportunities.

Qualitative Assessment on the Socioeconomic Implications of Government Initiatives on the Organic Vegetable Production

Other effects of the interventions

Government interventions primarily have positive effects on farmers' organic vegetable production. With those initiatives, farmers gained new knowledge and enhanced their skills, which helped them manage their organic vegetable farms. They also increased their farm production and resilience to pest infestations. They also know how to properly manage unwanted weeds. The farm tools provided also became useful to the farmers for a long period.

Farmers also acknowledged the financial subsidies they received. With the money provided, they could buy additional farm tools and materials and hire the necessary human resources to prepare the land. It also helped them start over amid the outrage over the COVID-19 pandemic.

Moreover, they now base their production on market demand due to the entrepreneurial mindset they have acquired. Aware of existing buyers, they become more focused on meeting their specific needs, thereby increasing their families' profits.

Unexpected changes brought by organic vegetable production

Aside from the implications of government interventions, the farmers also mentioned the following unexpected changes that came with engaging in organic vegetable production. It was found that there are positive and negative changes.

It was found that organic vegetable production provides additional income for smallholder farmers. Farmers mentioned that this minimal income still contributed to the household's income. Income varies as production varies. Like any other crops and vegetables, organic vegetables are prone to pests, can be easily affected by typhoons, and require a lot of water; hence, they are difficult to cultivate, especially during extreme weather conditions. Above all, it is labor-intensive.

Moreover, farmers were amazed at the huge organic vegetable market. Unfortunately, not all organic farmers are aware of the institutional buyers. Hence, they are limited to serving households in their neighborhood and buyers at their stalls in municipal halls and public markets. Institutional buyers are both an opportunity and a challenge for farmers. They were motivated to cater to them. Therefore, farmers are willing and committed to continuing their production and to strengthening and sustaining the industry.

Basically, farmers were delighted since their families consume safe, free, and nutritious vegetables. With this, they can save on food and medical expenses. They can also share this within the community at a reasonable price. One of the farmers was also able to process her excess

production. She could produce dried ginger, turmeric, *kalamyas,* and *gabi* for their own consumption.

One of the significant changes the farmers observed was the use of biodegradable waste and natural products available in their surroundings. They found value in these materials through the knowledge transfer provided by the government. With the numerous benefits of organic vegetable production and consumption, the farmers shared them with their families and friends. They tried to encourage them somehow to engage in this industry.

CONCLUSIONS

The study on the socio-economic impacts of government intervention in the local organic vegetable industry reveals several key findings. Most farmers are aged 40-60, with more women participating and a majority being married and having completed secondary school. Organic farming serves as a primary or supplementary source of income, with farmers cultivating small plots and growing a variety of vegetables. Pre-existing knowledge and encouragement have led to an increase in organic farming practices.

Despite this, farmers still need better seeds, fertilizers, tools, financial support, irrigation, and market access. Government interventions, including training, farm inputs, and infrastructure, have significantly improved farmers' education, awareness, and community participation. Farmers value the health benefits and economic potential of organic produce, emphasizing its role in food security and income generation. They believe that government support and cooperatives are crucial for meeting market demands and enhancing livelihoods.

To strengthen and ensure the sustainability of organic vegetable production, the following key recommendations are provided. First, targeted support should be provided for older farmers through specialized training and financial incentives to aid land preparation, while younger farmers should receive training to build future skills. Gender-responsive programs should enhance women's role in farming, empowering them economically. Advanced education and training programs are necessary to improve farming techniques and business skills.

Support for family farmers, including family-oriented training and affordable credit, can promote continuity and success. Investments in infrastructure, such as farm-to-market roads and irrigation systems, along with improved market access, are crucial. Encouraging value-adding activities and establishing cooperatives can increase profitability and market opportunities. Collaboration among farmers, government units, NGOs, and the private sector is essential for innovation and policy advocacy.

Government initiatives should include customized "one package deal" programs, continuous monitoring with on-site visits, and transparent implementation to ensure fair distribution of resources. Shared learning opportunities and increased investment in research and development will further support farmers by enhancing techniques and addressing specific challenges in organic agriculture.

LIMITATION & FURTHER RESEARCH

This study focused solely on the socioeconomic implications of the interventions on the local farmers. This study acknowledged the potential unintended impacts on other stakeholders, such as local businesses in the industry and consumers. The study assessed only the impacts on the primary beneficiaries of the government interventions in the industry. The study was conducted in Los Baños, Laguna, during the 1st quarter of 2024. The analysis of these data was limited to the information gathered by this study through interviews with the farmer respondents.

Future studies should investigate the socioeconomic impacts of government interventions on stakeholders beyond local farmers, including consumers and businesses. Additionally, research

should focus on identifying other localities that can adopt sustainable practices and organic farming initiatives, employing action research methods to enhance farmer participation and adaptability nationwide.

REFERENCES

Aguinaldo, R., Shuck, V., & Conception, S. (2017). Impediments and development of organic agriculture: The case of vegetable value chain in Davao City, Philippines. In *Proceedings of the International Conference on Organic Agriculture in the Tropics* (pp. 389–397).

Briones, M. (2017). *Characterization of agricultural workers in the Philippines* (PIDS Discussion Paper Series No. 2017-31). Philippine Institute for Development Studies.

De Guzman, R., Nelson, G., Abrigo, G., & Baconguis, R. (2017). Selected organic agricultural organizations' social networks in the promotion of organic agriculture in Quezon Province, Philippines. *Asia Pacific Journal of Multidisciplinary Research, 5*(2).

Department of Agriculture – National Organic Agriculture Program. (n.d.). *Brief background on organic agriculture*. https://noap.da.gov.ph/brief-background-on-organic-agriculture/

Food and Agriculture Organization. (2020). *Hundreds of millions of family farmers in Asia-Pacific need help to ensure food security in the face of pandemic*. https://www.fao.org/asiapacific/news/detail-events/en/c/1300780/

International Food Policy Research Institute. (2019). *Capacity development for agriculture innovation: A practitioners' guidebook to a systems approach*. https://cd4ais.ifpri.info/what-is-an-agricultural-innovation-system/

Maghirang, R., De La Cruz, R., & Villareal, R. (2011). How sustainable is organic agriculture in the Philippines. *Transactions of the National Academy of Science and Technology, 33*(2), 289–322.

Maghirang, R., Guevara, L., & Rodulfo, V. (2015). *Eggplant production guide* (Information Bulletin No. 147-A). Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development.

Mordor Intelligence. (n.d.). *Organic fruits and vegetables market size & share analysis – Growth trends & forecasts (2024–2029)*. https://www.mordorintelligence.com/industry-reports/global-organic-fruits-and-vegetables-market

Müller, A., Schader, C., Scialabba, N. E.-H., Brüggemann, J., Isensee, A., Erb, K.-H., Smith, P., Klocke, P., Leiber, F., Stolze, M., & Niggli, U. (2017). Strategies for feeding the world more sustainably with organic agriculture. *Nature Communications, 8*, Article 1290. https://doi.org/10.1038/s41467-017-01410-w

Nelson, G. L. M., Abrigo, G. N. A., De Guzman, R. P., Ocampo, J. A., & De Guzman, L. E. P. (2019). Organic farmers in the Philippines: Characteristics, knowledge, attitude and practices. *Journal of Nature Studies, 18*(2), 26–43.

Ninh, L. K. (2020). Economic role of education in agriculture: Evidence from rural Vietnam. *Journal of Economics and Development, 22*(1), 47–61. https://doi.org/10.1108/JED-05-2020-0052

Nocon, N., & Fujimoto, A. (2006). Demand for organic vegetables in the Philippines: A study of food establishments and consumers in Metro Manila. *Journal of Agricultural Science, Tokyo University of Agriculture, 50*(4), 112–120.

Paltasingh, K. R., & Goyari, P. (2018). Impact of farmer education on farm productivity under varying technologies: Case of paddy growers in India. *Agricultural and Food Economics, 6*(7). https://doi.org/10.1186/s40100-018-0101-9

Porciuncula, F., Galang, L., & Parayno, R. (2015). Going organic: Understanding the organic vegetables production environment in Central Luzon, Philippines. *Journal of Agricultural Technology, 11*(2), 341–366.

Setboonsarng, S., & Gregorio, E. E. (2017). *Achieving sustainable development goals through organic*

agriculture: Empowering poor women to build the future (ADB Southeast Asia Working Paper Series). Asian Development Bank. https://hdl.handle.net/1813/87123

The National Organic Agriculture Program 2012–2016. (n.d.). https://noap.da.gov.ph/noap-document-fy-2012-2016-2/

West, S. (2018, April 12). *How organic farming empowers women*. Nature's Path. https://naturespath.com/en-ca/blogs/posts/organic-farming-empowers-women/