



American Journal of Sustainable Agriculture and Rural Development (AJSARD)

VOLUME 1 ISSUE 1 (2025)



PUBLISHED BY
E-PALLI PUBLISHERS, DELAWARE, USA

ADAPTABILITY OF ORGANIC FARMING PRACTICES BY FARMERS IN PIAGA- PO LANA DEL SUR

Nihaya Macalanggan Jamel¹, Norhanie Derogongan H.Jamel^{1*}, Sittie Sahaya Saber Samporna¹

Article Information

Received: October 05, 2025

Accepted: December 02, 2025

Published: December 30, 2025

Keywords

*Adaptability, Farming Practices,
Organic Agriculture, Organic
Farming*

ABSTRACT

Evaluating the effectiveness, sustainability, and economic viability of organic agricultural practices is crucial for widespread adoption. Indeed, demand for organic foods increasing (Seufert & Remankutty, 2017). Furthermore, we have to make sure that the foods we consume gives as an assurance of its quality and safety. Indeed, organic farming is essential for the preservation of land and biodiversity for the incoming next generation.

This study investigates the adaptability and effectiveness of organic farming practices among farmers in Piagapo Lanao del Sur. This study aimed to determine the adjustments made during the transition to organic farming practices; the challenges encountered including potential limitations in resources, knowledge and the analysis of strategies employed in overcoming challenges; and the current status in adopting organic farming practices.

Most of the vegetable farmers aged 26 to 35 years old, female and married with an elementary education level and a monthly income of 10,000 (in Peso) primarily cultivate chayote, squash, cabbage and pechay. Successful adoption required adjustments such as implementing crop rotation, soil analysis and timing fertilizer applications. However, significant challenges need to address in the government, particularly concerning the lack of technical knowledge and pest and disease management. Therefore, government institutions initiative is crucial to support organic farmers for sustainable practices. Also, training for pest and disease management are essential for improving crop health, yield, productivity and overall sustainability of organic farming in Piagapo Lanao del Sur.

INTRODUCTION

Organic farming is a sustainable way of cultivating crops that relies on process of creating organic inputs made from the natural ingredient of plants and animal wastes such as animal manure, green manure, fresh or dried leaves or any plant materials and agricultural by products waste that will transform it into useful fertilizer inputs (Cheung, 2022). Additionally, it is a natural way of cultivating crops to minimize the use of artificial chemicals. This method helps preserve soil fertility of the soil as and support environmentally friendly approach. When it comes to yield, it has lower yield than conventional farming but, it has a higher price due to the safety and quality foods produce products (Varanasi, 2019). Organic farming by farmers for large-scale production (Adamchak, 2024).

The popularity of organic agriculture is not only in the Philippines but, around the world due to arising environmental concerns and issue on health and food safety. Indeed, demand for organically grown foods increasing (Peng, 2019), due to health issues demand by the consumers. According to Genota (2022) pointed out that in the Philippines, the year 2005 recognize the significance of organic farming methods as stated in the Republic Act 10068 which means the promotion and growth of organic farming in the Philippines, which currently support by the government. Moreover, it is followed by the other Republic Act of the Organic Agriculture Act of 2008. In this year, the popularity of organic farming in the Philippines increased and discovered. Additionally, demand for safety and healthy foods as increasing for a healthy lifestyle which are chemical free foods in either fruits or vegetables that is naturally grown food produced products it is due to pandemic. Unfortunately, Philippines have limited certified organic markets commercial organic food products even it is popular.

This study is important to determine how organic farming working well in Piagapo Lanao del Sur. By understanding the

successes and challenges, we can make better programs to make it more accessible to farmers.

LITERATURE REVIEW

Organic Farming as Practice

Organic farming, as defined by Adamchak (2024), is an environmentally friendly method in agriculture employs on naturally made inputs mostly made from wastes of plant and animals. Vegetables are one of the products in agriculture and one of the prominent crops produced by farmers because it is part of the Filipinos' sustenance. It also includes on natural insect treatments to avoid pesticides. Organic farming had many advantages in both people and environment. Indeed, for safety and quality food products. It is recognized due to environmental impact of conventional farming to environment. In definition, conventional farming relies on the use of inputs that are destroy the health of human and biodiversity because of the chemicals carried by the certain inputs. However, Adamchak (2024) further contrast organic farming to conventional farming. For him, organic farming recycles animal waste as well as natural inputs back into the environment and it reduces pesticides use, avoid soil erosion and minimize the leaching of nitrate in underground and flow into the surface during rainfall. But On other hand, organic farming has lower yield than conventional but, is has higher price.

According to Corkill (2024) growing vegetables organically involves adopting sustainable farming methods to grow crops to lessen the use of chemical inputs in farming. It implies the avoidance of chemical fertilizers, herbicides, industrial pesticides and etc. Conversely, it grows vegetables with the application of natural made inputs and practices in cultivating crops also it involves techniques of biological pest management, crop rotation and companion planting. This is all encompassing

¹Mindanao State University-Main Campus, Marawi City, Lanao del Sur, Philippines

* Corresponding author's e-mail: norhanie.hjamel@msumain.edu.ph

method that can maintain the health of the soil for upcoming generations while producing organically vegetables devoid of chemicals input.

Organic Farming Practices in the Philippines

Rakuten (2024) insights study uncovers the roots of organic farming in the Philippines revealed that, 32% of Filipinos said that they often purchasing organic food products because it is occasional products. The people get the sense that buying organic wins hands down for healthiness than non-organic foods. Moreover, the Philippines had a long history on agriculture, including traditions and methods that have supported local populations for many years. But, with the development of modern agriculture relies mostly on the use of poisonous pollutants in the soil, which are dangerous for the environment as well as in health of human. A group of farmers set out to revive and rediscover age-old organic farming practices and response to the difficulties.

Organic Producers' Trade Association (2024) says eating non-organic food is becoming more dangerous to our health. They say that using chemicals in farming harm the environment and makes the soil lose the important nutrients that are good for us. OPTA warns against the use of chemicals in animal husbandry and the Philippines encourages organic farming through Republic Act 10068 to improve soil health, productivity, reduce pollution and protect natural resources by maintaining health of farmers and the public.

Javier & Sison (2023) studied sustainable organic vegetable farming methods in Bukidnon, Philippines. While organic farming benefits the environment, the study discovered that farmers confront problems such as limited access to organic supplies, a lack of technical knowledge, and market limits. The findings suggested that farmer training programs on organic farming methods, integrated pest management, and organic certification are required to increase capacity.

Organic Farming Practices in Foreign Country

According to Asmita Organic Farm (2023) in India, they are converting their practices in agriculture into organic farming to protect the environment as well as health of their society. Organic farming relies on natural resources from plants and animal wastes. Green manure, cover crops and cow manure as well as chicken manure are essential inputs of organic farming, improving soil fertility and promoting sustainability. In general, organic farming in India embodies a harmonious and environmentally friendly approach to agriculture, prioritizing the well-being of the land and its people.

Challenges Faced by Farmers in Adopting Organic Farming

According to Oluwatoyin (2014) most of the farmers had limited access to extension services from the government institution that results in lack of awareness and knowledge regarding to organic farming practices. Thru this, farmers may have negative attitude towards organic farming. Additionally, Mendoza *et al.* (2021) repairing soil health is a slow process due to slow decomposition process of organic matter.

According to Rakuten (2024) organic farmers in the Philippines face challenges such as limited awareness, limited market access, financial difficulties during the transition period, and higher costs compared to conventionally grown products. Government support, education programs and the creation of specialized markets are necessary to mitigate these challenges and promote sustainable agricultural practices. Additionally, Bouronikos (2021) stated that organic farming involves challenges such as climate sensitivity, pest infestations, marketing difficulties and lower production yield due to reduced use of chemicals. Despite challenges faced by farmers such as lower yield, difficulties on controlling pest but has a higher price and positive impact in

both human and environment.

Adjustment of Farmers in Adopting Organic Farming Practices

Cherlinka (2025) stated that, crop rotation is one of the way to boost yields. It is applied by the growers to prevent soil erosion, control weeds and reduce pest and disease infestations. However, it results into greater soil fertility outcome. Therefore, organic farming products deals with safety and quality produced products. It is environmentally friendly for the preservation of the ecosystem and biodiversity.

Organic Farming as Practices

In the conducted study of Pradhan & Srijaya (2024) organic farming is a practice implies on the use of natural resources from plants and animals. It also brings back nutrients to the environments after decomposition of plant and animal wastes. Additionally, it deals on avoidance on the use of the artificial nutrients such as pesticides, herbicides as well as insecticides to preserve the fertility of the soil as well as biodiversity. Most of the farmers received information from their fellow farmers specifically, from friends and/or relatives as well as opinion leaders in particular because they can easily reach due to their availability, reliability and trusted at the time of their need (Sarker *et al.*, 2007).

In the conducted study of Sohail *et al.* (2021) growing vegetables are one of primary source of income of farmers across the globe including the adaptation on the practices of organic agriculture. In affluent countries, vegetables crop have approximately 7% of farm land. Vegetables are particularly adaptable and useful to farmers in their use of organic sources of nutrients. These are some of the organic sources such as vermin-compost, biochar and farmyard manure are useful for growing vegetables.

In the study of Wang *et al.* (2024) stated that organic farming viewed as a sustainable agriculture practices that can preserve the soil fertility, yield and environmental safety. However, little attention must be in mind due to leaching of dissolved organic nitrogen due to applying organic manure excessively. Therefore, overuse of organic manure has negative impact on plants and environment. In this study, emphasis that 100% organic manure in vegetables was normally larger than those conventional farming products hence, irrigation and fertilizer should be optimized in order to minimize the leaching of dissolved organic nitrogen.

Soni *et al.* (2022) mentioned that farmers faced various challenges in organic farming practices, there has been reporting on the demand for organic food products and, consequently, organic farming. Organic farming increased all over the world. Despite all of the benefits it provides in terms of preservation of natural resources, protection of ecology, higher food quality and etc. a transitioning to organic farming is still significant challenge in developing nations such as in India.

Panday *et al.* (2024) cited that traces the development of organic farming, focusing on natural fertilizers, obstacles, and advantages. Key findings reveal that specific organic inputs such as bio solids and manure can significantly boost crop production yield. Organic farming has been evolved a thousand years ago because it deeply rooted in traditional agricultural practices also integrate biological, cultural and mechanical practices for the cycling of resources, ecological balance and for biodiversity preservation. It is a response to the rising of environmental concerns and health awareness. So that, consumers demand for organic fresh produce grown organically. Groundwater contamination is greatly decreased or organic farmers because they avoiding the use synthetic pesticides and fertilizers. For example, a thorough investigation conducted in Europe discovered that groundwater in places extensive organic farming contained 40% less nitrate than in areas with conventional farming. Water holding capacity of organically managed soils is higher than in managed

inorganically.

Fernandez *et al.* (2022) quoted that organic farming is an efficient method, because it is a comprehensive production management system that supports and improves the health of the agro-ecosystem including biodiversity biological cycles and soil biological activity it is a promising approach for sustainable agriculture within a circular and green economy. That is the consumption of vegetables. Organic has grown in popularity recently because of its higher nutritional value and lower risk of harmful chemical residues and organoleptic properties.

Bouttes *et al.* (2018) stated that in Aveyron, France, they interviewed 20 dairy farmers who were convert into organic farming, it is less dangerous, steady prices and has favourable customer impression. Additionally, organic farming lessens the exposure of their farm to fluctuating input prices.

In the study of Canqui *et al.* (2023) stated that, one reemerging approach that could help with food security and the negative environmental effects of conventional farming is organic farming. It is unclear, therefore on how organic farming influences the soil physical environment, a crucial component in the provision of soil ecosystem services. The literature shows that organic farming improves some soil physical properties compared to conventional farming, although studies on some properties are scarce. Specifically, in most studies shows that 55% of organic farming improved soil health because it boosted the soil's ability to hold water and allowed water to move through the soil better. However, organic farming did not consistently affect soil compaction sometimes, it had no impact and often the results are mixed.

In the study of Fatha & Ayoubi (2023) implies that women are more informed about organic food than men because they have knowledge on healthy foods. In addition, younger consumers are knowledgeable and aware in organic foods than the older ones. Insufficient understanding of organic foods is the main reason for the low consumption of the consumers. Moreover, in the country of Lebanon, organic foods demand increasing due to conscious awareness of health issues on foods they consume especially for younger generations.

Adesope *et al.* (2012) stated that, there are more advantages and benefits of organic farming for both environment and human such as the structure of the soil increase, conserve water and sustainability of the biodiversity. Despite the fact that in adopting organic farming faced major problems of pest and disease control that lead to lower yield and income. Furthermore, farmers adopt and/or practice certain technologies when it can return more profitable outcome to them from that certain existing technology.

Socioeconomic Profile of the Farmers

Age

According to Singh *et al.* (2025) the majority of responders fell within the middle-aged level. This distribution was probably caused by the fact that most middle-aged individuals were more eager grower and active in participating in different socioeconomic activities, especially organic farming.

Civil Status

According to Malkanthi (2020), most of the participants engaging in organic farming were married. This indicates that most of the farmers had family to feed. Indeed, farming is their sustenance and source of income.

Highest Educational Attainment

Sikudhani (2020), stated that most individuals engaged in agriculture and/or farming in rural areas only completed primary education. Furthermore, they need to participate in seminars and short courses to enable them understand various aspects of agriculture and productivity enhancement.

Farm size

According to World Bank (2021) in the Philippines, the agricultural sector is still dominated by smallholders farming 1 ha or less (57%) and 1-3 ha (32%). These farmers have few opportunities to enhance their livelihoods due to small farm size, lack of knowledge regarding production, marketing, and ability to economically capitalize on one's work (Oakesshot, 2018).

MATERIALS AND METHODS

The Respondents

The respondents of this study were the selected sixty (60) vegetable farmers in Piagapo Lanao del Sur who were adopting organic farming practices. In particular, the organic vegetable farmers which serve as the main source of information of this study.

Research Design

This study used the descriptive research design among vegetable organic farmers in Piagapo, Lanao del Sur which included a survey questionnaire as a research instrument. Vegetable farmers were investigated based on their experiences in adapting organic farming practices and how did it works in this place. Moreover, to investigate their current status in adapting organic farming.

Research Instrument

The instrument used in this study was the survey questionnaire to be given to the selected sixty (60) vegetable farmers in Piagapo Lanao del Sur. The socio-economic profile of the specific respondents was the first part in the survey questionnaire. The second part included the organic farming practices engaged by the vegetables' producers. The third part considered the adjustment made by farmers in adapting organic farming practices. The fourth part; the challenging problems faced by farmers in adapting organic farming practices. The last part was on the status of farmers after converting in to organic farming in terms of crop yield, vegetable quality and income.

Data Gathering Procedure

The data gathering procedure were the following: creating a letter of consent signed by thesis adviser to be passed to the local leaders, specifically the barangay chairman. The officials received a letter asking his permission to collect data in their area. Following the successful completion of the protocol, the researchers formally began to conduct survey by the use of survey questionnaire which were distributed in the area of Piagapo, Lanao del Sur. A house to house approach was happened through the help of my cousin and aunt live in this area to assess the participants in answering the survey questionnaire.

Statistical Treatment

In this study, the researcher was utilized the statistical treatment techniques to analyse the data gathered towards the adaptability of organic farming practices by farmers in Piagapo Lanao del Sur. Frequency and percentage distribution was used to analyse farmers' data on their socio-economic profile and the organic farming practices practiced by the respondents. Average weighted mean was used to have accurate representation of the gathered data on the adjustment made farmers, challenges faced by farmers as well as their status after converting into organic farming practices among vegetables farmers in Piagapo Lanao del Sur. The Likert Scale was used to analyse responses, with corresponding points ranging from strongly disagree to strongly agree. The study focused on the practices of vegetable organic farmer producers.

RESULTS AND DISCUSSION

Socio-Economic Profile of the Respondents

Age

Table 1 shows that one fourth (25%) of the respondents aged between 26 to 35 years old. This followed by less than one fourth are aged 46 to 55 (23%) as well as 56 years old and above (22%).

According to Singh *et al.* (2025) the majority of responders fell within the middle-aged level. This distribution was probably caused by the fact that most middle-aged individuals were more eager grower and active in participating in different socioeconomic activities, especially organic farming.

Table 1: Frequency and Percentage Distribution of the Respondents' Age

| Age | Frequency (f) | Percentage (%) |
|----------|---------------|----------------|
| 18 to 25 | 8 | 13 |
| 26 to 35 | 15 | 25 |
| 36 to 45 | 10 | 17 |
| 46 to 55 | 14 | 23 |
| 56 to 65 | 13 | 22 |
| Total | 60 | 100 |

Civil Status

Table 2 shows that more than three fourth (80%) of the respondents are married.

The data implies that majority of the farmers was married which implies that they have family to feed. Indeed, farming serve as their way of life and sustenance for their daily needs which is similar to the result of Malkanthi (2020).

Table 2: Frequency and Percentage Distribution of the Respondents' Civil Status

| Civil Status | Frequency (f) | Percentage (%) |
|--------------|---------------|----------------|
| Married | 48 | 80 |
| Separated | 2 | 3 |
| Widowed | 10 | 17 |
| Total | 60 | 100 |

Gender

Table 3 shows that more than one-half (57%) of the respondents are female while more than two fifth (43%) of the respondents are male.

According to Fatha & Ayoubi (2021) reveals that women are more informed about organic food than men. This implies that women are more aware on the unhealthy effect of inorganic foods.

Table 3: Frequency and Percentage Distribution of the Respondents' Gender

| Gender | Frequency (f) | Percentage (%) |
|--------|---------------|----------------|
| Male | 26 | 43 |
| Female | 34 | 57 |
| Total | 60 | 100 |

Highest Educational Attainment

Table 4 shows that more than one half (55%) of the respondents are in the elementary level in education. While less than one fourth (23%) have no education.

According to Sikudhani (2020) most individuals engaged in agriculture and/or farming in rural areas only completed primary education. This data implies that farmers need to participate in seminars and short courses to enable them understand various aspects of agriculture and productivity enhancement related to organic farming.

Table 4: Frequency and Percentage Distribution of the Respondents' Educational Attainment

| Highest Educational Attainment | Frequency (f) | Percentage (%) |
|--------------------------------|---------------|----------------|
| No Education | 14 | 23 |
| Elementary Level | 33 | 55 |
| Secondary Level | 6 | 10 |
| Secondary Graduate | 4 | 7 |
| College Level | 3 | 5 |
| Total | 60 | 100 |

Household Monthly Net Income

Table 5 shows that almost all (90%) of the respondents having a household monthly income of less than ₱10,000.00.

According to Soni *et al.* (2022) labor intensive in practicing organic farming method resulting in high input costs. This implies that farmers cannot easily avail organic resources due to limited monthly income.

Table 5: Frequency and Percentage Distribution of the Respondents' Household Monthly Net Income

| Income (in Peso) | Frequency (f) | Percentage (%) |
|------------------|---------------|----------------|
| Less than 10,000 | 54 | 90 |
| 10,000 to 20,000 | 6 | 10 |
| Total | 60 | 100 |

Farm Size

Table 6 shows that less than two thirds (65%) of the respondents having a have farm sizes in between 1 to 2 hectares.

According to World Bank (2021) in the Philippines, the agricultural sector is still dominated by smallholders farming 1 ha or less (57%) and 1-3 ha (32%). These farmers have few opportunities to enhance their livelihoods due to small farm size, lack of knowledge regarding production, marketing, and ability to economically capitalize on one's work (Oakesshot, 2018).

Table 6: Frequency and Percentage Distribution of the Respondents' Farm Size

| Farm Size (in Hectares) | Frequency (f) | Percentage (%) |
|-------------------------|---------------|----------------|
| Less than 1 | 17 | 28 |
| 1 to 2 | 39 | 65 |
| 2 to 5 | 4 | 7 |
| Total | 60 | 100 |

Vegetables Primarily Grown

Table 7 shows that most the respondent grown chayote (58%) while, squash (53%) and cabbage (53%) and pechay (40%). According to Rivera (2022) cabbage was one of the major produced vegetable in the Philippines. In addition, chayote was one of the Filipino vegetables consumed by a lot of people every day (Primer Media Inc., 2017). The data implies the economic significance of cabbage and widespread consumption of chayote.

Table 7 : Frequency and Percentage Distribution of the Respondents' Vegetables Primarily Grown

| Vegetables | Frequency (f)* | Percentage (%) |
|--------------|----------------|----------------|
| Eggplant | 20 | 33 |
| Chayote | 35 | 58 |
| Squash | 32 | 53 |
| Pechay | 24 | 40 |
| Bellepepper | 16 | 27 |
| Bitter Gourd | 20 | 33 |
| Cabbage | 32 | 53 |
| Spring Onion | 17 | 28 |
| Tomato | 18 | 30 |
| Cucumber | 6 | 10 |
| Paria | 16 | 27 |

*Multiple responses

Organic Farming Practices

Table 8 shows that all (100%) of the respondents have been practicing organic farming practices. According to Gamage *et al.* (2023) Organic farming is the answer for arising problems on negative impact of conventional farming in human and environment for food agricultural production. It carries the principle of health, care, fairness and ecology.

Table 8 : Frequency and Percentage Distribution of the Respondents' Organic Farming Practices

| Organic Farming Practices | Frequency (f) | Percentage (%) |
|---------------------------|---------------|----------------|
| Yes | 60 | 100 |
| Total | 60 | 100 |
| Total | 60 | 100 |

Organic Farming Methods

Table 9 shows that most of the respondents utilized and/or practiced chicken manure (97%), crop rotation (90%) that primarily rotate between chayote, squash, cabbage and pechay as well as composting (43%).

According to Cherlinka (2025) crop rotation is one of the way to boost yields. It is applied by the growers to prevent soil erosion, control weeds and reduce pest and disease infestations. However, it results into greater soil fertility outcome. This indicates that this practices were effective, readily available and cost-effective for the small-scale farmers.

Years of Using Organic Farming Practices

Table 10 shows that more than one half (57%) of the respondents have been practicing organic farming for more than 5 years.

The data reveals that most of the farmers had been practicing organic farming practices for more than 5 years since at the

Table 9 : Frequency and Percentage Distribution of the Respondents' Organic Farming Methods

| Organic Farming Methods | Frequency (f) | Percentage (%) |
|-------------------------|---------------|----------------|
| Composting | 26 | 43 |
| Green Manure | 3 | 5 |
| Chicken Manure | 58 | 97 |
| Crop Rotation | 54 | 90 |
| Natural Pest Control | 9 | 15 |
| Cover crops | 13 | 22 |
| Seed saving | 4 | 7 |
| Intercropping | 11 | 18 |

*Multiple responses

beginning of farming which indicate that they are really dedicated to sustainable farming and aware on the negative effects of chemicals.

Sources of Learning about Organic Farming Practices

Table 11 shows that two thirds (67%) of the respondents learned organic farming from fellow farmers.

Most of the farmers received information from their fellow

Table 10 : Frequency and Percentage Distribution of the Respondents' Years of Using Organic Farming Practices

| Years of Using Organic Farming Practices | Frequency (f) | Percentage (%) |
|--|---------------|----------------|
| Less than 1 year | 7 | 12 |
| 1 to 2 years | 5 | 8 |
| 2 to 5 years | 14 | 23 |
| More than 5 years | 34 | 57 |
| Total | 60 | 100 |

farmers. Specifically, from their Friends and/or relatives as well as in the opinion leaders in particular because they can easily reach due to their availability, reliability and trusted at the time of they need (Sarker *et al.*, 2007). This implies that farmers learned from each other by sharing knowledge.

Motivation in Adopting Organic Farming Practices

Table 12 shows that two fifth (40%) of the respondents' motivation in engaging about organic farming practices are due to health benefits, while one third (33%) of the respondents' motivations are due to concerns in the environment.

Table 11 : Frequency and Percentage Distribution of the Respondents' Sources of Learning in Adopting Organic Farming Practices

| Sources of Learning | Frequency (f) | Percentage (%) |
|--|---------------|----------------|
| Training from government agricultural office | 3 | 5 |
| Fellow Farmers | 40 | 67 |
| Own experience/self-taught | 17 | 28 |
| Total | 60 | 100 |

According to Asmita Organic Farm (2023) in India, they convert into organic farming practices to protect the environment as well as health individual in their society. This implies that farmer top priority are concerns for health and environment.

How Farmers Adjust on Using Organic Farming Practices

Table 13 shows that farmers strongly agree on implementing crop rotation (AWM=4.57) which indicate the rank 1. Second

Table 12 : Frequency and Percentage Distribution of the Respondents' Motivation in Adopting Organic Farming Practices

| Motivation | Frequency (f) | Percentage (%) |
|------------------------|---------------|----------------|
| Health Benefits | 24 | 40 |
| Economic Benefits | 15 | 25 |
| Environmental Concerns | 20 | 33 |
| Good Quality | 1 | 2 |
| Total | 60 | 100 |

ranked practice, they agree on regularly analyzing soil to understand its nutrient content (AWM=4.22). Third-ranked practice, agree on timing fertilizer applications to coincide with critical crop growth stages (AWM=4.12). Fourth-ranked practice, agree on managing composting processes to create high-quality organic fertilizer with consistent nutrient content (AWM=4.02). Fifth-ranked practice, agree on applying larger quantities of organic of organic matter due to slower release of nutrients (AWM=3.95). Sixth-ranked practices, agree on utilizing a variety of organic materials (AWM=3.82). Lastly, agree on adjusting irrigation schedules based on the type of organic fertilizer used (AWM=3.73).

The overall average weighted mean 3.94 which means agree on the adjustments recognized by the farmers for widespread adoption of organic farming practices which verbally interpreted as highly perceived. According to Cherlinka (2025) crop rotation is one of the way to boost yields. It is applied by the growers to prevent soil erosion, control weeds and reduce pest and disease infestations. However, it results into greater soil fertility outcome.

Challenges in Adopting Organic Farming Practices

Table 14 shows that the respondents identified several significant challenges in adopting organic farming practices. They strongly agree on the lack of support from government

Table 13 : Average Weighted Mean, Adjectival Meaning, Verbal Interpretation, and Rank Analysis on the Respondents' Adjustment Made in using Organic Farming Practices

| Indicator | AWM | Adjectival Meaning | Verbal Interpretation | Rank |
|--|------|--------------------|-----------------------|------|
| Regularly analyzing soil to understand its nutrient content | 4.22 | Strongly Agree | Highly Adaptable | 2 |
| Applying larger quantities of organic matter due to slower release of nutrients | 3.95 | Agree | Adaptable | 5 |
| Timing fertilizer applications to coincide with critical crop growth stages | 4.12 | Agree | Adaptable | 3 |
| Utilizing a variety of organic materials | 3.82 | Agree | Adaptable | 6 |
| Managing composting processes to create high-quality organic fertilizer with consistent nutrient content | 4.02 | Agree | Adaptable | 4 |
| Implementing crop rotation practices | 4.57 | Strongly Agree | Highly Adaptable | |
| Utilizing cover crops | 3.08 | Undecided | Neutral | 1 |
| Adjusting irrigation schedules based on the type of organic fertilizer used | 3.73 | Agree | Adaptable | 8 |
| Over-all Average Weighted Mean | 3.94 | Agree | Adaptable | 7 |

Legend: 4.21-5.00=Strongly Agree (Highly Adaptable); 3.41-4.20=Agree (Adaptable); 2.61-3.40=Undecided (Neutral); 1.81-2.60=Disagree (Not Adaptable); 1.00-1.80=Strongly Disagree (Highly Not Adaptable)

of agricultural institution (AWM=4.63) which indicates the rank 1. Second-ranked was agree on lack technical knowledge (AWM=4.45). Third ranked was agree on challenges in pest and disease control (AWM=4.25). Fourth, agree on the nutrient composition of organic materials can vary depending on the source as well as organic fertilizers release nutrients more slowly than chemical fertilizers (AWM=4.15). Lastly, agree on high initial investment (AWM=3.42).

The overall average weighted mean 3.82 which reflects that these issues are broadly recognized as significant barriers to the adoption of organic farming practice. According to Oluwatoyin (2014) most of the farmers had limited access to extension

services from the government institutions that results in lack of awareness and knowledge regarding organic farming practices. This results negative attitudes of farmers towards adapting organic farming.

Status After Converting into Organic Farming Practices

Table 15 represents the higher ranked status which agree on improved soil health (AWM=4.35). Second, agree on improved quality of harvest (AWM=4.23). Third, agree on higher crop yields (3.97). Fourth, agree on increased income (AWM=3.85). Fifth, better access to markets (AWM=3.63).

The overall average weighted mean 3.49 which means agree

Table 14 : Average Weighted Mean, Adjectival Meaning, Verbal Interpretation, and Rank Analysis on the Respondents' Challenges in Adopting Organic Farming Practices

| Indicator | AWM | Adjectival Meaning | Rank |
|---|------|--------------------|------|
| Organic fertilizers release nutrients more slowly than chemical fertilizers | 4.15 | Agree | 4 |
| Nutrient composition of organic materials can vary depending on the source | 4.15 | Agree | 4 |
| Lack technical knowledge | 4.45 | Strongly Agree | 2 |
| High initial investment | 3.42 | Agree | 5 |
| Limited availability of organic resources | 3.27 | Undecided | 7 |
| Difficulty in accessing markets | 2.72 | Undecided | 8 |
| Challenges in pest and disease control | 4.25 | Strongly Agree | 3 |
| Lack of support from government of agricultural institution | 4.63 | Strongly Agree | 1 |
| High labor requirements | 3.37 | Undecided | 6 |
| Over-all Average Weighted Mean | 3.82 | Agree | |

Legend: 4.21-5.00=Strongly Agree; 3.41-4.20=Agree; 2.61-3.40=Undecided; 1.81-2.60=Disagree; 1.00-1.80=Strongly Disagree

on the farmer's status in converting into organic farming. According to the study of Canqui *et al.* (2023), organic farming improves soil health because it boosts the soils ability to hold water and allowed to move through the soil better. Additionally, Crop quality relies on the soil quality because fertile soils provides essential micro and macro nutrients needed by the soil. Moreover, Panday *et al.* (2024) organic inputs such as manure can significantly boost crop yield.

CONCLUSION

Based on the findings of the study, the following conclusion are drawn most of the vegetable farmers aged 26 to 35 years old identified as married with highest educational attainment of elementary and having a monthly income of less than 10,000 PhP. They have 1 to 2 hectares of farm sizes which have been grown chayote, squash, cabbage, and pechay. All of the vegetable farmers in Piagapo, Lanao del Sur practiced

Table 15 : Average Weighted Mean, Adjectival Meaning, Verbal Interpretation, and Rank Analysis on the Respondents' Status in Converting into Organic Farming Practices

| Indicator | AWM | Adjectival Meaning | Rank |
|--------------------------------|------|---------------------|------|
| Adequate technical support | 1.80 | Less Improved | 7 |
| Increased income | 3.85 | Highly Improved | 4 |
| Higher crop yields | 3.97 | Highly Improved | 3 |
| Improved soil health | 4.35 | Highly Improved | 1 |
| Efficiency of pest control | 2.65 | Moderately Improved | 6 |
| Improved quality of harvest | 4.23 | Highly Improved | 2 |
| Better access to markets | 3.63 | Highly Improved | 5 |
| Over-all Average Weighted Mean | 3.49 | Highly Perceived | |
| High labor requirements | 3.37 | Undecided | 6 |
| Over-all Average Weighted Mean | 3.82 | Agree | |

Legend: 4.21-5.00=Fully Improved; 3.41-4.20=Highly Improved; 2.61-3.40=Moderately Improved; 1.81-2.60=Less Improved; 1.00-1.80=Not Improved

organic farming such as chicken manure, crop rotation and composting. They have been practicing organic farming for more than five years until now as well as learned it from their fellow farmers passed by the older generation. Vegetable farmer motivation in adopting organic farming was due to health and environmental concern.

Vegetable farmers made significant adjustment in transitioning into organic farming such as implementing crop rotation, regularly analyzing soil to understand its nutrient content, timing fertilizer applications to coincide with critical crop growth stages, managing composting processes to create high-quality organic fertilizer with consistent nutrient content, applying larger quantities of organic matter due to slower release of nutrients, and using variety of organic materials as well as adjusting irrigation schedules based on the type of organic

fertilizer used.

Vegetable farmers faced highly significant challenges in transitioning into organic farming practices such as lack of support from the government institutions. Significant challenges they faced were lack technical knowledge, challenges in pest and disease control as well as nutrient composition of organic materials vary depending on the source.

Vegetable farmers identified significant status in transitioning into organic farming practices such as improved soil health, quality of harvest, crop yield, increased income, better access to market.

Acknowledgement

We would like to thank the Local Government Unit and the farmers of Piagapo, Lanao del Sur for their participation, the

officials of the Mindanao State University, the faculty members, staff members, and students of the College of Agriculture, especially the Department of Agricultural Education and Extension.

REFERENCES

- Adamchak, R. (2024, August 20). Organic Farming. In Encyclopedia Britannica. <https://www.britannica.com/topic/organic-farming>
- Adesope, O. M., Matthews-Njoku, E. C., Oguzor, N. S., & Ugwuja, V. C. (2012). Effect of socio-economic characteristics of farmers on their adoption of organic farming practices. *Crop production technologies*, 1, 210-220. <https://doi.org/10.5772/30712>
- Asmita Organic Farm (2023). Organic Farming Methods Redefined at Asmita Organic Farms. <https://asmitaorganicfarm.com/blogs/aof/organic-farming-methd-india>
- Blanco-Canqui, H., Ruis, S. J., & Francis, C. A. (2024). Do organic farming practices improve soil physical properties?. *Soil Use and Management*, 40(1), e12999. <https://doi.org/10.1111/sum.12999>
- Bouronikos, V. (2021, July 26). 4 Challenges of Organic Farming that you should Know. Institute of Entrepreneurship Development. <https://ied.eu/project-updates/4-challenges-of-organic-farming-that-you-should-know>
- Bouttes, M., Darnhofer, I. & Martin, G. Converting to organic farming as a way to enhance adaptive capacity. *Org. Agr.* 9, 235–247 (2019). <https://doi.org/10.1007/s13165-018-0225-y>
- Cheung, J. (2022, April 25). What is Organic Farming? Earth Retrieved from <https://kids.earth.org/climate-change/organic-farming/>
- Corkill, E. (2024, January 3). A guide to Organic Vegetable Farming: 10 Sustainable Practices and Benefits. HomeBiogas. <https://www.homebiogas.com/blog/sustainable-gardening/>
- Fatha, L., & Ayoubi, R. (2021, July 13). A revisit to the role of gender, age, subjective and objective knowledge in consumers' attitudes towards organic food. <https://www.tandfonline.com/doi/full/10.1080/0965254X.2021.1939405#abstract>
- Fernández, J. A., Ayastuy, M. E., Belladonna, D. P., Comezana, M. M., Contreras, J., de Maria Mourão, I., ... & Rodríguez, R. A. (2022). Current trends in organic vegetable crop production: practices and techniques. *Horticulturae*, 8(10), 893. <https://doi.org/10.3390/horticulturae8100893>
- Gamage, A., Gangahagedara, R., Gamage, J., Jayasinghe, N., Kodikara, N., Suraweera, P., & Merah, O. (2023). Role of organic farming for achieving sustainability in agriculture. *Farming System*, 1(1), 100005. <https://doi.org/10.1016/j.farsys.2023.10000>
- Genota, Q. (2022, January 5). Organic agriculture in the Philippines: What you need to know Climate Tracker Asia. <https://climatetracker.asia/organic-agriculture-in-the-philippines-what-you-need-to-know>
- Javier, J. D., & Sison, M. P. (2023). Recommendations towards Sustainable Farming Method For An Organic Vegetable Production in Bukidnon, Philippines. *Agricultural Socio-Economics Journal*, 23(2), 121-129. <https://doi.org/10.21776/ub.agrise.2023.023.2.1>
- Malkanathi, SHP. (2020). Farmers' attitude towards organic agriculture: A case of rural Sri Lanka. *Contemp. Agric.* 2020;69(1-2):12-19. <https://doi.org/10.2478/contagri-2020-0003>
- Mapcarta, com. (2023). Piagapo. <https://mapcarta.com/15733682>
- Mendoza, T., Montemayor, L., & Villegas, P. (2021). The Philippine Organic Agriculture in Transition from Chemical-based Farming. https://www.researchgate.net/publication/351304398_The_Philippine_Organic_Agriculture_in_Transition_from_Chemical-based_Farming#
- Oakeshott, J. A. (2018). Sustainable Smallholder Farming Clusters in the Philippines. *Acta Horticulturae* [1205], 109-116. <http://dx.doi.org/10.17660/ActaHortic.2016.1128.52>
- Oluwatoyin, O. (2014). *Vegetable farmers' attitude towards Organic Agriculture Practices in selected States of South West Nigeria*. 6(7)223-230. <http://dx.doi.org/10.5897/JAERD2013.0572>
- Organic Producers' Trade Association Philippines Inc./membership Directory. (2024). <https://directory.ifoam.bio/affiliates/734-organic-producers-trade-association-philippines-inc>
- Panday, D., Bhusal, N., Das, S., & Ghalehgalabbehbahani, A. (2024). Rooted in nature: the rise, challenges, and potential of organic farming and fertilizers in agroecosystems. *Sustainability*, 16(4), 1530. <https://doi.org/10.3390/su16041530>
- Peng, P. (2019). Chapter 1 – The Growing Market of Organic Foods: Impact on the US and Global Economy. Retrieved from <https://www.sciencedirect.com/science/article/abs/pii/B978012812060606000015>
- Primer Media Inc. (2017, July 4). A guide to vegetables in PH. Tips & Guides. <https://primer.com.ph/tips-guides/2017/07/04/a-guide-to-vegetables-in-ph/>
- Pradhan, A., & Sriyaya, M. (2024). Fresh Fruits and Vegetables Quality and Safety: *A Deep Insight on the Benefits of an Organic Farming Approach*. Pp 129-139. Retrieved from https://link.springer.com/chapter/10.1007/978-3-031-51647-4_11
- Rakuten, S. (2024). Organic Farming in Philippines. Retrieved from: <https://tracextech.com/organic-farming-in-Philippines/>
- Rivera, D. (2022, December 7). Most major vegetables grow Q3 production. Philstar.com. <https://www.philstar.com/business/2022/12/08/2229250/most-major-vegetables-grow-q3-production>
- Sarker, A., & Itohara, Y. (2007). Information sources used by the farmers regarding practice of organic farming a study from Bangladesh. *Journal of Rural Problems*, 43(1), 234-239. <https://doi.org/10.7310/>

- arfe1965.43.234
- Seufert, V., & Ramankutty, N. (2017). Many shades of gray—The context-dependent performance of organic agriculture. *Science Advances*, 3(3), e1602638. <https://doi.org/10.1126/sciadv.1602638>
- Sikudhani, Y. (2020). Impacts of Seminars and Short Courses to Knowledge Enhancement among Farmers: Case Study of Agricultural Training. https://www.academia.edu/24717458/Impacts_of_Seminars_and_Short_Courses_to_Knowledge_Enhancement_among-Farmers.
- Singh, S.A, Mishra, N., Yadav, P.K., & Singh, S.S. (2025). Socioeconomic profile and attitudinal analysis of farmers towards organic farming. *International Journal of Agriculture Extension and Social Development*, 8(2), 193-196. <https://doi.org/10.33545/26180723.2025.V8.12C./1646>
- Sohail, S., Gondal, A. H., Farooq, Q., Tayyaba, L., Zainab, D. E., Ahmad, I. A., ... & Usama, M. (2021). Organic vegetable farming; a valuable way to ensure sustainability and profitability. In Vegetable crops-health benefits and cultivation. IntechOpen. <http://dx.doi.org/10.5772/intechopen.101095>
- Soni, R., Gupta, R., Agarwal, P., & Mishra, R. (2022). Organic farming: A sustainable agricultural practice. *Vantage: Journal of Thematic Analysis*, 3(1), 21-44. <https://doi.org/10.52253/vjta.2022.v03i01.03>
- Varanasi, A. (2019, October 21)). Is organic food really better for the environment? State of the Planet. <https://news.climate.columbia.edu/2019/10/22/organic-food-better-environment>.
- Wang, S., Feng, P., Batchelor, W.D. *et al.* Organic farming decreases nitrate leaching but increases dissolved organic nitrogen leaching in greenhouse vegetable production systems. *Plant Soil* 498, 111–124 (2024). <https://doi.org/10.1007/s11104-022-05832->
- World Bank. (2021). Realizing Scale in Smallholder-Based Agriculture: Policy Options for the Philippines. <https://hdl.handle.net/10986/35982>