

CONSTRAINTS MANAGEMENT OF ORGANIC FARMING: EVIDENCE FROM POKHARA METROPOLITAN, NEPAL

**SANTOSH CHAPAGAIN &
SUNIL DHAKAL**

*MBA Graduate, School of Business,
Pokhara University, Pokhara, Nepal*

*Email: kabeesantu@gmail.com
sunildhakal1122@gmail.com*

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ABSTRACT

Organic agriculture has become an important concept within the Nepali agricultural sector, particularly in the hills and mountainous regions where traditional farming practices closely resemble organic methods. This study aims to identify the challenges faced by organic farmers in Pokhara, focusing on the availability of organic inputs, pest management, and market linkages. Data was collected through surveys, field observations, and interactions with 197 farmers, using structured questionnaires. A descriptive research design has been used to assess the challenges faced by organic farmers in Pokhara, Nepal. The study focused on issues such as access to organic inputs, pest management, and market linkages, with data analyzed using descriptive and inferential statistics (One-way ANOVA, T-tests) and reliability

tested through Cronbach's alpha. SPSS software was used for data analysis, ensuring a comprehensive and reliable examination of the constraints affecting organic farming practices in the region. This study examined the key constraints faced by organic farmers in Pokhara, focusing on access to organic inputs, pest and disease management, and market linkages. Results indicated that better access to organic inputs positively impacted farming practices and pest control, while market linkages were less influential on success. Result shows significant challenges in input availability, pest management, and market access, with gender differences showing slightly better outcomes for female farmers. The study highlights the need for improved government support, better pest management strategies, and enhanced market access to foster the growth of organic farming in Pokhara.

1. INTRODUCTION

The organic agriculture is a very common word in Nepali agriculture sector. Over a century, traditionally farmers in hills and mountains are following the farming practice, which is similar to organic farming (Tamang et. al., 2011). However, many of them have no idea that their traditional practice is called organic agriculture. Because of the lengthy certification process the products produced through organic means do not get recognition as organic products. The traditional farming knowledge and skill give the positive point for promoting the organic agriculture in Nepal.

Organic farming in Nepal faces significant challenges despite its potential for environmental and economic benefits. The development of organic agriculture is slow due to a lack of clear governmental vision, limited awareness, and migration of youth away from farming (Acharya et al., 2020). In Pokhara, organic farming is practiced in small pockets, but commercial viability is limited due to fragmented efforts and a lack of collective commitment (Adhikari, 2017). The widespread use of agro-chemicals and poor infrastructure further complicates the transition to sustainable farming (Pant, 2006).

Organic farming is also referred to as ecological or bio-dynamic agriculture, is an agricultural system focused on restoring and maintaining soil health through biodiversity, biological cycles, and soil biological activity (Lieberhardt, 2003). The goal is to reduce reliance on off-farm inputs by adopting practices that enhance ecological harmony, such as crop rotations, intercropping, and the use of organic fertilizers (Banjara & Poudel, 2017). According to Biernbaum (2003) the essence of organic farming lies in feeding the soil for long-term health rather than just feeding the plants with synthetic fertilizers, which, if overused, can degrade soil quality. The practice has been growing globally, especially in Asia, where countries like China and India lead in organic production, though challenges such as inadequate certification processes and policies remain (Lieberhardt, 2003). In Nepal, organic farming is gaining traction, particularly in mountainous regions where farmers have not traditionally used chemicals. However, the transition to organic farming faces significant barriers, including a lack of adequate government support, insufficient research, and inadequate certification infrastructure (Pokhrel & Pant, 2009).

In Pokhara, organic farming has the potential to contribute significantly to both environmental sustainability and the local economy. Farmers in areas like Bhadaure Tamagi VDC have adopted organic practices, producing vegetables and earning substantial income. These practices are not only financially beneficial but also environmentally sustainable, as they contribute to reducing pollution in the nearby Fewa Lake (Adhikari, 2017). However, the widespread adoption of organic farming in Nepal faces several challenges. One of the most pressing issues is the increasing cost of external inputs, particularly chemical fertilizers and hybrid seeds, which are not only harmful to the environment but also increase farmers' dependence on foreign markets. Furthermore, the lack of professional knowledge dissemination and adequate infrastructure hampers the growth of organic farming, making it difficult for small-scale farmers to transition successfully (Banjara & Poudel, 2017).

Despite the rising demand for organic products, organic farmers in Pokhara face multiple challenges that hinder their adoption of sustainable practices. One major constraint is the uncertainty in market management, with issues such as fluctuating

prices, limited employment opportunities, and difficulties in accessing consistent market channels (Adhikari, 2017). These market issues make it difficult for farmers to secure a reliable income from organic farming, which discourages investment in the long-term sustainability of organic practices. Another significant barrier is the difficulty in accessing quality organic inputs, such as bio-pesticides, fertilizers, and seeds. These inputs are often scarce, especially in remote areas, and the cost of organic alternatives is typically higher than that of conventional options, further discouraging adoption (Pokhrel & Pant, 2009). Moreover, the lack of professional support and training in organic farming methods prevents farmers from fully capitalizing on organic farming's benefits.

The viability of organic farming in Pokhara is also constrained by limited investment and access to financing. Farmers face difficulties in obtaining loans or subsidies for transitioning to organic farming due to the high perceived risks and the lack of targeted government policies (Bhandari, 2024). Organic farming requires upfront investments in infrastructure, such as storage facilities, composting systems, and pest management tools, but without adequate financing options, these ventures often struggle to grow or even sustain themselves (Banjara & Poudel, 2017). In addition, the absence of financial mechanisms that specifically support organic farming practices makes it difficult for farmers to overcome initial financial hurdles and invest in sustainable farming technologies. This issue is compounded by a lack of government vision and the slow development of policies tailored to the needs of organic farmers (Pokhrel & Pant, 2009). Farmer cooperatives could help overcome market and resource-sharing challenges, promoting the long-term sustainability of organic farming (Banjara and Poudel, 2017). Furthermore, the government and non-governmental organizations should mobilize resources to support organic agriculture, focusing on risk mitigation, financing, and the adoption of sustainable practices to ensure the viability of organic farming in Pokhara and other regions of Nepal.

Based on the above literature, there is numbers of issues in organic farming in context of Pokhara. Such issues are government support in mobilizing resources, heavily use of chemical fertilizer and pesticides, lack of inputs, lack of awareness in farmers related to organic farming as well as pest and disease management. In order to address these

research gaps, this study is focused on feasible solutions for resolving these issues and promoting the expansion of organic farming in Pokhara and other comparable agricultural environments which is highly relevant and required in the context of Pokhara. This study aims to assess the constraints faced by organic farmers in Pokhara, with a focus on three key areas: the availability and affordability of organic inputs, pest and disease management, and market linkages for organic products. By identifying these barriers, the research will help inform policy recommendations that could improve the prospects for organic farming in the region. Specifically, the study will examine how the lack of access to reliable organic inputs, difficulties in managing pests without synthetic chemicals, and weak market linkages hinder the growth of organic farming. Furthermore, the study will explore the role of government policies in supporting organic farming and propose solutions to streamline certification processes, improve extension services, and ensure the financial sustainability of organic farming ventures. Addressing these constraints could significantly enhance the adoption of organic farming practices in Pokhara, contributing to both the local economy and environmental sustainability.

2. LITERATURE REVIEW

Organic farming is a movement that avoids synthetic fertilizers, pesticides, growth regulators, and livestock feed additives, as well as genetically modified crops (Funtilana, 1990). Banjara and Poudel (2017) mentioned that, organic agriculture is crucial for health and the environment, with over 90% of respondents satisfied with the income generated from organic products. This income can be used for child education, health facilities, and house renovations. Sustainability in organic agriculture in Nepal is high due to the similarity of conventional farming practices and the presence of family and small-scale farming practices. Family farming preserves traditional food products, contributes to a balanced diet, and safeguards agro-biodiversity.

Maintaining a live soil with a diversified population of micro and macro soil organisms is the foundation of organic farming and gardening (Biernbaum, 2003). "Feeding the

soil, not the plant” is a popular expression that will be thoroughly discussed to describe organic gardening. By adding compost, animal dung, and green manures to the soil and avoiding excessive tillage and nitrogen applications, organic matter is preserved. Growing crops devoid of synthetic fertilizers and pesticides is another characteristic of organic agriculture.

Organic farming offers four main economic benefits: reduced use of external inputs, more effective use of biological and genetic potential, sustainable production levels, profitable and efficient production, and increased resistance to diseases and insect pests (Dey et al., 2021).

The Nepal government has prioritized agriculture for poverty alleviation and economic development but has primarily supported conventional farming. Organic farming holds potential due to its cost-effectiveness, ecological diversity, and higher labor availability. It also addresses climate change, food insecurity, and negative impacts of conventional farming in areas with high chemical use. Despite government policies, inadequate research, extension, manpower, and support for organic farming production, marketing, and input supply have hindered its development. The government is now recognizing the importance of organic farming and developing consistent policies to support its growth (Singh & Maharjan, 2017).

Agricultural Practices and Techniques

There is no chemical fertilizer factory in Nepal which justifies the major concern to promote organic agriculture in Nepal. Different organic sources for supplying essential nutrient's (Animal wastes, vermi compost, compost, green manures, bone and fish meal, bio fertilizers different aerobic and anaerobic nitrogen-fixing organisms.) are available in different parts of Nepal for enhancing soil fertility. Organic manures, though having less nutrient concentration, contains many of the essential nutrients for plant growth and releases them slowly for a longer period (Pokhrel & Pant, 2009)fertilizers and other agro-chemicals use to meet growing peoples' demands for food. Indiscriminate use of

agrochemicals has however resulted in several problems such as pests' resistance to pesticides and resurgence due to elimination of natural enemies, toxic residues in food, water, air and soil, degrading soil environment and ecosystem, animal and human health hazards and ultimate economic losses. Realizing the facts, organic farming is becoming popular recently, and there have been growing concerns on its importance and promotion in number of countries irrespective of their stage of development. Consequently, farming system paradigms have now shifted from mere increased production and productivity to resource sustainability and eco-friendly production techniques in their emphasis.”,”container-title”:”Journal of Agriculture and Environment”,”DOI”:”10.3126/aej.v10i0.2135”,”ISSN”:”2091-1009”,”journalAbbreviation”:”J. Agric. & Environ.”,”language”:”en”,”page”:”103-115”,”source”:”DOI.org (Crossref. Organic farming capable of sustaining higher crop productivity and improving soil quality. Various local innovations are available in our local farming communities which can be continued as a new technology for promoting organic farming (Acharya et al., 2020).

Growth of organic agriculture requires producers' and consumers' awareness, availability of sound infrastructures and consumers' willingness to pay for the organic products. Nepal, being a developing country, definitely majority of the consumers is not well off. However, a large chunk of consumers are clustered in and around urban areas of the country and they could pay for the organic products provided quality is assured. Market potentials are mainly determined by consumer expectations of the product attributes, which are attached to the product such as quality, price, certification, quality also consumers awareness of health, food safety, environmental, and technology issues related to food products as well as the industrialization of agriculture and globalization, have been identified as diversification factors of food consumption. There is a need to explore the broader perspectives of organic farming from both the producer's and the consumer's viewpoints (Ramesh et al, 2005).

Agriculture is one of the major contributing sectors in the Nepalese economy that shares 36% in the GDP at 1984/85 constant price and provides employments to two- third of the economically active population (MOAC, 2006). Through previous development plans, the

government has made notable efforts to boost agricultural production and productivity (NPC, 2007). Nepalese agriculture is predominantly characterized by traditional knowledge-based subsistence type with low productivity. The agricultural systems in the mountain comprise two-thirds of the nation's geographical area and largely integrate crops livestock to traditional knowledge and locally available resources. With very low productivity, the systems are largely organic by default for maintaining soil fertility and production. Most of the farmers in the high mountains and the majority in the middle mountain do not use chemical inputs in their farming. The use of agro- chemicals such as fertilizers and pesticides is becoming important only to the commercial agriculture pockets recently being developed in accessible areas. With introduction of improved agronomic and composting practices, bio- fertilizers and bio-pesticides, there is greater possibility of converting the systems to organic types with little effort. Farmers are producing crops in combination of both indigenous and conventional knowledge system. Organic farming with low productivity is adopted in a few areas (Pant, 2006).

Dimensions of Organic Farming

The study by Burton et al. (1999) on UK horticultural producers found that organic adoption is more likely among young, small, female-led businesses, highlighting non-economic factors often missed in profitability comparisons. In Nepal, commercial farming's heavy pesticide and fertilizer use has raised environmental and health concerns, prompting sustainable alternatives (Pokhrel & Pant, 2009). India's organic resources (crop residues, dung) show potential for soil fertility and productivity (Ramanjaneyulu et al., 2017). Organic farming relies on organic inputs and pest management practices like vermi-compost and botanical extracts, though some products lack scientific validation (Charyulu, 2010).

Additionally, the increasing use of fertilizers and pesticides undermines organic practices, especially in vegetable farming, with pesticide consumption higher than the global average (Acharya et al., 2020). Policy entry, market positioning, and mainstreaming organic products are current challenges (Haldhar et al., 2017). DNA technologies enhance crop protection

but face dissemination challenges among resource-poor farmers (Cambridge University Press, 2010). The organic market, driven by consumer awareness and certification needs, affects production and consumption dynamics (Dias et al., 2015). A relational approach between producers and consumers aids holistic organic consumption (Lockie et al., 2002).

Environmental benefits of organic farming include reduced pesticides, erosion, nutrient pollution, and fossil fuel use (Lotter, 2003). Growing health and environmental consciousness drive organic markets, though regulatory support remains limited (Siderer et al., 2005). Nepal's organic sector faces certification challenges, with rural areas struggling to meet standards, and urban migration affecting farmer retention (Bello, 2008; Acharya et al., 2020). Despite slow development, initiatives like LI-BIRD's work in Jumla demonstrate organic farming's potential (Bello, 2008). Organic farming prioritizes long-term ecological benefits and reduced synthetic input reliance (Trewavas, 2001).

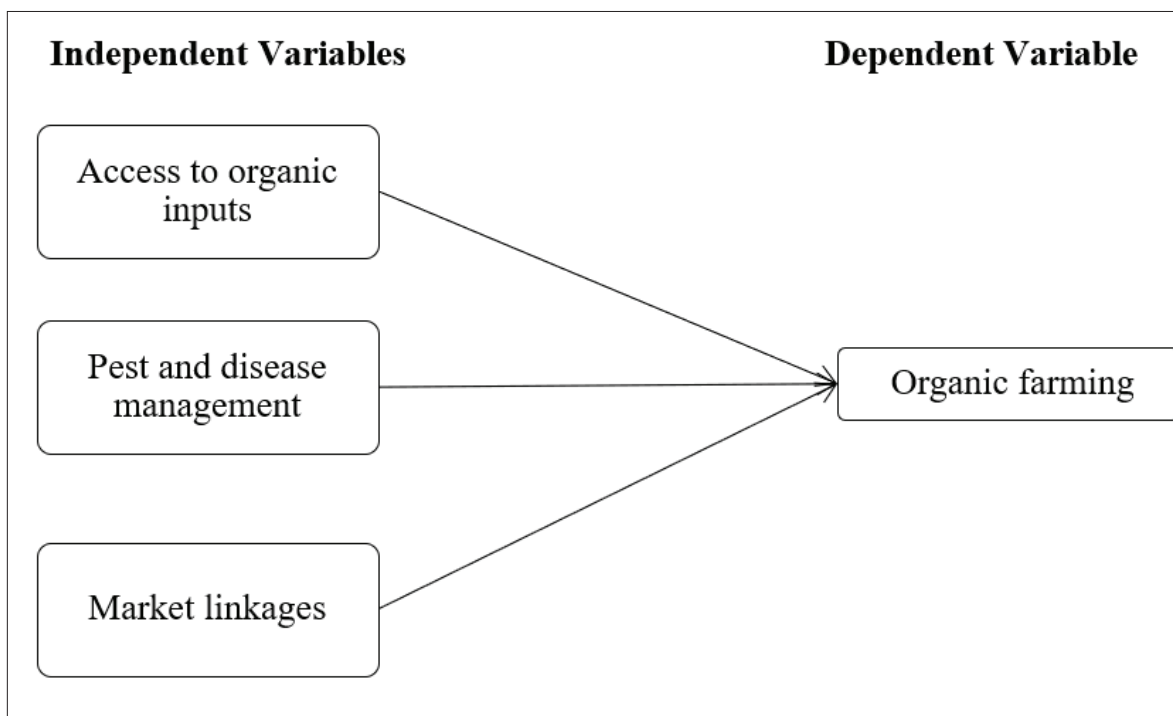
Conceptual Framework

Organic farming in Nepal is a complex process that requires farmers to prove no prohibited substances have been used on their farm for at least three years to reduce contamination risk. They must also maintain buffer zones between their farmland and potential sources of water, chemicals, or genetic drift. However, there is a lack of organic certification and certifying agencies, which can hinder the export market of organic products. Organic crop yields are 25-50% lower than conventional ones due to lower nutrient availability, poorer weed control, and limited soil nutrient status improvement. The Nepal government has provided subsidies in chemical fertilizers to help farmers access cheaper organic sources. Organic crop protection strategies are costly and time-consuming, and organic residues contain lower nutrients. Transporting organic food products is a major challenge, as companies must use two different machines for each production step. Marketing problems arise, and the market for organic products is not well developed in Nepal (Acharya et al., 2020).

Organic farming in Nepal has grown steadily in recent years, as more farmers have recognized the benefits of organic farming practices for their health, the environment, and their incomes. However, challenges remain, including access to markets and the high cost of organic inputs such as natural fertilizers and pesticides. Nevertheless, with continued support and investment, organic farming in Nepal has the potential to play an important role in improving the livelihoods of small-scale farmers and contributing to the sustainable development of the country.

The framework's primary goal is the development of dependent and independent variables or factors. There are some variables considered for study purposes. Those variables are: access to organic input, pest and disease management, and market linkages.

Fig 2.1: Conceptual Framework for Constraints of Organic Farming



3. METHODOLOGY

This study adopted a quantitative, descriptive research design to assess the challenges faced by organic farmers in Pokhara, Nepal, with a focus on their awareness and constraints related to organic farming practices. Data were gathered through surveys, field observations, and direct interactions with farmers, ensuring the authenticity and relevance of the information. A structured questionnaire, in Nepali and English language designed with the help of subject matter experts, was used to collect data on key variables such as access to organic inputs, pest and disease management, and market linkages. A 5-point Likert scale was employed to capture participants' agreement with various statements related to these issues. To ensure data validity, the study adhered to ethical guidelines, including informed consent and confidentiality. Additionally, a convenience sampling technique was used, resulting in 197 participants from different areas of Pokhara, offering a comprehensive perspective on the organic farming community.

The sample consisted of farmers engaged in organic farming within the Pokhara metropolitan area, selected using convenience sampling. The total population was drawn from the 2024 registered farmers in Pokhara, as reported in the 2079–2080, Annual Agricultural Report. Data collection began with initial interactions with farmers at the Provincial Agro Mart in Prithvichok and later expanded to visits to agro cooperatives and various farming establishments in the region. This approach enabled the study to capture a diverse set of perspectives, ensuring a broad representation of the farming community. The data collected through these methods formed the basis for a thorough analysis of the constraints farmers face in adopting and maintaining organic farming practices.

To analyze the data, the study utilized descriptive and inferential statistical methods. Descriptive statistics helped identify patterns in demographic factors such as age, education, and farm size, while inferential statistics, including One-way ANOVA and independent samples T-tests, were employed to explore differences in constraints based on these variables. The reliability of the survey instrument was confirmed using Cronbach's alpha, yielding values of 0.873 for access to organic inputs, 0.454 for pest and disease

management, and 0.722 for market linkage, all indicating good to excellent internal consistency. Correlation analysis and regression models were also used to examine the relationships between the key variables and the impact of constraints on organic farming practices in Pokhara Using SPSS software (IBM). The study's methodology ensures a comprehensive and reliable analysis of the challenges faced by local farmers.

4. RESULTS AND DISCUSSION

This study aims to assess the unique obstacles faced by organic farmers in Nepal's Pokhara Valley with regard to the adoption and application of organic agricultural practices. The purpose of the study was to investigate the main barriers, ascertain their effects, and provide light on the underlying causes that impede the growth and effectiveness of organic farming in the designated area. The study aims to gain a full understanding of the obstacles experienced by organic farmers in adopting and implementing sustainable agricultural practices. It is carried out in the Pokhara Valley, with a sample size of 197 respondents. Questionnaires will be sent as part of the selected research approach, and online and in-person interactions were used to collect data. Among them all the respondents replied to the questionnaire and the independent t- tests were used to analyze, there is a statistically significant difference between the means in two unrelated groups.

Types of Statistical Test(s) Performed

This section presents the results of statistical analyses on data, highlighting their reliability in identifying relationships, trends, and dependencies. These analyses provide objective inferences and correlations between variables, providing insights into the dynamics of the factors under study. The narrative provides a comprehensive and evidence-based understanding of the study's findings.

Correlation Analysis

Table 1 presents the correlations among the factors related to organic constraints: Organic Farming, Access to Organic Inputs (AOI), Pest and Disease Management (PDM), and Market Linkage (ML). Correlation coefficients reflect the strength and direction of the relationships between these variables.

Table 1: Examining Relationships among factors of Organic Constraints

	Organic Farming	AOI	PDM	ML
Organic Farming	1			
AOI	.588**	1		
PDM	.490**	.765**	1	
ML	0.044	.260**	.504**	1

** Correlation is significant at the 0.01 level (2-tailed).

Where, AOI= Access to Organic Inputs, PDM= Pest and Disease Management, ML= Market Linkage

The correlation between Organic Farming and AOI is moderate and positive ($r = .588$, $p < .01$), indicating that as the use of organic farming increases, access to organic inputs tends to increase as well. There is a strong positive and significant correlation between AOI and PDM ($r = .765$, $p < .01$), suggesting that higher access to organic inputs is associated with better pest and disease management practices. Additionally, PDM and ML have a moderate positive correlation ($r = .504$, $p < .01$), implying that improved pest and disease management is related to better market linkages.

In contrast, the correlation between Organic Farming and ML is very weak ($r = .044$, $p > .01$), indicating no significant relationship between these two variables.

Multiple Regression Analysis

Table 2 presents the results of a multiple regression analysis examining the constraints of organic farming, with Organic Farming as the dependent variable and Access to Organic Inputs (AOI), Pest and Disease Management (PDM), and Market Linkage (ML) as independent variables.

The regression model shows that the constant term ($B = 0.761$, $p = 0.002$) is statistically significant, indicating a positive baseline value for organic farming when all predictors are held constant.

Among the predictors, AOI has a positive and significant effect on organic farming ($B = 0.311$, $p < 0.001$), with a standardized coefficient ($Beta = 0.460$). This suggests that as access to organic inputs increases, organic farming is positively affected, with a relatively strong impact compared to other variables. PDM also has a positive and significant effect ($B = 0.229$, $p = 0.021$, $Beta = 0.236$), indicating that better pest and disease management practices contribute positively to organic farming, though with a weaker impact than AOI.

Table 2: Constraints of Organic Farming: Output of Multiple Regression Model

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.761	0.243		3.135	0.002
	AOI	0.311	0.061	0.460	5.082	0.000
	PDM	0.229	0.098	0.236	2.334	0.021
	ML	-0.207	0.072	-0.195	-2.886	0.004

Dependent Variable: Organic Farming

Where, AOI= Access to Organic Inputs, PDM= Pest and Disease Management, ML= Market Linkage

In contrast, ML has a negative and significant effect on organic farming ($B = -0.207$, $p = 0.004$, $Beta = -0.195$), implying that greater market linkage is associated with a decrease in organic farming practices. This suggests a potential inverse relationship, where stronger market linkage may present constraints or challenges to the adoption or growth of organic farming.

All predictors, AOI, PDM, and ML, are statistically significant at the 0.05 level or lower, indicating that they are important factors influencing organic farming.

Finally, The Multiple regression line explained as:

$$\text{Organic Farming} = 0.761 + 0.311(\text{AOI}) + 0.229(\text{PDM}) - 0.207(\text{ML}) + \dots + e^t$$

Where,

AOI= Access to Organic Inputs,

PDM= Pest and Disease Management,

ML= Market Linkage

e^t = Error term

Since, the variables Access to organic Inputs, Pest & Disease Management and Market Linkage were positively correlated at 5% with Organic Farming. Thus, the study is highly justifiable for further study with focusing on constraint management of organic farming.

Descriptive Analysis

The study takes into account several demographic data, including the respondents' gender, age group, and their experience status. These demographic factors influence their expectation and their preference over organic farming system. The relationship between background and demographic characteristics and dependent and independent variables was examined using the frequency and percentage approach.

Analysis of Respondent's Profile

Table 3 provides the demographic information of the sample (n = 197). Regarding age, 41.1% of the participants were younger than 35 years (n = 81), while 58.9% were older than 35 years (n = 116), indicating a higher proportion of older participants in the sample.

Table 3: Demographic Information

Details (n=129)	Frequency (n=129)	Percentage (%)
Age		
Less than 35	81	41.1
More than 35	116	58.9
Gender		
Male	132	67.0
Female	64	32.5
Experiences		
Less than 5 years	87	44.2
More than 5 years	110	55.8

In terms of gender, the sample was predominantly male, with 67.0% of participants identifying as male (n = 132). The remaining 32.5% of the participants were female (n = 64), suggesting a notable gender imbalance in the sample.

Finally, in terms of experience, 44.2% of participants had less than 5 years of experience in organic farming (n = 87), while 55.8% had more than 5 years of experience (n = 110). This indicates that a majority of respondents had relatively more experience in the field of organic farming.

Analysis of Independent and Dependent Variables

As previously noted, each of these sections is made up of Likert-scale questions (ranging each variable from 5 to 1 responding to strongly agree and strongly disagree respectively). The interpretation of these questions is based on the formulation below (Guvén, n.d.);

$$\begin{aligned} \text{The width of each level} &= \frac{\text{Highest score} - \text{Lowest score}}{\text{The number of level}} \\ &= \frac{5-1}{5} \\ &= 0.8 \end{aligned}$$

The result shows that,

The average of 1.00-1.79 means a very low level of agreement.

The average of 1.80-2.59 means a low level of agreement.

The average of 2.60-3.39 means a moderate level of agreement.

The average of 3.40-4.19 means a high level of agreement.

The average of 4.20-5.00 means a very high level of agreement.

Access of Organic Inputs

Table 4 presents the mean values and standard deviations for various statements related to Access to Organic Inputs, along with their corresponding interpretations based on a five-point scale. The majority of statements received low levels of agreement, indicating that respondents generally perceive challenges in accessing organic inputs. For instance, statements like "The availability of organic fertilizers is sufficient" (mean = 1.90, Std. Dev. = 1.25), "Organic inputs like compost and manure are affordable" (mean = 2.02, Std. Dev. = 1.18), and "There is a variety of organic inputs accessible to farmers" (mean = 1.85, Std. Dev. = 1.18) all received mean scores in the low range, reflecting concerns about the

limited availability and affordability of organic inputs. Similarly, “Organic inputs are easily obtainable in my locality” (mean = 1.93, Std. Dev. = 1.18) and “The quality of organic inputs in the market is consistent” (mean = 1.58, Std. Dev. = 1.03) also scored low, highlighting issues with both access and consistency in the quality of inputs.

Table 4: Mean Value of Access of Organic Inputs

Statements	Mean	Std. Deviation	Mean Interpretation
The availability of organic fertilizers is sufficient.	1.90	1.25	Low
Organic inputs like compost and manure are affordable.	2.02	1.18	Low
There is a variety of organic inputs accessible to farmers.	1.85	1.18	Low
Organic inputs are easily obtainable in my locality.	1.93	1.18	Low
The quality of organic inputs in the market is consistent.	1.58	1.03	Low
Availability of organic seeds is a major concern.	4.63	0.79	Very High
The cost of organic pesticides is reasonable.	1.87	1.04	Low
There is a lack of information on suitable organic inputs.	4.41	0.95	High Level
The organic input supply chain is reliable.	2.13	0.90	Low
The government supports farmers in obtaining organic inputs.	1.86	1.12	Low

However, two statements stood out with much higher scores. “Availability of organic seeds is a major concern” (mean = 4.63, Std. Dev. = 0.79) received a very high level of agreement, signaling that respondents strongly agree that the availability of organic seeds is a significant problem. Similarly, “There is a lack of information on suitable organic inputs” (mean = 4.41, Std. Dev. = 0.95) was rated with a high level of agreement, indicating that a lack of information about appropriate organic inputs is a major concern for farmers.

Other statements, such as “The cost of organic pesticides is reasonable” (mean = 1.87, Std. Dev. = 1.04) and “The government supports farmers in obtaining organic inputs” (mean = 1.86, Std. Dev. = 1.12), also received low mean scores, reflecting dissatisfaction with the affordability of organic pesticides and the perceived lack of governmental support in facilitating access to organic inputs. Lastly, “The organic input supply chain is reliable” (mean = 2.13, Std. Dev. = 0.90) also showed a low level of agreement, suggesting concerns about the reliability of the supply chain. Overall, the findings suggest that while there are notable concerns about the availability and affordability of organic inputs, issues related to seed availability and the lack of information on suitable inputs are particularly significant for farmers.

Pest and Disease Management

Table 5 presents the results of various statements related to Pest and Disease Management, with their corresponding mean values, standard deviations, and interpretation of the level of agreement based on the mean scores. Many of the statements received low to moderate levels of agreement, reflecting a range of challenges faced by farmers in managing pests and diseases organically. For example, statements like “Organic pest control methods are effective” (mean = 1.84, Std. Dev. = 1.14) and “The cost of organic pest control is justifiable” (mean = 2.09, Std. Dev. = 0.88) received low scores, indicating that respondents are not convinced that organic pest control methods are effective or

cost-effective. Similarly, “Adequate information is available for pest management” (mean = 2.14, Std. Dev. = 0.90) also had a low level of agreement, suggesting that farmers feel there is insufficient information available to manage pests effectively.

Table 5: Mean Value of Pest and Disease Management

Statements	Mean	Std. Deviation	Mean Interpretation
Organic pest control methods are effective.	1.84	1.14	Low
The cost of organic pest control is justifiable.	2.09	0.88	Low
Adequate information is available for pest management.	2.14	0.90	Low
The frequency of pest outbreaks is a significant issue.	3.65	1.37	High
Farmers face challenges in identifying plant diseases.	4.57	0.74	Very High
Training programs on organic pest control are helpful.	3.52	1.46	High
Organic pest control measures are time-consuming.	3.00	1.66	Moderate
There is a lack of access to organic pest control tools.	4.47	0.91	Very High
The government supports organic pest management.	3.26	1.54	Moderate
Peer knowledge sharing on pest control is inadequate.	2.58	1.45	Moderate

On the other hand, some statements related to the frequency of pest outbreaks and the challenges farmers face received higher levels of agreement. For instance, "The frequency of pest outbreaks is a significant issue" (mean = 3.65, Std. Dev. = 1.37) was rated as high, indicating that pest outbreaks are a frequent and serious concern for the respondents. Similarly, "Training programs on organic pest control are helpful" (mean = 3.52, Std. Dev. = 1.46) and "Organic pest control measures are time-consuming" (mean = 3.00, Std. Dev. = 1.66) received moderate to high levels of agreement, suggesting that training programs have a positive impact, but there are still concerns regarding the time and effort required for organic pest management.

Finally, two statements received very high levels of agreement. "Farmers face challenges in identifying plant diseases" (mean = 4.57, Std. Dev. = 0.74) and "There is a lack of access to organic pest control tools" (mean = 4.47, Std. Dev. = 0.91) both suggest significant barriers in pest and disease management. These results point to the difficulties that farmers experience in both identifying diseases and accessing the necessary tools for organic pest control. Additionally, statements regarding the role of government and peer knowledge sharing showed moderate levels of agreement, with farmers feeling that "The government supports organic pest management" (mean = 3.26, Std. Dev. = 1.54) and "Peer knowledge sharing on pest control is inadequate" (mean = 2.58, Std. Dev. = 1.45) could be improved. Overall, the data suggest that while farmers recognize the importance of pest and disease management, significant barriers remain in terms of effectiveness, cost, access to tools, and training.

Market Linkage

Table 6 presents the mean values and standard deviations for various statements related to Market Linkage. The table reveals that organic farmers experience significant challenges in accessing markets, as indicated by several statements with very high levels of agreement.

Table 6: Mean Value of Market Linkage

Statements	Mean	Std. Deviation	Mean Interpretation
Organic farmers face challenges in reaching markets.	4.42	0.83	Very High
Market information on organic produce is readily available.	1.62	1.02	Low
The transportation of organic produce is a logistical hurdle.	3.67	0.87	High
The certification process for organic products is cumbersome.	4.76	0.59	Very High
Organic produce often fetches lower prices than expected.	3.87	1.21	High
There is a lack of awareness about organic products in markets.	4.34	0.87	Very High
Organic farmers face challenges in meeting market standards.	4.67	0.68	Very High
There is a need for better government support in market linkage.	4.75	0.66	Very High
Farmer cooperatives can enhance market access for organics.	4.52	0.75	Very High
The government provides adequate information on market trends.	1.75	1.07	Low

For instance, “The certification process for organic products is cumbersome” (mean = 4.76, Std. Dev. = 0.59) and “There is a need for better government support in market linkage” (mean = 4.75, Std. Dev. = 0.66) received very high mean scores, reflecting a strong consensus that both the certification process and the lack of government support are substantial barriers to market access for organic farmers. Similarly, the statement

“Organic farmers face challenges in meeting market standards” (mean = 4.67, Std. Dev. = 0.68) also received a very high rating, highlighting the difficulties farmers face in complying with market requirements.

Other statements related to awareness and market access also received high mean scores, indicating significant concerns. For example, “Organic farmers face challenges in reaching markets” (mean = 4.42, Std. Dev. = 0.83) and “There is a lack of awareness about organic products in markets” (mean = 4.34, Std. Dev. = 0.87) both received very high levels of agreement, suggesting that organic farmers struggle with both physical market access and consumer awareness. Additionally, the statement “Farmer cooperatives can enhance market access for organics” (mean = 4.52, Std. Dev. = 0.75) indicates a belief that collaborative efforts could improve market access for organic products.

On the other hand, several statements related to market information and the logistical aspects of market linkage received low levels of agreement. For instance, “Market information on organic produce is readily available” (mean = 1.62, Std. Dev. = 1.02) and “The government provides adequate information on market trends” (mean = 1.75, Std. Dev. = 1.07) received low scores, indicating that farmers feel that market information is not easily accessible. Similarly, “The transportation of organic produce is a logistical hurdle” (mean = 3.67, Std. Dev. = 0.87) and “Organic produce often fetches lower prices than expected” (mean = 3.87, Std. Dev. = 1.21) were rated as high, reflecting that while transportation and pricing are challenges, they are not as severe as the other issues.

Overall, the findings suggest that organic farmers face significant barriers in achieving successful market linkage, with certification, government support, market awareness, and access to information being key areas of concern. These challenges underscore the need for greater policy support, improved market structures, and better information dissemination to help organic farmers overcome these obstacles.

Constraints of Organic framings

The mean values and standard deviations for the multiple organic farming limitations are shown in Table 4.5. A high degree of constraint is indicated by the first variable, “Access to Organic Inputs,” which has a mean value of 2.69 and a standard deviation of 0.78. This shows that getting the essential organic farming inputs can present some difficulties, but the respondents’ answers varies quite somewhat.

Table 7: Mean Value of Constraints of Organic Farming

Statements	Mean	Std. Deviation	Mean Interpretation
Access to Organic Inputs	2.42	0.73	Low
Pest and Disease Management	3.11	0.51	Moderate
Market Linkage	3.84	0.47	High

With a mean value of 3.22 and a standard deviation of 0.60, the second metric, “Pest and Disease Management,” reflects still another moderate limitation. This suggests that employing organic approaches to manage pests and illnesses presents farmers with only mild challenges. With a mean value of 3.70 and a low standard deviation of 0.53, the third parameter, “Market Linkage,” stands out as having a high degree of constraint. This implies that one of the biggest obstacles facing farmers today is connecting with consumers of organic products.

Gender Wise Mean Values

Table 4.8 presents the gender-wise mean values for three key variables: Access to Organic Inputs, Pest and Disease Management, and Market Linkage. The table provides

insights into how male and female farmers perceive these factors, with the mean scores and standard deviations offering a comparison between the two groups.

Regarding Access to Organic Inputs, both male and female respondents reported low levels of access to organic inputs, with mean scores of 2.19 for males and 2.58 for females. This indicates that, overall, farmers are dissatisfied with the availability or affordability of organic inputs, but females reported slightly better access than their male counterparts. The standard deviation values show that male responses were less varied (0.43) compared to females (0.85), suggesting that females had more diverse opinions on this issue.

Table 8: Gender Wise Mean Values of the Variables

Variables	Gender	Frequency (n)	Mean	Std. Deviation	Mean interpretation
Access to Organic Inputs	Male	81	2.19	0.43	Low
	Female	116	2.58	0.85	Low
Pest and Disease Management	Male	80	2.99	0.33	Moderate
	Female	116	3.20	0.59	Moderate
Market Linkage	Male	80	3.82	0.49	High
	Female	116	3.85	0.46	High

In terms of Pest and Disease Management, both genders reported moderate levels of agreement. Males had a mean score of 2.99, while females scored slightly higher with a mean of 3.20. This difference suggests that female farmers may feel somewhat more positive or effective in managing pests and diseases compared to male farmers, although both groups still face considerable challenges. The standard deviation for males (0.33) was lower than that for females (0.59), indicating that male responses were more consistent, while females showed a wider range of opinions regarding their experiences with pest and disease management.

For Market Linkage, both male and female farmers expressed high levels of market access, with mean values of 3.82 for males and 3.85 for females, respectively. These similar scores indicate that both genders generally perceive strong opportunities to reach markets for their organic products. The standard deviations for both groups were quite close (0.49 for males and 0.46 for females), suggesting a relatively consistent view of market linkage across genders. In conclusion, while both male and female farmers face challenges in accessing organic inputs and managing pests and diseases, they report comparable success in terms of accessing markets for their organic produce. The findings also indicate that females tend to report slightly better access to resources and pest management strategies than males, although the differences are modest.

5. SUMMARY OF FINDINGS

The study explored the main constraints faced by organic farmers, focusing on three critical factors: Access to Organic Inputs (AOI), Pest and Disease Management (PDM), and Market Linkage (ML). The results from statistical analyses provided a clear picture of how these factors interact and affect organic farming practices. Correlation analysis revealed a moderate positive relationship between Organic Farming and Access to Organic Inputs, suggesting that as access to organic inputs improves, organic farming practices tend to improve as well. Additionally, Access to Organic Inputs strongly correlated with Pest and Disease Management, indicating that better input access is linked to more effective pest control. However, the correlation between Organic Farming and Market Linkage was weak, suggesting that market linkage does not significantly influence the overall success of organic farming.

The multiple regression analysis further highlighted that Access to Organic Inputs was the most significant predictor of organic farming success, with a strong positive impact. Pest and Disease Management also had a positive effect, though weaker than that of input access. Interestingly, Market Linkage had a negative impact on organic farming, suggesting that better market linkage could be associated with challenges or constraints that hinder the growth of organic farming practices. This finding emphasizes the need for

further research, particularly focusing on pest and disease management as a crucial area for improvement.

Descriptive analysis provided additional insights into the challenges faced by organic farmers. The study found that organic farmers struggle significantly with accessing necessary inputs, with issues around availability, affordability, and reliability of inputs being major concerns. Particularly, the availability of organic seeds and the lack of information about suitable inputs were identified as key challenges. Pest and Disease Management also emerged as a major constraint, with farmers facing difficulties in controlling pests organically. While training programs on organic pest control were seen as beneficial, farmers struggled with access to pest control tools and the frequency of pest outbreaks. Market linkage presented another significant obstacle, with farmers reporting difficulties in reaching markets, meeting certification requirements, and dealing with low market awareness of organic products. The certification process and lack of government support were cited as major barriers to market access.

A gender-wise analysis revealed that while both male and female farmers faced similar challenges, female farmers reported slightly better access to organic inputs and pest management strategies compared to their male counterparts. However, both genders expressed similar levels of difficulty in accessing markets for their organic products.

In conclusion, the study underscores the importance of addressing the key constraints related to input access, pest management, and market linkage in order to foster the growth and sustainability of organic farming. The results strongly advocate for focusing on pest and disease management as a critical area for intervention, along with improving market access and increasing government support to alleviate the challenges organic farmers face. Additionally, while gender differences were modest, the study suggests that female farmers may benefit from slightly better access to resources and pest management solutions, pointing to the potential for targeted support to improve outcomes for all farmers.

6. CONCLUSIONS

The study in Pokhara on organic farming constraints aligns with findings from multiple regions, revealing common challenges around input access, pest management, and market linkage. Narayanan and Narayanan (2005) discuss similar challenges in India, emphasizing that inadequate access to organic inputs hinders pest management effectiveness, paralleling the Pokhara findings. Like in Pokhara, input cost and availability are significant barriers, and both studies advocate for policy interventions to improve the affordability of inputs. A study in Thailand by Pattanapant and Shivakoti (2009) also highlights issues around input availability but points to the role of cooperative models to support farmers' access to resources, suggesting an approach that could be further explored in Pokhara.

In terms of pest and disease management, Grasswitz (2019) identified that organic farms in developed countries also face challenges with pest control due to limited access to suitable organic inputs. This aligns with the Pokhara findings where pest management depends heavily on input availability. Similarly, Brzozowski and Mazourek (2018) emphasize the need for effective organic pest management systems and training for farmers. In Pokhara, access to training programs was beneficial but insufficient, as Grasswitz's study suggests, without better input access. Both studies thus underscore pest management as a critical focus area for policy development and community support.

Market linkage issues are common across various studies. Oelofse et al. (2010) note that farmers in Brazil and China struggle with certification costs and lack of government support for organic farming, a challenge mirrored in Pokhara's market linkage problems. Similarly, Zundel and Kilcher (2007) find that farmers in developing countries often face market constraints due to low consumer awareness and inadequate support structures. Both studies suggest enhanced government support and certification assistance, underscoring the need for institutional backing to make market access viable for organic farmers.

7. SUGGESTIONS

Given the significant challenge faced by organic farmers in accessing affordable and quality organic inputs, it is crucial for the government of Nepal to increase its support for the organic sector. This can be achieved by providing subsidies for organic fertilizers, seeds, and bio-pesticides, similar to the approaches taken by governments in other countries such as China (Liu et al., 2022). In addition to subsidies, the government should create policies to ensure a steady and reliable supply of organic inputs. Establishing partnerships with local suppliers and encouraging the domestic production of organic input could reduce dependency on imports and lower costs for farmers.

Similarly, organic farmers in Pokhara face considerable difficulties in managing pests without synthetic pesticides, highlighting the need for better pest control methods and more comprehensive training. Providing farmers with access to integrated pest management (IPM) programs that incorporate organic methods such as pheromone traps, neem-based products, and biological pest control could significantly reduce pest damage. In addition, introducing digital tools and mobile applications that offer real-time pest management advice could enhance pest control efficiency. Farmers in more developed regions have benefited from these technological advances and similar strategies could be implemented in Pokhara, particularly with the growing use of mobile technology in rural Nepal.

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