



Original article

Factors Influencing the Effectiveness of the Organic Tea Supply Chain of the Marginalized Organic Tea Producers' Association, Sri Lanka

Amarathunga M.K.S.L.D. ^{a,*}, Herath R.P.K.D. ^a, Kumarasingha K.A.D.P. ^a,
Ranaweera S. ^b, Mahindarathne M.G.P.P. ^a, Amarakoon A.M.C. ^a & Welhena C.K. ^c

^a Export Agriculture Department, Faculty of Animal Science and Export Agriculture, Uva Wellassa University, Badulla, Sri Lanka

^b Bio Foods (Pvt.) Ltd, Kaduwela, Sri Lanka

^c U.H.E. Exports (Pvt) Ltd, Colombo 10, Sri Lanka

Abstract

The demand for organic products has led to remarkable growth in Sri Lanka's organic tea industry. However, sustaining the organic farming system during the current economic crisis presents a challenge. This study aims to assess the factors that influence the effectiveness of the Marginalized Organic Producers Model for the sustainability of the agribusiness supply chain of Bio Foods (Pvt) Ltd by employing a qualitative approach for examining farmers' perceptions. The study evaluates farmers' perceptions of effectiveness through an index score encompassing satisfaction, relativeness, impact, efficiency, and sustainability. Data on socio-economic status, environmental sustainability, institutional involvement, farmers' compliance, and economic viability were collected by conducting a field survey and focus group discussions conducted among bio tea farmers attached to the green tea leaves supply chain of Avonleahill Organic & Biodynamic Tea factory at Diyathalawa, Sri Lanka. The questionnaire instrument was validated by pretesting and applying reliability and normality tests. Descriptive statistics, correlation analysis, and regression analysis were conducted to establish relationships among variables. The reliability analysis results indicated that the survey instrument used in this study demonstrated acceptable levels of reliability, with Cronbach's alpha coefficients exceeding 0.8 for all variables, confirming that the collected data were consistent and reliable for further analysis. Correlation analysis revealed significant positive relationships between variables such as educational status, experience in organic tea farming, environmental sustainability, institutional involvement, compliance of farmers, and economic viability with farmer satisfaction with the organization. Conversely, age and gender showed weak negative relationships with farmer satisfaction. The regression model for effectiveness demonstrated a strong relationship between the predictors and the dependent variable. The model accounted for approximately 88.6% of the variance in qualitative effectiveness, as indicated by the high adjusted R-squared value of 0.871. The overall model was statistically significant, as evidenced by the significant F-change statistic ($F = 61.946$, $p < 0.001$), suggesting that at least one predictor significantly influenced the qualitative effectiveness. The Durbin-Watson value of 1.606 confirmed the absence of substantial autocorrelation in the residuals, meeting the independence assumption. The findings of this study provide valuable insights into the factors that contribute to the qualitative effectiveness of organic tea farmer organizations. These insights are very useful for policymakers, organizations, and farmers in developing strategies to enhance the effectiveness and success of these organizations, ultimately leading to the growth and sustainability of the organic tea industry in Sri Lanka.

Keywords: Organic Tea, Farmer Organizations, Qualitative Effectiveness, Biodynamic, Sustainable, Extension.

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* Corresponding author:

Amarathunga M.K.S.L.D Export Agriculture Department, Faculty of Animal Science and Export Agriculture, Uva Wellassa University, Badulla, Sri Lanka.
Email: lalithsenaka30@gmail.com

INTRODUCTION

Organic tea smallholder organizations play a crucial role in promoting sustainable and high-quality organic tea farming practices (Bathige, 2022). Organizations like MOPA (Marginalized Organic Producers Association) have emerged as key players in the organic tea industry in Sri Lanka. In addition to the mentioned organization, there are several other noteworthy groups, such as the Lumbini Tea Valley's Organic Tea Farming Community and the Ahinsa Organic Tea Farming Community in the down south Morawaka area. These organizations connect smallholder farmers with buyers and provide support in terms of knowledge, resources, and market access (Vidanapathirana & Wijesooriya, 2014). The effectiveness of these smallholder organizations is a critical factor in ensuring the success and sustainability of organic tea farming (Ha, 2014; Wiseman et al., 2022). While previous studies have primarily focused on the technical efficiency and quantitative aspects of organic tea farming, (Kodagoda & Dharmadasa, 2019), there is a need to explore the effectiveness of these organizations qualitatively. Qualitative effectiveness encompasses factors such as farmer satisfaction, compliance with organic standards, environmental sustainability, and institutional involvement. Understanding the factors that contribute to the qualitative effectiveness of organic tea smallholder organizations is essential for enhancing their performance and ensuring a sustainable supply chain of high-quality organic tea (Bui & Nguyen, 2021). This includes examining the practices and standards followed by these organizations, their relationships with farmers, and the impact of institutional support on their effectiveness.

OBJECTIVES

The main objective of this study was to evaluate the effectiveness of the Marginalized Organic Producers Model within the agribusiness supply chain of the company. To achieve this, the study aims to address the following specific objectives:

1. To examine the socio-economic factors that influence the efficacy of the Marginalized Organic Producers Model.
2. To assess the environmentally sustainable practices in the organic tea farming sector and their impact on the model's effectiveness.
3. To analyze the institutional involvement dynamics and their influence on the model's effectiveness.
4. To investigate farmer compliance behaviour and its impact on the model's effectiveness.
5. To evaluate the economic viability of the Marginalized Organic Producers Model in the organic tea farming sector context.

By addressing these objectives, the study aims to provide comprehensive insights into the Marginalized Organic Producers Model and its effectiveness within the organic tea farming sector. The findings of the study will contribute to informed decision-making and sustainable development initiatives within the industry.

CONCEPTUAL FRAMEWORK

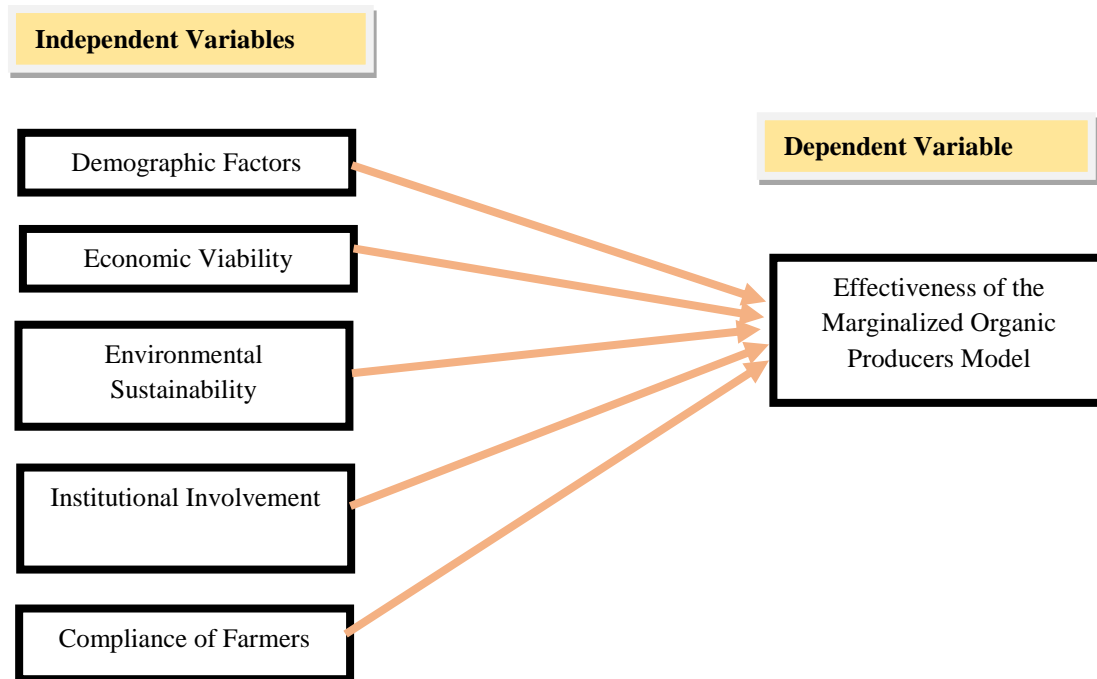


Figure 1. Conceptual Framework (Bathing, 2022; Bui and Nguyen, 2021).

Based on the literature review and theoretical considerations (Bathing, 2022; Bui and Nguyen, 2021), the researchers would propose a conceptual framework that outlines the key factors believed to influence the effectiveness of organic tea production among smallholder farmers. These factors could include:

- Economic Viability (e.g., access to inputs, access to credit, household income)

Economic viability is a cornerstone, encompassing aspects such as access to inputs, credit facilities, and household income. Studies have shown that farmers with sufficient resources are better equipped to adopt sustainable practices and invest in environmentally friendly technologies (Quisumbing & Pandolfelli, 2010).

- Demographic factors (e.g., farmer's education, farm size)

Demographic factors, including education levels and farm size, also significantly impact agricultural sustainability. Higher levels of education are associated with better adoption rates of sustainable farming methods. (Oyetunde-Usman, Olagunju, & Ogunpaimo, 2021).

- Compliance of Farmers on adoption of Technology (e.g., adoption of organic farming practices, soil fertility, use of technology)

Additionally, the compliance of farmers with technological advancements, such as organic farming practices and soil fertility management, directly contributes to the sustainability of agricultural systems (George et al., 2021)

- Institutional Involvements (e.g., access to extension services and market)

Institutional involvement, particularly access to extension services and market opportunities, plays a pivotal role in supporting farmers' adoption of sustainable practices (Dmytro S. et al., 2020),

- Environmental Sustainability (e.g., climate, geographical location)

Moreover, environmental sustainability considerations, including climate and geographical location, influence the suitability and success of various agricultural techniques and systems. (Zabihi et al., 2015)

METHODOLOGY

Research Design and Data Collection

The research design for this study incorporated a mixed methods approach, combining qualitative and quantitative techniques to provide a comprehensive understanding of organic tea farming practices. Surveys were administered to discern trends and patterns in organic tea production, while in-depth interviews were conducted to delve deeper into farmers' experiences and perspectives. By employing these methods, the study aimed to gather rich and diverse data that would illuminate the multifaceted aspects of organic tea farming.

Validation of Surveyed Instrument

The survey instrument was pretested and validated by applying reliability (DeVellis, 2016) and normality analysis (Field, 2009).

Reliability Analysis

The reliability analysis conducted in this study indicates that the measured variables are consistent and reliable. The Cronbach's Alpha values obtained for the variables such as Environmental Sustainability, Institutional Involvement, Compliance of Farmers, and Economic Viability exceed the

commonly accepted threshold of 0.7 for reliability in psychological research (De Vellis, R.F., 2016) (Table 1).

Table 1. Reliability Analysis Test Results

Item	No. of Items	Cronbach's Alpha
Environmental Sustainability	12	0.883
Institutional Involvement	7	0.818
Compliance of Farmer	7	0.832
Economic Viability	6	0.859
Qualitative effectiveness	9	0.902
Overall	41	0.953

The reliability analysis conducted in this study yielded promising results, indicating satisfactory internal consistency for the measured variables (the Cronbach's Alpha values are above 0.7). Specifically, variables such as Environmental Sustainability, Institutional Involvement, Farmer Compliance, and Economic Viability demonstrated required robust internal consistency, surpassing the established threshold.

Sampling Method and Data Analysis

Simple random sampling was used to select a representative sample of 100 organic tea farmers from the Uva-High Grown region, specifically targeting regions such as Diyathalawa, Bandarawela, and Welimada. The sampling method used for drawing samples from each region was simple random sampling. It involved randomly selecting participants from the Uva-High Grown Area, specifically targeting regions such as Diyathalawa, Bandarawela, and Welimada. Since the focus was on understanding the characteristics and practices of organic tea farmers operating in these areas, no region-wise comparison was conducted. Each region was treated equally in the sampling process to ensure representative participation across the Uva-High Grown Area. This approach ensured a diverse representation of organic tea farmers within the region. The collected data underwent analysis both descriptive and econometric analyses using IBM's SPSS software. Descriptive analysis was employed to examine the characteristics of the sample, while econometric analysis facilitated the exploration of relationships between variables, providing valuable insights into the factors influencing organic tea farming practices.

The empirical regression model used in this study was specified as,

$$Y1 = \beta0 + \beta1(X1) + \beta2(X2) + \beta3(X3) + \beta4(X4) + \beta5(X5) + \beta6(X6) + \beta7(X7) + \beta8(X8) + \beta9(X9) + \beta10(X10) + \beta11(X11) + \epsilon.$$

$\beta0$ - Coefficient of Constant

X1 – Gender (GEN)

X2 – Age (AGE)

X3- Family size (FAM)

X4 – Land Size (LAN)

X5- Education (EDU)

X6- Experience in the tea sector (EXT)

X7- Experience in the organic tea sector (EXO)

X8 - Environmental Sustainability

X9- Institutional Involvement

X10 - Compliance of Farmer

X11- Economic Viability Mean score

ϵ – Error

The dependent variable, Y1, represents the effectiveness of organic tea farmers in farmer organizations and was measured using a Likert scale ranging from strongly agree to strongly disagree.

The independent variables included in the regression model were gender, age, family size, land size, education, experience in the tea sector, experience in the organic tea sector, environmental sustainability, institutional involvement, compliance of farmers, and economic viability mean score. The coefficients (β) represent the relationship between each independent variable and the dependent variable, while the error term (ϵ) accounts for the unexplained variance in the model.

RESULTS AND DISCUSSION

Normality Test Analysis

The normality test results (Table 2) revealed notable skewness values for some variables, suggesting a departure from a perfectly symmetrical distribution (Field, 2009). These interpretations provide insight into the distributional characteristics of the variables examined in the study.

Age: Skewness (0.088) and Kurtosis (-0.224) suggest approximately symmetric and normally distributed data.

Family Members: Slightly positive skewness (0.455) and kurtosis (0.681) indicate a slightly right-skewed distribution with slightly heavier tails.

Education: Negative skewness (-0.681) and positive kurtosis (0.353) suggest a left-skewed distribution with slightly heavier tails.

Gender: Skewness (-0.287) and Kurtosis (-1.957) suggest approximately symmetric data but with a distribution slightly flatter than normal.

Experience in the Tea sector: Slightly positive skewness (0.591) and kurtosis (0.119) indicate slightly right-skewed data with a slightly flatter distribution.

Experience in the Organic Tea sector: Slightly positive skewness (0.452) and slightly negative kurtosis (-0.803) suggest approximately symmetric data.

Farm Size: Positive skewness (1.406) and kurtosis (1.767) indicate a right-skewed distribution with heavier tails.

Table 2. Normality Test Results

Variable	Skewness	Kurtosis
Age	0.088	-0.224
Family Members	0.455	0.681
Education	-0.681	0.353
Gender	-0.287	-1.957
Experience in Tea sector	0.591	0.119
Experience in Organic Tea sector	0.452	-0.803
Farm Size	1.406	1.767
Conservations Methods in Organic Farm	-0.079	-1.883
Type of Fertilizers	-0.471	-1.269
Usage of Fertilizers	0.046	-0.779
Environmental Sustainability (Independent Variable)	0.144	-0.510
Motivation Factors	0.353	-1.202
Number of Trainings Attended	-0.405	-0.550
Institutional Involvement (Independent Variable)	0.225	-0.191
Factors affecting the stability of organic tea agriculture	0.408	-1.315
Compliance of farmers (Independent Variable)	-0.178	0.186
Factors affecting on cost of organic tea	1.196	1.050
Method of Labor Use in Plucking	0.038	-1.151
Economic viability (Independent Variable)	-0.350	-0.440
Qualitative effectiveness (Index score) (Dependent Variable)	0.504	-0.626

Conservation Methods in Organic Farm: Skewness (-0.079) and kurtosis (-1.883) suggest approximately symmetric data, but with a distribution flatter than normal.

Type of Fertilizers: Skewness (-0.471) and kurtosis (-1.269) suggest approximately symmetric data, but with a distribution flatter than normal.

Usage of Fertilizers: Skewness (0.046) and kurtosis (-0.779) suggest approximately symmetric data.

Environmental Sustainability, Motivation Factors, Number of Training Attended, Institutional Involvement, Factors affecting the stability of organic tea agriculture, farmer compliance, Factors affecting the cost of organic tea, Method of Labor usage in Picking, and Economic viability: These variables have similar interpretations based on their skewness and kurtosis values.

Qualitative effectiveness (Index score): Skewness (0.504) and kurtosis (-0.626) suggest approximately symmetric data.

Depending on the assumptions of the statistical analyses to be conducted, researchers may need to consider potential transformations or adjustments if the data deviate substantially from normality.

Variables such as farm size and factors affecting the cost of organic tea displayed right-skewed distributions, indicating the presence of a few extreme values on the higher end. Descriptive analysis can be conducted further for these variables to understand their characteristics better.

Correlation Analysis

Factors Influencing Farmer Satisfaction

The correlation analysis conducted in this study provides valuable insights into the determinants of farmer satisfaction within the organic tea farmer organization. Specifically, education level and experience in the organic tea sector emerged as influential factors positively associated with farmer satisfaction (Onduru et al., 2012).

This suggests that higher levels of education and extensive experience contribute to a deeper understanding and appreciation of the organization's objectives and practices among farmers. These findings are consistent with the results of previous research by Rajendran et al. (2016) on factors influencing the adoption of bundled sustainable agricultural practices. These findings emphasize the significance of knowledge acquisition and practical expertise in enhancing satisfaction among organic tea farmers, highlighting the importance of continuous education and experience accumulation within the agricultural sector. Additional references and further discussion could enrich the analysis and provide a more comprehensive understanding of the factors affecting farmer satisfaction

Table 3. Correlation Analysis to Establish Relationship among Variables

Independent variable	Pearson Correlation Coefficient (r)	Strength of Relationship
Age	-0.038	Weak negative relationship
Gender	-0.040	Weak negative relationship
Education in Years	0.630	Strong positive relationship
Number of family members	0.016	Weak positive relationship
Experience in tea sector	0.328	Moderate positive relationship
Experience in the organic tea sector	0.689	Strong positive relationship
Farm size	0.194	Weak positive relationship
Environmental sustainability	0.882	Strong positive relationship
Institutional involvement	0.841	Strong positive relationship
Compliance of farmers	0.837	Strong positive relationship
Economic viability	0.843	Strong positive relationship

Impact of Environmental Sustainability, Institutional Involvement, and Economic Viability

Furthermore, the analysis revealed robust positive correlations between environmental sustainability, institutional involvement, compliance of farmers, and economic viability with farmer satisfaction (Qiao et al., 2016). These findings underscore the significance of sustainable practices, institutional support, adherence to organic standards, and economic stability in shaping farmers' perceptions and satisfaction with the organization. The strong positive relationships suggest that farmers prioritize sustainability efforts, institutional backing, compliance with standards, and economic stability, contributing to their overall satisfaction and engagement with the organization. Conversely, weak negative relationships observed for age and gender highlight the need to consider generational and cultural factors in tailoring organizational strategies (Athuman, 2023).

Exploring the Relationship between Predictors and Qualitative Effectiveness

The multiple linear regression analysis unveiled a robust association regarding the relationship between predictors and qualitative effectiveness. The model explained approximately 88.6% of the variability in qualitative effectiveness, indicating significant contributions from the predictors (Table 4). These findings suggest that the included predictors collectively play a substantial role in determining the qualitative effectiveness of organic tea farmer organizations.

Table 4. Model Summary Results

Model Summary				
R	R²	Adjusted R²	Std. Error of the Estimate	Durbin-Watson
0.941 ^a	0.886	0.871	0.05215	1.606
a. Predictors: (Constant), Economic Viability, Gender, Family Size, AGE, Land Size, Experience in Tea sector, Education, Experience in Organic Tea sector, Environmental Sustainability, Institutional Involvement, Compliance of Farmer				
b. Dependent Variable: Qualitative effectiveness (Index score)				

Assessing Model Fit and Statistical Significance

The adjusted R-squared value of 0.871 indicates that the regression model provides a reliable estimate of qualitative effectiveness with a high degree of explanatory power (Table 5). The strong model fit suggests that the selected predictors effectively capture the variability in qualitative effectiveness among organic tea farmer organizations. Additionally, the significant F-change statistic ($F = 61.946, p < 0.001$) underscores the statistical significance of the overall regression model. This implies that at least one predictor within the model significantly influences qualitative effectiveness, further validating the relevance of the predictors in explaining variations in organizational effectiveness.

Table 5. Model Fit for Dependent Variable

ANOVA^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.853	11	.168	61.946	.000 ^b
	Residual	.239	88	.003		
	Total	2.093	99			
a. Dependent Variable: Qualitative Effectiveness Index Value						
b. Predictors: (Constant), Economic Viability Index Value, Gender, Family Size, AGE, Land Size, Experience in Tea sector, Education, Experience in Organic Tea sector, Environmental Sustainability Index Value, Institutional Involvement Index Value, Compliance of Farmers Index Value						

Table 6 represents the results of a coefficient test that measures the relationship between various independent factors and the dependent factor of qualitative effectiveness. The table shows the unstandardized coefficients, standardized coefficients beta, t-value, and the level of significance (p-value) for each independent variable. The independent variables in this test include gender, age, family size, land size, education, experience in the tea sector, experience in the organic tea sector, environmental sustainability, institutional involvement, compliance of farmers, and economic viability. The dependent variable is the index score of qualitative effectiveness. The table shows that environmental sustainability, institutional involvement, compliance of farmers, and economic viability

are highly significant ($p < 0.01$) factors that have a positive relationship with qualitative effectiveness (index score). This means that as these independent factors increase, the qualitative effectiveness of tea farming also increases. On the other hand, the table shows that gender, age, family size, land size, education, and experience in tea sector are not significant factors in determining the qualitative effectiveness of tea farming. This means that these independent factors do not significantly impact the qualitative effectiveness of the organic tea farming Model.

Overall, these results provide valuable insights into the factors influencing the qualitative effectiveness of organic tea farmer organizations. Similar findings observed by Brinkerhoff & Goldsmith (1992) and Higgins, Cocklin, (2008) highlight the importance of environmental sustainability, institutional involvement, farmer compliance, and economic viability in enhancing the effectiveness of these organizations. These findings are very useful for policymakers, organizations, and farmers in developing strategies to promote further and improve the qualitative effectiveness of organic tea farmer organizations' Model

Table 6. Coefficient Test Results

Variables	Unstandardized Coefficients		Standardized Coefficients Beta	T	Sig.
	B	Std. Error			
(Constant)	-0.145	0.053		-2.741	0.007
Gender	-0.013	0.011	-0.045	-1.169	0.246
Age	0.000	0.001	-0.031	-0.616	0.539
Family Size	0.006	0.005	0.048	1.189	0.237
Land Size	0.015	0.014	0.043	1.012	0.315
Education	-0.005	0.002	-0.109	-1.974	0.052
Experience in Tea sector	-0.001	0.001	-0.065	-1.287	0.202
Experience in Organic Tea sector	0.001	0.003	0.029	0.487	0.627
Environmental Sustainability***	0.500	0.082	0.425	6.129	0.000
Institutional Involvement***	0.224	0.079	0.199	2.846	0.006
Compliance of Farmer***	0.288	0.086	0.247	3.339	0.001
Economic Viability***	0.235	0.077	0.231	3.033	0.003

a. Dependent Variable: Qualitative effectiveness (Index score)

Conclusions

To conclude, the aforementioned relationship analysis offers valuable insights into the degree and significance of the correlation between independent factors and the dependent factor of qualitative effectiveness in the organic tea farming Model. This analysis can be instrumental in comprehending the factors that impact the quality of the tea farming Model and can aid in making informed decisions to enhance the overall quality of tea farming practices.

Effectiveness and Performance of Association

The study has effectively evaluated the effectiveness of marginalized organic producers' associations and provided evidence-based recommendations to enhance their performance. We comprehensively examined the influence of various factors on the qualitative effectiveness of organic tea farmer organization in Sri Lanka through correlation analysis. In conclusion, our study has provided valuable insights into the performance of these associations and offered recommendations for improvement.

Significance of Key Factors

Our research emphasizes the importance of promoting environmental sustainability, involving institutions, ensuring that farmers comply with regulations, and achieving economic viability to improve the effectiveness of these organizations. Furthermore, factors such as education, experience in the organic tea sector, and farmer satisfaction were identified as essential contributors to the organization's success.

Addressing the Existing Gap Between Some Demographic Factors and Farmer Satisfaction

Our study indicates that age and gender do not significantly impact farmer satisfaction in organic tea farming. However, we found that promoting sustainable practices, encouraging institutional support and involvement, and ensuring compliance with organic standards are crucial for the success of organic tea farming. These findings highlight the importance of adopting sustainable practices to enhance the quality of organic tea and promote environmental sustainability while ensuring that all organic farming practices meet the required standards.

Recommendations for Action

Policymakers and organizations are urged to prioritize initiatives to enhance environmental sustainability, improve farmer education and knowledge, and provide necessary resources for economic viability. By focusing on these critical areas, organic tea farmer organizations can thrive, leading to a more sustainable and successful organic tea industry in Sri Lanka.

Contribution to Knowledge and Practical Implications

This research significantly contributes to the expanding knowledge base on organic tea farming practices. Furthermore, it provides practical recommendations for improving the efficacy of these organizations, which will lead to a more sustainable and prosperous organic tea industry in Sri Lanka.

Forward-Looking Perspective

In conclusion, this study represents a crucial milestone towards realizing a more sustainable and successful organic tea industry in Sri Lanka. Its findings provide invaluable insights that can benefit farmers, organizations, and the wider community. By positioning the organic tea sector for long-term growth and prosperity in the country, this study contributes significantly to the field of sustainable agriculture in Sri Lanka.

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REFERENCES

- Athuman, J. J. (2023). Fostering Sustainable Agriculture Through Integrated Agricultural Science Education: General Overview and Lessons from Studies. *Research and Reviews in Agriculture Science Volume I*, 1.
- Bathige, N. (2022). Food Security and Dietary Diversity among Conventional and Organic Tea-Smallholders in Central and Southern Sri Lanka.
- Brinkerhoff, D. W., & Goldsmith, A. A. (1992). Promoting the sustainability of development institutions: A framework for strategy. *World Development*, 20(3), 369-383.

- Bui, H. T. M., & Nguyen, H. T. T. (2021). Factors influencing farmers' decision to convert to organic tea cultivation in the mountainous areas of northern Vietnam. *Organic Agriculture*, 11, 51-61.
- DeVellis, R. F. (2016). *Scale development: Theory and applications* (4th ed.). Sage Publications.
- Dmytro S., Fiona T, Zein K., & Sinéad N. M., (2020), Factors Influencing Adoption of Sustainable Farming Practices in Europe: A Systemic Review of Empirical Literature, *Sustainability* 2020, 12(22), 9719; <https://doi.org/10.3390/su12229719>
- Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). Sage Publications.
- George G. M, Milka N. K, Eric K. B, Jayne N. M, Anne M, Gian N & Felix K. N, (2021)
Adoption Intensity of Selected Organic-Based Soil Fertility Management Technologies in the Central Highlands of Kenya, *Front. Sustain. Food Syst.*, 13 January 2021, Sec. Land, Livelihoods and Food Security, Volume 4 - 2020 | <https://doi.org/10.3389/fsufs.2020.570190>
- Ha, T. M. (2014). Establishing a transformative learning framework for promoting organic farming in Northern Vietnam: a case study on organic tea production in Thai Nguyen province. *Asian Journal of Business and Management*, 2(3).
- Higgins, V., Dibden, J., & Cocklin, C. (2008). Building alternative agri-food networks: Certification, embeddedness and agri-environmental governance. *Journal of Rural Studies*, 24(1), 15-27.
- Onduru, D. D., De Jager, A., Hiller, S., & Van den Bosch, R. (2012). Sustainability of smallholder tea production in developing countries: Learning experiences from farmer field schools in Kenya. *International journal of Development and Sustainability*, 1(3),
- Oyetunde-Usman, Z., Olagunju, K. O., & Ogunpaimo, O. R. (2021). Determinants of adoption of multiple sustainable agricultural practices among smallholder farmers in Nigeria. *International Soil and Water Conservation Research*, 9(2), 241-248.
- Oyetunde-Usman, Z., Olagunju, K. O., & Ogunpaimo, O. R. (2021). Determinants of adoption of multiple sustainable agricultural practices among smallholder farmers in Nigeria. *International Soil and Water Conservation Research*, 9(2), 241-248.714-742.
- Qiao, Y., Halberg, N., Vaheesan, S., & Scott, S. (2016). Assessing the social and economic benefits of organic and fair trade tea production for small-scale farmers in Asia: a comparative case study of China and Sri Lanka. *Renewable Agriculture and Food Systems*, 31(3), 246-257.
- Rajendran, N., Tey, Y. S., Brindal, M., Ahmad Sidique, S. F., Shamsudin, M. N., Radam, A., & Abdul Hadi, A. H. I. (2016). Factors influencing the adoption of bundled sustainable agricultural practices: A systematic literature review. *International Food Research Journal*, 23(5).
- Vidanapathirana, R., & Wijesooriya, N. (2014). *Export Market for Organic Food: Present Status, Constraints, and Future Scope*. Hector Kobbekaduwa Agrarian Research and Training Institute.
- Wiseman, N., Moebis, S., Mwale, M., & Zuwarimwe, J. (2022). The role of support organisations in promoting organic farming innovations and sustainability. *Malay. J. Sustain. Agric*, 6, 44-50.
- Zabihi, H., Ahmad, A., Vogeler, I., Said, M. N., Golmohammadi, M., Golein, B., & Nilashi, M. (2015). Land suitability procedure for sustainable citrus planning using the application of the analytical network process approach and GIS. *Computers and Electronics in Agriculture*, pp. 117, 114–126