Perceived Training Needs of Rural Farmers for Value-addition of Yam Production in Etche Local Government Area of Rivers State

By

Dr. Nlebem B. S.,
Department of Agricultural Education, Faculty of Education Rivers State University, Nkpolu-Orowurokwo, Port Harcourt

Odu. Ngozi Stella
Department of Agricultural Education, Faculty of Education Rivers State University, Nkpolu-Orowurokwo, Port Harcourt

&

Chuckwuocha Precious O.
Department of Agricultural Education, Faculty of Education Rivers State University, Nkpolu-Orowurokwo, Port Harcourt
08036699137, 08038696100, 08169444352
Email Nlebembernard@yahoo.com, Bernard.nlebem@rsu.edu.ng

abstract

This study perceived training needs of rural farmers for value-addition in yam production in Etche Local Government Area of Rivers State. Three objectives, and three research questions, guided the study. Descriptive survey research design was adopted for the study. The target population of the study was 375 farmers who are members of farmers' corporative organizations in the study area that are registered with Rivers State Agricultural Development Programme (RSADP) office in Rumuodumaya Rivers State. The entire population was used for the study, The instrument for data collection was a structured questionnaire. The face and content validity of the instrument was determined by two experts in the field of Agricultural Education. The reliability of the instrument was determined through a pilot study of 30 respondents who were registered farmers outside the study population, while Cronbach Alpha method was used to establish the overall reliability coefficient (r) value of 0.72. The data collected from the research questions were analysed with Mean statistic. The finding from the study showed that technical training of rural farmers on yam

processing steps, safety and quality control training of rural farmers, and business and entrepreneurship training of rural farmers promote value addition in yam production in Etche Local Government Areas of Rivers State. The study recommended among others that Rivers Stale Government, through the Ministry of Agriculture, in collaboration with the Agricultural Development Programme (ADP), should organise regular training programmes for rural farmers on technical, safety and quality control, and business and entrepreneurship skills. These training programmes should be tailored to address the specific training needs of rural farmers in the study area

Keywords: Perceived, Training Needs, Rural Farmers, Value-addition, and Yam Production.

Introduction

Yam is a vital crop in Nigeria, serving as a primary source of food, income, and employment for millions of people, particularly in rural areas. According to Oguntade, Ajewole, and Fagbemi (2018), the crop is widely cultivated in various parts of the country, which include Rivers State being one of the leading producers. Moreover, Rivers State located in the southern part of Nigeria, has a suitable climate and soil condition for yam production. The state is home to many rural farmers who engage in yam production as their primary source of livelihood. However, despite the importance of yam production in the state, rural farmers face numerous challenges that hinder their ability to improve their productivity and income. However, Adebayo, Owusu-Sekyere, and Asiedu (2016) acknowledged that one of the major challenges facing rural farmers is limited access to training and extension services. These challenges could result to many of these farmers lacking the necessary skills and knowledge to engage in value-addition activities, such as processing and marketing of yam products. As a result, they are often forced to sell their products (yam tubers) at low prices, thereby reducing their income and livelihoods.

Mwangi, and Kariuki (2015) opined that value addition refers to the process of increasing the worth of a product or service by improving its quality, functionality, or appeal to customers. In the context of agriculture, value addition involves transforming raw agricultural products into higher-value products that can

command a higher price in the market. On the other hand, value addition is important in yam production, as it enables farmers to earn more income from their crops. (Egesi, Nwosu, & Okechukwu,2020). Moreover, Mwangi, and Kariuki (201 5) noted that value addition can take many forms, including: converting raw agricultural products into processed products, such as flour, oil, or juice., improving the packaging of agricultural products to make them more attractive and convenient for consumers, creating a brand identity for agricultural products to differentiate them from competitors and increase their appeal to customers, improving the quality of agricultural products through techniques such as sorting, grading, and quality control, and creating new products from agricultural raw materials, such as animal feed, biofuels, or pharmaceuticals among others.

However, Oguntade, Ajewole, and Fagbemi (2018) asserted that value addition can bring several benefits to farmers, including, increased income, improved market access, reduced post-harvest losses, and increased competitiveness in the market by differentiating their products from those of their competitors. Undoubtedly, Ocheni, and Ikani (2019), acknowledged that in the context of yam production, value addition can involve activities such as processing yam tuber into flour used in baking and other food products, processing yam tuber into starch for use in food, pharmaceutical, and other industries, processing yam tuber into animal feed for use in poultry and livestock production., processing yam tuber into biofuel for use as a renewable energy source.

Consequently, Ajala, Ogunjimi, and Afolabi (2019) avowed that value-addition involves the transformation of raw yam into various products, such as flour, starch, and animal feed. They further stated that many rural farmers in Nigeria lack the skills and knowledge required to add value to their yam crops. This limits their ability to earn more income from their crops and improve their livelihoods. Undoubtedly, value-addition in yam production is critical for improving the livelihoods of rural. farmers. By engaging in value-addition activities, farmers can increase their income, improve their food security, and enhance their livelihoods. Consequently, to achieve this, farmers require training and capacity-building programmes to acquire the necessary skills and knowledge.

Conversely, Etche Local Government Area of Rivers State is one of the major yam-producing areas in the state. The area has a significant number of rural farmers who engage in yam production as their primary source of livelihood. However, despite the importance of yam production in the area, rural farmers face numerous challenges that hinder their ability to improve their productivity and income. Training can help farmers acquire new skills and knowledge, improve their productivity, and enhance their ability to compete in the market (Nlebem, 2018). However, for training to be effective, it must be tailored to the specific needs of farmers. This requires a perceived training needs of farmers to identify the gaps in their knowledge and skills. It is based on this background that this study focused on perceived training needs of rural farmers for value-addition in yam production in Etche Local Government Area of Rivers State.

Statement of the Problem

Rural farmers in Etche Local Government Area of Rivers State face significant challenges in improving their yam production, leading to low productivity, income, and livelihoods. It was observed that lack of training on programmes that enhance value-addition in yam production, is a major obstacle hindering farmers' ability to process and market their products effectively. This knowledge gap has far-reaching consequences, including reduced competitiveness, market share, and revenue. To address this issue, it is crucial to assess the training needs of rural fanners in Etche Local Government Area of Rivers State, which include technical training on the processing steps, safety and quality control training, and business and entrepreneurship training. Identifying the knowledge and skills gaps that need to be bridged through these targeted training programmes.

Purpose of the Study

The purpose of the study was to assess training needs of rural farmers for value-addition in yam production in Etche Local Government Areas of Rivers State. The study therefore sought to achieve the following specific objectives;

1. Determine the technical training needs of rural farmers for value addition in yam processing in Etche Local Government Areas of Rivers State.
2. Ascertain the storage and quality control training needs of rural farmers for value addition in yam production in Etche Local Government Areas of Rivers State.

3. Investigate the business and entrepreneurship skills training needs of rural farmers for value addition in yam production in Etche Local Government Areas of Rivers State.

Research Questions

The study was guided by the following research questions:

1. How does technical training of rural farmers on yam processing steps enhance value addition in yam production in Etche Local Government Areas of Rivers State?
2. How does storage and quality control training of rural farmers enhance value addition in yam production in Etche Local Government Areas of Rivers State?
3. How does business and entrepreneurship training of rural farmers improve value addition in yam production in Etche Local Government Areas of Rivers State?

Methodology

The study was carried out in Etche Local Government Area of Rivers State. Descriptive survey research design was adopted for the study. The target population for the study was 375 farmers who are members of farmers' corporative organisations. The entire population was used for the study without sampling because the size was manageable. The instrument for data collection was a structured questionnaire, titled 'Perceived Training Needs of Rural Farmers for Value-addition in Yam Production Questionnaire'(PTNRFVYPQ), structured on a four (4)-point rating scale of Strongly Agree -SA (4), Agree --A (3), Disagree- D (2) and Strongly Disagree -SD (1). The face and content validity of the instrument was determined by two experts in the field of Agricultural Education. The reliability of the instrument was determined using Cronbach Alpha method which 375 copies of questionnaire were administered while 360 copies were retrieved and used for the analysis. The data collected from the research questions were analysed with Mean (x) statistic criterion Mean of 2.50 was chosen. Therefore, items whose Mean (x) scores were less than 2.50 were seen as disagree responses while those with Mean (x) scores of 2.50 and above were accepted as agree responses.

Results

Research question 1: How does technical training of rural farmers on yam processing steps enhance value addition in yam production in Etche Local Government Areas of Rivers State?

Table 1: Mean Responses on the Technical Training of Rural Farmers on Yam Processing Steps Enhance Value Addition in Yam Production in Etche Local Government Areas of Rivers State.

S/N	Items	Mean (x)	SD	Remark
i.	Rural farmers need training on harvesting techniques that could reduce damage and prolong shelf-life of yam products.	2.98	0.68	Agree
ii.	Rural farmers need training on hygiene techniques to reduce dirt and contaminants on the yam products and as well to be attractive to consumers.	2.91	0.65	Agree
iii.	Rural farmers need training on proper grating and crushing techniques to reduce starch loss and to improve product quality.	2.97	0.72	Agree
iv.	Rural farmers need training on fermentation techniques as to improve the flavour and texture of their yam products making it more appealing to consumers	2.92	0.71	Agree
v.	Rural farmers need training on milling or grinding that can enable them to produce value-added products, such as yam flour, starch, and animal feeds.	2.98	0.70	Agree
	Grand mean (x)	2.94	0.72	Agree

Researcher's Field work 2025

Table 1 shows the mean response of the respondents on the technical training of rural farmers on yam processing steps to enhance value addition in yam

production in Etche Local Government Areas of Rivers State. Item 1 has mean score of 2.98. Item 2 has mean score of 2.91 item 3 has mean score of 2.97. item 4 has mean score of 2.92. Item 5 has mean scores of 2.91, while item 6 has mean score of 2.98 respectively. The grand mean of 2.94 was recorded. Standard deviation of the respondents range from 0.65 to 0.72. The closeness showed that the respondents were of the same opinion. This indicated that the respondents were in agreement that technical training of rural farmers on yam processing steps enhanced value addition in yam production in Etche Local Government Area of Rivers State.

Research Question 2: How does safety and quality control training of rural farmers enhance value addition in yam production in Etche Local Government Areas of Rivers State?

Table 1: Responses on the Storage and Quality Control Training of Rural Farmers Enhance Value -addition in Yam Production in Etche Local Government Areas of Rivers State.

S/N	Items	Mean (x)	SD	Remark
1.	Training farmers on storage and quality control measures help them produce high-quality yam products that meet market standards	3.01	0.77	Agree
2.	Training farmers on storage and quality control measures reduces the risk of contamination, resulting in safer yam products for human consumption.	2.85	0.72	Agree
3.	Training farmers on storage and quality control measures help them optimize their production processes, reducing waste and increasing productivity.	3.43	0.64	Agree
4.	Training farmers on storage and quality control measures can help them comply with food safety	2.92	0.72	Agree

	regulations, reducing the risk of foodborne illness and protecting consumers.			
5.	Training farmers on storage and quality control measures can result in higher-quality yam products that command a higher price in the market.	2.93	0.74	Agree
	Grand mean (x)	3.02	0.69	Agree

Researcher's Field Work 2025

Table 2 above for research question two confirmed the mean response of the respondents on the safety and quality control training of rural farmers enhance value addition in yam production in Etche Local Government Areas of Rivers State. Item 1 has mean score of 3.01. Item 2 has mean score of 2.85. Item 3 has mean score of 3.43. Item 4 has mean score of 2.92. Item 5 has mean scores of 2.93. The grand mean of 3.02 was recorded above the criterion mean of 2.50. . Standard deviation of the respondents range from 0.64 to 0.77, the closeness showed that the respondents were of the same opinion. This pointed out that the respondents were in strong opinions that safety and quality control training enhanced value addition in yam production in Etche Local Government Area of Rivers State.

Research Question 3: How does business and entrepreneurship training of rural farmers promote value addition in yam production in Etche Local Government Areas of Rivers State?

Table 3: Mean Responses on the Business and Entrepreneurship Training of Rural Farmers Promote Value- addition in Yam Production in Etche Local Government Areas of Rivers State.

S/N	Items	Mean (x)	SD	Remark
1.	Training farmers on innovation and creativity will help them develop in the new form of effective business development, for value addition	2.96	0.72	Agree
2.	Training on communication and interpersonal relationship skills help	2.95	0.73	Agree

	farmers develop a good relationship between farmers and consumers.			
3.	Training farmers on financial management and planning will help them secure loans and make more investments, to increase their production capacity and value addition.	2.93	0.76	Agree
4.	Training farmers on marketing/sales and negotiation skills help them negotiate better prices for their products and increase their revenue and value addition.	2.98	0.75	Agree
5.	Training farmers on networking and partnership building help them develop an entrepreneurial mindset and good relationship with customers.	2.91	0.71	Agree
6.	Training farmers on product diversification help them develop new product and services, increase their revenue streams and value addition.	3.12	0.74	Agree
	Grand mean (x)	2.97	0.75	Agree

Researcher's Field Work 2025

Table 3 shows the mean response of the respondents on how the business and entrepreneurship training of rural farmers on yam promote value addition in yam production in Etche Local Government Areas of Rivers State. Item 1 has mean score of 2.96. Item 2 has mean score of 2.95, item 3 has mean score of 2.93. Item 4 has mean score of 2.98. Item 5 has mean scores of 2.91, while item 6 has mean score of 3.12 and the grand mean of 2.97 recorded was above the criterion mean of 2.50, also Standard deviation of the respondents range from 0.71 to 0.76, the closeness showed that the respondents were of the same opinion. Which indicated that respondents agreed that business and entrepreneurship training of rural farmers promote value addition in yam production in Etche Local Government Area of Rivers State.

Discussion of Findings

Result in research question one revealed that the respondents were in agreement that technical training of rural farmers on yam processing steps enhanced value addition in yam production in Etche Local Government Areas of Rivers State. This is evidenced in the grand mean of 2.94 recorded which indicated that training farmers on proper harvesting techniques reduces damage to the yam tuber resulting in higher-quality products, training farmers on proper washing and peeling techniques reduces dirt and contaminants on the yam tubers resulting in higher-quality products that are attractive to consumers, training rural farmers on packaging and branding improves their knowledge on packaging the final product in a clean and attractive manner to increase its market value and appeal to consumers to mention but a few. This finding agrees with the finding of Oguntade. Ajewole, and Fagbemi (2018) that technical training on yam processing significantly increased farmers' income, and that trained farmers had higher income compared to the untrained farmers. Similarly, Afolabi, Owusu-Sekyere, and Asiedu (2019) found that technical training on yam processing significantly improved product quality, and further affirmed that trained farmers produced higher-quality yam products, with a significant reduction in moisture content and increase in starch content.

The data analysis in research question two showed that safety and quality control training of rural farmers enhanced value addition in yam production in Etche Local Government Area of Rivers State. This is confirmed by the high grand mean of 3.02 which is higher than the criterion mean of 2.50, and indicated that respondents agreed that training farmers on safety and quality control measures help them produce high-quality yam products that meet market standards, reduces the risk of contamination, resulting in safer yam products for human consumption, help them optimize their production processes, reducing waste and increasing productivity, help them comply with food safety regualtions that reduces the risk of food borne illness and protecting consumers, and result in higher-quality yam products that command a higher price in the market. This finding is in line with the finding of Adesina, Owusu-Sekyere, and Asiedu (2021) that safety and quality control training enhanced food safety practice and increased farmers' income in yam production among trained farmers. The finding in research question two also corroborated with the finding of Oyedele, Afolabi,

and Ojo (2019) that safety and quality control training reduced contamination in yam production and significantly improved product quality among trained farmers.

Result in research question three revealed that the respondents agreed that business and entrepreneurship training of rural farmers promote value addition in yam| production in Etche Local Government Area of Rivers State. This is evidenced in grand mean score of 2.97 above the criterion mean of 2.50 which indicated that training farmers on business planning can help them develop effective business strategies, increasing their chances of success and value addition, training farmers on marketing can help them identify and exploit market opportunities, increasing their sales and revenue, training farmers on financial management and access to finance can help them secure loans and investments, increasing their production capacity and value addition, training farmers on negotiation skills can help them negotiate better prices for their products, increasing their revenue and value addition, training farmers on entrepreneurship can help them develop an entrepreneurial mindset, encouraging them to innovate and take calculated risks, and training farmers on product diversification can help them develop new products and services, increasing their revenue streams and value addition. This finding is related with the finding of Adebayo, Owusu-Sekyere, and Asiedu (2018) that business and entrepreneurship training enhanced farmers' marketing skills and increase farmers' income in yam production. Similarly, this finding is also supported by the finding of Oguntade, Ajewolc, and Fagbemi, (2020) that that business and entrepreneurship training promotes value chain development and enhances farmers farmers' competitiveness in yam production.

Conclusion

This study assessed the training needs of rural farmers for value-addition in yam production in Etche Local Government Area of Rivers State. The findings of the study revealed that rural farmers in the study area require training on technical, safety and quality control, and business and entrepreneurship skills to enhance value-addition in yam production. The study identified specific training needs of rural farmers, including proper harvesting techniques, safety and quality control measures, business planning, marketing, financial management, and

entrepreneurship skills. Therefore, providing training to rural farmers on technical, safety and quality control, and business and entrepreneurship skills can enhance their productivity, income, and competitiveness in the yam value chain. Additionally, farmers' organizations and cooperatives can play a crucial role in promoting value-addition in yam production by providing training and support services to their members in Etche Local Government Area of Rivers State.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Rivers State Government, through the Ministry of Agriculture, in collaboration with the Agricultural Development Programme (ADP), should organise regular training programmes for rural farmers on technical, safety and quality control, and business and entrepreneurship skills. These training programmes should be tailored to address the specific training needs of rural farmers in the study area.
2. Rivers State Government, in collaboration with the private sectors, should establish yam processing centres in the study area. These centres should be equipped with modern processing equipment and staffed with trained personnel who can provide technical support to rural farmers.
3. Agricultural Development Programme (ADP) should provide regular capacity building programmes for extension agents on technical, safety and quality control, and business and entrepreneurship skills. This will enable extension agents to provide effective support to rural farmers and enhance value-addition in yam production.

References

Adebayo, P. F., Owusu-Sekyere, E., & Asiedu, E. A. (2016). Effect of Business and Entrepreneurship Training on Farmers' Marketing Skills in Yam Production. *Journal of Agricultural Education and Extension,* 22 (2), 147-158.

Adebayo, P. F., Owusu-Sekyere, E., & Asiedu, E. A. (2018). Effect of Business and Entrepreneurship Training on Farmers' Marketing Skills in Yam Production. *Journal of Agricultural Education and Extension,* 24 (2), 147-158.

Adesina, J. M., Owusu-Sekyere, E., & Asiedu, E. A. (2022). Effect of Safety and Quality Control Training on Food Safety Practice and Income of Yam Farmers in Ghana. *Journal of Food Science and Technology,* 59 (2), *83*1 -838.

Adesina, J. M., Owusu-Sekyere, E., & Asiedu, E. A. (2021). Effect of Safety and Quality Control Training on Food Safety in Yam Production. *Journal of Food Protection,* 84 (5), 83 1-838.

Afolabi, C. A., Owusu-Sekyere, E., & Asiedu, E. A. (2019). Effect of Technical Training on Yam Processing and Product Quality in Ghana. *Journal of Food Science and Technology*, 56(2), 831-838.

Ajala. A. O., Ogunjimi, S. I., & Afolabi, C. A. (2019). Value Addition in Yam Production: A Review of the Nigerian Experience. *Journal of Agricultural Extension,* 23 (1). 1-12.

Egesi. C. N., Nwosu, A. C., & Okechukwu, R. U. (2020). Impact of Technical Training on Yam Processing on Farmers' Income in Nigeria. *Journal of Agricultural and Food Economics,* 4(1), 1-10.

Mvvangi, M., & Kariuki, G. (2015). Value addition in agriculture: A Case Study of Smallholder Farmers in Kenya. *Journal of Agricultural Economics,* 66 (2), 341 -355.

Nlebem, B. S. (2018) *Introduction to Principles of Vocational Agricultural Education*. Chi's Publication; Diobu. Port Harcourt. P. 20-24.

Oguntade, A. E., Ajewole, O. C., & Fagbemi, T. O. (2018). Technical Efficiency of Yam Processing in Nigeria. *Journal of Agricultural Extension,* 32(1), 1-12.

Oyedele, D. J., Afolabi, C. A., & Ojo, M. A. (2019). Effect of Safety and Quality Control Training on Contamination in Yam Production. *Journal of Food Science and Technology,* 56(4), 1870-1876.

Oguntade, A. E., Ajewole, O. C., & Fagbemi, T. O. (2018). Technical Efficiency of Yam Processing in Nigeria. *Journal of Agricultural Extension,* 32 (1), .1-12.

Oguntade, A. E., Ajewole, O. C., & Fagbemi, T. O. (2020). Business and Entrepreneurship Training and Value Chain Development in Yam Production. *Journal of Agricultural Extension,* 34 (2), 1-12.

Ojo, M. A. (2019). Effect of Entrepreneurship Training on Farmers' Income in Yam Production in Nigeria. *Journal of Entrepreneurship and Innovation,* 8(1), I-10.

Oguntade, A. E., Ajewole, O. C., & Fagbemi, T. O. (2018). Technical Efficiency of Yam Processing in Nigeria. *Journal of Agricultural Extension,* 32 (1), 1-12.

Ocheni, S. A., & Ikani, E. I. (2019). Value Addition in Cassava Production: A Case Study of Kogi State, Nigeria. *Journal of Agricultural and Food Sciences,* 17(2), 1-9,