CLIMATE CHANGE, FOOD SECURITY, NATIONAL SECURITY and ENVIRONMENTAL RESOURCES

GLOBAL ISSUES & LOCAL PERSPECTIVES

Edited by

Ahmed Makarfi

Ignatius Onimawo

Prince Mmom

Ani Nkang

Abdullahi Mustapha

Eteyen Nyong

PUPLISHED BY:

Society for Agriculture, Environmental Resources & Management (SAEREM)

SAEREM BOOK CHAPTERS2023: First published 2024: ISBN 978-978-60709-9-5

First published 2024

SAEREM World

Nigeria

Typeset in Times New Roman

Climate Change, Food Security, National Security and Environmental Resources

Global Issues & Local Perspectives

ISBN 978-978-60709-9-5

Printed at: SAEREM World

TABLE OF CONTENTS

Effect of Climate Change on Income and Constraints of Periwinkle Harvesters in Nigeria

Eteyen Nyong

Chapter 5:

The Nexus between Climate Change and Agricultural Production in Nigeria

[1]Ettah, O. I., [2]Igiri, Juliana and [3]Ettah, Goddy I.

Chapter 6:

Climate Change and Adaptation Management Practices in Crop and Animal Production.

Idris, Rakiya Kabir and Suleiman, Akilu

Part two: FOOD SECURITY

CHAPTER 7

Trend of Climate Change Variables: Food Security and Perception on Arable Crop Farmers in South-South Nigeria.

Eteyen Nyong

CHAPTER 8

Social Media Marketing Culture As an Innovation of Delivering Growth in Post-Covid-19 Era

SAEREM BOOK CHAPTERS2023: First published 2024: ISBN 978-978-60709-9-5

Sadiq Mohammed Sanusi[1] and Ahmad Muhammad Makarfi[2]

CHAPTER 9

Digital Agricultural Marketing as A New Age Technologies in Post- Covid-19 Era

Sadiq Mohammed Sanusi[1] and Ahmad Muhammad Makarfi[2]

CHAPTER 10

Climate Change, Pollution and National Insecurity

Ogbanje, Elaigwu Christopher & **Umar**, Haruna Suleiman

CHAPTER 11

Insecurity: Impacts on Agro-Allied Industries and Food Production

Salami, Azeez Oyeniyi

CHAPTER 12

Evolution of Desert Encroachment Narratives and how it affects Desertification Policy Implementation in Nigeria

Abdullahi Umar; Abdullahi Adamu; Kabiru Shehu, Ismail Alfa Adamu and Sadiq Abdullahi

SAEREM BOOK CHAPTERS2023: First published 2024: ISBN 978-978-60709-9-5

SAEREM BOOK CHAPTERS2023: First published 2024: ISBN 978-978-60709-9-5

SAEREM BOOK CHAPTERS2023: First published 2024: ISBN 978-978-60709-9-5

Environmental Resources Policy: Water Management, Pollution, Floods, and Climate Challenges in Forestry

*Timothy Adewole ADEDIGBA. and **Lukuman Lekan, ADELAKUN

SAEREM BOOK CHAPTERS2023: First published 2024: ISBN 978-978-60709-9-5

Preface

This book adopts an exegetical approach as well as a pedagogic model, making it attractive agriculture and environmental economics teachers, professional practitioners and scholars. It is eschews pedantry and lays bars the issues in such clarity that conduces to learning. The book elaborates on contemporaneous climate change, food security, national security and environmental resources issues of global significance and at the same time, is mindful of local or national perspectives making it appealing both to international and national interests. The book explores the ways in which climate change, food security, national security and environmental resources issues are and should be presented to increase the public's stock of knowledge, increase awareness about burning issues and empower the scholars and public to engage in the participatory dialogue climate change, food security, national security and environmental resources necessary in policy making process that will stimulate increase in food production and environmental sustainability.

Climate Change, Food Security, National Security and Environmental resources: Global issues and Local Perspectives is organized in four parts. Part One deals with Climate Change with Six Chapters, Part Two is concerned with Food Security with Nine chapters, Part Three deals with National Security with Five Chapters, while Part Four pertains Environmental Resources, has Five Chapters.

Ahmed Makarfi / Eteyen Nyong

April 2024

SAEREM BOOK CHAPTERS2023: First published 2024: ISBN 978-978-60709-9-5

Chapter 23

Analysis of Green Leafy Vegetable Profitability and Risk Management among Women Marketers in Ekiti State, Nigeria

Ajibade, Y.E.*[1], Folayan, J.A[2]., Akinyemi, M[3]., Ayeni, M.D[4]., Musa, V.H[5]., and Oni, S.O[6].

Abstract

Women's participationin all facets of agriculture is gainingmore attention, especially amidglobal food insecurity and alarming health challenges. Theirinvolvement in the marketing ofgreen leafy vegetables which are characterized by diverse risks needsto be managed profitably. A multi-stage sampling technique was employed to gather information from 100women green leafy vegetables(GLVs) marketers. The descriptive statisticsdescribe socio-economic characteristics, gross margin estimated profitability, mean scores from a 4-point Likert scale identified sources of risks and management strategies among women GLVs marketers. The results showed that the majority (55.0%) of the respondents were married with a mean age of 45.08. The respondents had an average household size of about 7 persons,and 13.43 years mean marketing experience while most (82.0%) have former education. GLV's marketing was profitable with a benefit-cost ratio (1.07), average total revenue (₦509.29/kg), average total cost(₦475.95/kg), and gross margin (₦33.34/kg).Delay in selling and low selling price (mean score = 2.71, 2.67) were the serioussources ofrisk encountered by the respondents respectively. The risk management strategies employed by the marketers include selling at low prices (mean score =3.60), selling across various markets (mean score =3.56), reducing quantity purchased (mean score = 3.40) and others.In conclusion,GLV's marketing was a profitable agribusiness among women in the area. Thus, modernpre-cooling and cold storage facilities should be made available to prolongtheGLVs'shelf life and to prevent huge losses. Women should be exposed to technologies that enhance GLVsfreshness, quality and quantity preservation.

SAEREM BOOK CHAPTERS2023: First published 2024: ISBN 978-978-60709-9-5

Keywords: Profitability, Risk, Management, Women,GLVs

Introduction

Green leafy vegetables (GLV) refer to plant leaves which are eaten raw or cooked and sometimes they are accompanied by tender plant shoots and petiole. GLV are highly rich in vitamins A, C and B complex, dietary fibre,and minerals (calcium, potassium, magnesium and phosphorus). GLV play a vital role in the human diet due to their low fat and carbohydrate contents (Kumar, Kumara and Shekhar, 2020). Green leafy vegetables are found and grown all over the world as far as the climatic conditions in such environmentspermit and based on the type of green leafy vegetable consumed in such areas. In Ekiti-StateFalls, there are both wild and exotic GLV which are cultivated, sold and consumed by the people both in rural and urban areas such as Amaranthus (Tete), Water leaf (Gbure), Jute leaf (Ewedu), Lagos spinach (Sokoyokoto) andmany others.TheUnited States Department of Agriculture(USDA) recommends two and three cups of vegetable intake per day for adults, but because the greens are not dense, about two cups of raw greens are to be taken to get a nutritional equivalent of one cup of serving (Bekky and MS, 2018). Also, World Health Organization (WHO) recommends 5 times daily intake of fruit and vegetable (at least 400g) for healthy living.

The growing population and need to diversify diet consumption by consumers has resulted in rise market demand for green leafy vegetables in rural and urban places (Schreinemachers, Simmons and Woperees, 2018). It includes all the operations and decisions made by producers rangingfrom the most marketable crops to be produced to the best way of delivering quality produce to the ultimate consumers profitably. Due to the clamor for good health and the increased knowledge about the nutritional and health benefits derived from GLV, have created opportunities for farmers, thus exploiting the avenue to produce more GLV for sale (FAO, 2014). Market risks are the result of variations in supply and demand for crops that are not subjected to price controls and the inability of controlled markets to respond timely and efficiently to changes in market conditions (Nicol, Ortmann and Ferrer, 2020). Variations in the market price fetched by the farmers are a reflection of the market risk. Moreover, market risks may be due to factors affecting the timely delivery of produce to markets or quality of produce (e.g. poor feeder roads, non-existence of storage/ transportation facilities, bulk and perishable nature of the produce) (Nicol *et al.*, 2020).

Risk management is the systematic process of identification, evaluation, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability or impact of unfortunate events or to maximize the realization of opportunities (Alimi and Ayanwale, 2015).

GLV are a highly perishable commodity which can lose their freshness, quality, quantity and market value within a few hours if not properly preserved. These pose a great risk to the farmers who cultivate and sell to the GLV marketers either at the farm gate or at the marketplace. However, the risk experienced by the GLV marketers could be higher because they buy in bulk most times at the farmgates or through the middlemen and they sell the GLV in bunchs or smaller quantities to the ultimate consumers, the commodity may be in their custody longer than expected due to market forces.Inthe process, they are likely to be faced with diverse risks which could affect their business adversely. Risks in this regard could evolve from many factors which needed strategies to avert or prevent in order to make their business viable and profitable. Therefore, GLV marketers need strategies to manage the diverse risks that evolved in the course of the transaction to minimize cost and losses incurred respectively. Risk management comes into play because it's the systematic process of identification, evaluation, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability or impact of unfortunate risks or to maximize the realization of opportunities in their GLV sales (Ghazieh and Chebana, 2019).

Due to the perishable nature of green leafy vegetables, marketers may face significant challenges, and the unpredictable yields of these producers may make it difficult to plan supply to meet consumer demand. Additional potential hazards that may be relevant in GLV markets include quantity risks in conjunction with shifting consumer demand and manufacturing conditions, as well as price fluctuations brought on by the product's perishable or delicate character. Aditto et al. (2017) state that unexpected weather, particularly during the dry season, or serious crop diseases can also have a detrimental impact on production and, consequently, the selling system. The cultivation of vegetables is risky, and the way they are sold to consumers depends on a number of uncontrollable circumstances (such insect and disease infestations) that also have an impact on the product's quantity and quality. There are past empirical studies on leafy vegetables by other authors (Li, Wu, Zhuang, Xia, Chen, Wang, Wang, Wu, Rao, Du, Zhao, Yi, Wan and Zhou, 2021;

Eloh, 2021; Maseco, Mabhaudhi, Tesfy, Araya, Fezzehazwa, and Du Plooy, 2018; Oladejo, Okesola, Oyerinde, and Adebowale, 2018; Richard, 2016), but there remain a paucity of studies ongreen leafy vegetables as it relates to women and strategies employed by them in managing risksin the study area. Therefore, the study considered green leafy vegetable profitability and risk management among women in Ekiti- State, Nigeria. The study specifically: described the socio-economic characteristics of women green leafy vegetable marketers; estimated costs and returns of women green leafy vegetable marketers in the study area; examined the sources of market risk among women green leafy vegetable marketers in the study area; identified the risk management practices adopted by women green leafy vegetable marketers in the study area

Materials and Method; Study Area:

The study was carried out in Ekiti State, South-west geo-political zoneof Nigeria. It has an estimated population of about 3.3. million as estimated by NBS(2021). Ekiti is located between Longitude 40^0 51' and 50^0 451' East of the Greenwich Meridian and Latitude $70^{0\ 151'}$ and80^0 51' North of the Equator. The State lies south of Kwara State and Kogi State and is bounded by Ondo State in the East and the South witha total land area of 5887.890sq km. The Ekiti State temperatureranges between 21^0C and 28^0C coupled with high humidity. There are various rural markets within Ekiti State where various agricultural produce such as vegetables, green leafy vegetables, plantain, bananas, palm oil, cocoa beans, oranges and yam tubers, paddy rice, cassava tubers, maize and cowpea are sold. These markets operate on a daily and weekly basis. The majority of the leafy vegetable marketers are women and these markets attract consumers and other traders from urban areas within and outside the state.

Sampling technique: Multi-stage sampling techniques were adopted for the study. Ekiti State was purposively selected from South-west, Nigeria at the initial stage, because of great involvement in agricultural production especially in the cultivation of different types of vegetables, fruit and other food crops. Secondly, Moba Local Government Area was purposively selected because of high concentration of women green leafy vegetable marketers. Lastly, three rural markets (Otun, Igogo and Erinmope) were randomly selected. Thus, a total sample size of 100 respondents were selected with respect to the number of registered women green leafy vegetable marketers in each market. Thus, 40 respondents were selected from Otun market, 30 from Igogo market and also 30 respondents from Erinmope market respectively.

Method of Data Analysis

Descriptive statistics, gross margin, and the mean score on a 4-point Likert scale were used to analyse the study's data.

Profitability Estimation UsingGross Margin Analysis

GM = TR-TVC …….. (1)

Where:

GM- Gross Margin (₦)

TR- Total Revenue (₦)

TVC- Total Variable Cost (₦)

Cost of GLV ((₦/kg)

Cost of packaging (₦/kg)

Rent (₦/day)

Transportation (₦/kg)

Levies (₦/kg)

Loading and off-loading (₦/kg)

4-Point Likert Scale

Sources of Risk among GLV Marketers: The women GLV marketers' sources of risks were realized through a mean score from a 4-point Likert scale. The ratings are specified as

Opinion	**Point**
Very Serious (VS)	4
Serious (S)	3
Not Serious (NS)	2
Notvery serious (NVS)	1

The mean response to each item was calculated using:

$X = \frac{\sum FX}{N}$ …… (2)

Where:

X = Means response

∑= Summation

F= Number of respondents choosing a particular

X = Numerical value of the scale point

N = Total number of respondents to the item.

Decision rule:

1. Any mean score with Mean Score (MS) less than 2.5 indicates Not very serious risk;
2. Any mean score with Mean Score (MS) greater than 2.5 indicate a Very Serious Risk

Risk Management Strategies: The women GLV marketers' risk management strategies were also realized through mean score from 4-point Likert scale. The ratings are specified as

Opinion	**Point**
Strongly Agree (SA)	4
Agree (A)	3
Disagree (D)	2
Strongly Disagree (SA)	1

The mean response to each item was calculated using:

$$X = \frac{\sum FX}{N} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Where:

X = Means response

∑= Summation

F= Number of respondents choosing a particular

X = Numerical value of the scale point

N = Total number of respondents to the item.

Decision rule:

1. Any mean score (MS) < 3.0) indicateswas not mostly used risk management strategy
2. Any mean score (MS) >3.0 indicates is mostly used risk management strategy

Results and Discussion: Socio-economic Characteristics of the Respondents

The resultsin Table 1 showed that the mean age of respondents was 45.08 years with most (55.0%) falling within 18-45 years of age. This implies that the respondents were in their economically active age. This shows that they were still in their productive years thereby increasing their market participation in green leafy vegetable selling. The results agrees with the findings of Ikechi and Ayman (2018), who found most vegetable marketers to be active and productive female. Also, the results showed that most (55.0%) of the respondents were responsible married women. It can be inferred that marketers of green leafy vegetables had additional financial and social obligations which necessitated venturing into the business to support their family resources. The results concur with the findings of Alao, Bamiwoye, Agboola and Apantakia (2020), in which above 90% of respondents who dominated leafy vegetable marketing in their study were married women.

The mean selling experience was 13 years with majority (51.0%) having 1- 10 years of marketing experience.The findings indicated that, overall, 82.0% of the respondents had completed formal education, ranging from elementary to postsecondary, with the majority (43.0%) having completed secondary school. The results indicate that the majority of marketers had a minimum of a primary school education (Isitor, Otunaiya and Iyanda, 2016). This suggests that marketers at GLVs who have received formal education tend to be more focused on the market, have a better understanding of current market conditions, and can thus capitalise on the market environment (Idris-Adeniyi, Busari, Alabi, Olaleye and Abideen (2022). The size of a household can be used to estimate how much family labour is available for vegetable marketing initiatives. According to the results, the majority of respondents (51.0%) had six or more individuals in their household, which consisted of roughly seven people. Thus, there may be many more mouth to be fed by the respondents and

helping hands could be made available to the marketers by their available household members in marketing.

The results also showed that 58.0% of the respondents got their finances from personal savings while others got theirs from friends, relations and microfinance banks. Ninety percent of the respondents were found to be members of active cooperative organizations. This suggests that being a part of a group is advantageous for marketers because it fosters collaboration among marketers and gives them access to market information. The results revealed that 95% of the respondents had no contact with extension agents. The results revealed that the respondents also engaged in the sales of other agricultural produce and non-agricultural activities. Therefore, respondents have multiple streams of income, which could cushion the effect of losses in green leafy vegetable marketing.

Table 1: Socio-economic characteristics of Women Leafy Vegetable Seller

Age	*Frequency*	*Percentage*	*Mean*
18-30	17	17	
31-45	38	38	
46-60	32	32	45.08
61-75	13	13	
Total	100	100	
Marital status			
Married	55	55	
Divorced	2	2	
Single	11	11	
Widow/widower	28	28	
Separated	4	4	
Total	100	100	
Selling experience			
1-10	51	51	
11-20	38	38	13.43
21-30	8	8	
31-40	3	3	
Total	100	100	
Education			
No formal education	18	18	

Primary	21	21	
Secondary	43	43	
Tertiary	18	18	
Total	100	100	
Household size			
1-5	42	42	
6-10	51	51	6.57
11-15	7	7	
Total	100	100	
Finance			
Personal savings	58	58	
Friends and relations	12	12	
Microfinance	30	30	
Total	100	100	
Cooperative society			
Yes	90	90	
No	10	10	
Total	100	100	
Extension contact			
Contact	5	5	
No contact	95	95	
Other occupation			
No	13	13	
Trading other agricultural produce	39	39	
Civil service	10	10	
Artisan	20	20	
Others	18	18	
Total	100	100	

Source: Field survey, 2022

Profitability of Green Leafy Vegetables of Respondents : The results in Table 2 showed that the average return for selling green leafy vegetables was ₦509.29 per kg, and the average variable cost (cost of green leafy vegetables, rent, packaging, transportation, market levies and cost of loading and offloading) was ₦475.95 per kg. The gross margin for selling green leafy vegetables

was ₦33.34 per kg, while the benefit cost ratio (BCR) was1.07. This implies that on every ₦1 invested in marketing of green leafy vegetables there was a return of ₦1.07k. The findings concur with the findings of Boateng *et al.* (2016) who found out that local leafy vegetable marketing was profitable in Tamale metropolis.

Table2: Average costs and Returns of Women Leafy vegetable Sellers

Items	*Value (₦)*
A. Returns	
Selling price	509.29
Quantity	1kg
Total Revenue (TR)	509.29
B. Variable Items	
Cost of GLVs	358.41
Rent	96.14
Packaging	2.41
Transportation	11.78
Levies	5.52
Loading and off-loading	1.69
Total Variable Costs (TVC)	475.95
Gross Margin, GM = TR – TVC	33.34
BCR = TR/TVC	1.07

Source: Field survey, (2022)

Sources of Risk in Green Leafy Vegetable Marketing: The results in Table 3 showed that delay in selling was the most serious risk confronted by women leafy vegetable marketers (Mean score = 2.71) which has tendency of reducing their returns drastically. Next on the list was low price bargaining by the consumers especially when the products were losing their freshness and quality (Mean score =2.67). At times the delay in selling could be due to higher supply of GLVs in the market than quantity demanded by the consumers. Since, green leafy vegetables are highly perishable in nature and there is inadequate pre-cooling and cold storage facilities for adequate preservation, therefore, the marketers have to sell quickly most time at ridiculous prices (Porat, Liehter, Tery, Harker and Buzby, 2018). The findings also conform to the findings of Makule,

Dimoso and Tosson (2022) who discovered between 30- 50 percent post-harvest losses in fruits and vegetables. Also, selling at low price for fear of perishability (2.67) was a marketing risk experienced by respondents. Meanwhile, association influence, price fluctuation and others do not pose serious risk to the GLVs marketers in the area.

Table 3: Sources of marketing risk among the Respondents

Variable	*VS*	*S*	*NS*	*TSS*	*MS*	*Decision*	*Rank*
Price fluctuation	51	33	16	235	2.35	Serious	4th
High marketing cost	33	59	8	225	2.25	Serious	5th
Selling delay	77	17	6	271	2.71	Serious	1st
Lack of market information	37	48	15	222	2.22	Serious	6th
Association influence	56	35	9	247	2.47	Serious	3rd
Poor product packaging	40	40	20	220	2.20	Serious	7th
Low price for the products	73	21	6	267	2.67	Serious	2nd
Lack of marketing centers	26	23	51	175	1.75	Not Serious	10th
Low extension visits	36	19	45	191	1.91	Not Serious	9th
Lack of access to credit	40	29	31	209	2.09	Serious	8th

Source: Field survey (2022).

Risk Management Strategies by Women Leafy Vegetables Marketers: The results in Table 4 showed that selling at low price due to perishability is the most (Mean score= 3.6) risk management strategy used by the respondents. The marketers tend to sell the green leafy vegetables at low prices before they become unsellable. The results confirm the findings of Also, selling at low price was a strategy employed by the respondents to guide against total lost due to high perishability of green leafy vegetable. The results conform with the findings of Alao *et al.* (2022), in which low selling price prevented post-harvest leafy vegetable marketing in Ori-ade Local Government Area, Ilesha. The second important management strategy used by the respondents was selling across various market (Mean score=3.56). Leafy vegetable sellers in the study area adopt the strategy of selling across different markets as the markets in the area are in close proximity to one another.

Reducing quantity purchased (Mean score =3.40) by the marketers was another risk management strategy embraced by the respondents in the area. This strategy tends to reduce the amount of leafy vegetables purchased to match the market demand. Purchasing fresh leafy vegetable directly from farmgate was another risk management strategies employed by the marketers (Mean score =3.36). The marketers in the study area in a bid to reduce risk and reduce cost of purchase preferred to buy directly from the farmers at farmgates instead of other sources such as from assemblers. The next most important risk management strategies utilized by the marketers were wrapping with jute bags or other moisturizing material, slicing and sundry (Mean score of 3.3 and 3.29) respectively. This storage strategy could preserve moisture content and increase the shelf life of green leafy vegetables. Another strategy used in managing risk by the marketers was diversification to other trade (mean score= 2.9) which will help them to generate income from other means in case of losses emanating from green leafy vegetable marketing

Table 4: Risk Management Strategies among Women Leafy Vegetable Sellers

Variables	*SA (4)*	*A (3)*	*D (2)*	*SD (1)*	*TSS*	*MS*	*Rank*
Selling at low price due to perishability	63	35	1	1	360	3.60	1st
Selling across various markets	57	42	1	0	356	3.56	2nd
Contractual arrangement with buyers	25	42	27	6	286	2.86	9th
Obtaining market information on forecasted price trend	19	43	36	2	279	2.79	10th
Diversification to other trade	23	51	26	0	297	2.97	8th
Purchasing GLVs directly from farmgate	59	21	17	3	336	3.36	4th
Slicingand sundry	45	44	6	5	329	3.29	6th
Wrapping with jute bags or other moisturizing material	47	40	9	4	330	3.30	5th
Reducing quantity purchased	51	39	9	1	340	3.40	3rd

Source: Field survey (2022).

Note: SA (4) = strongly agree, A (3) =agree, D (2) =disagree, SD (1) =strongly disagree, TSS=total sum of square, MS=mean score.

Conclusion and Recommendation: The study analyzed women green leafy vegetable marketers' profitability and risk management strategies in Ekiti- State, Nigeria. The study found out that the marketers were within their active- productive age. They were mostly married with few single, separated, divorce and widow. The findings showed that majority of the respondents acquired one form of former education or the other. They were highly experienced in green leafy vegetable marketing. The study also discovered that green leafy vegetable marketing was a profitability venture in the study area. However, consumers' low price bargaining, especially when the commodity is losing its freshness due to very short shelf life and perishability was a very serious risk. Selling delay was another very serious risk in green leafy vegetable marketingwhich emanates when supply is higher than the demand in the markets. The findings indicated selling at low price, selling across various markets, purchasing directly from farm gate, slicing, sundry, wrapping with jute bags or other moisturizing material and reducing quantity purchased as the risk management strategies utilized by the women GLVs marketers in the study area.

The study recommends purchase of cool storage facilities by the respondents as an association and could also seek for financial assistance from the governmental and non- governmental organization within their reach to prolong GLV shelf life. Also, extension workers should practically train the marketers on new techniques of green leafy vegetable preservation and packaging to make the GLV business more lucrative.

References

1. Aditto, S., Gan, C. and Nartea, G.V. A. (2017), "Sources of Risk and Risk Management Strategies: The Case of Smallholder Farmers in a Developing Economy. Journal of Risk Management - Current Issues and Challenges"25, 309–23.
2. Alao, O.T., Bamiwuye, O.A., Agboola, T.O. and Apantakia, I.E. (2020). Assessment of Post-harvest Losses in Marketing of Leafy Vegetabless in Oriade Local Government Area of Ilesha: Implications for Food Security. Journal of Rural Extension Development, 14, 2020, 26-34.
3. Alimi, T. and Ayanwale, A. B. (2015), "Risk and Risk Management Strategies in Onion Production *in Kebbi State of Nigeria", J ournal of Social . Sci.ence, 10, 1–8.*

4. Boateng, V.F., Amfo, B., Abubakari, A, Yeboah, O.B. (2016). Do Marketing Margins Dtermine Local Leafy Vegetables Marketing in Tamale Metropolis. African Journal of Business Management, 10(5), 98-108. DOI: 10.5897/AJBM 2015.7978
5. Bekky, B. and MS, RD. (2018). USDA, Fruit and Vegetable Recommendation. https://www.weekand.com.
6. *Ejoh, S.I. (2021). Traditional Green Leafy Vegetables as Underutilized Sources of Micronutrients in a Rural Farming Community in South West Nigeria II: Consumption Pattern and Potential Contribution to Nutrients Requirements. South African Journal of Clinical Nutrition, 34 (2), 40-45.*
7. FAO (2014). Youth and Agriculture: Key Challenges and Concretes Solutions. Food and Agriculture Organization of United Nations (FAO) in Collaboration with the Technical Centre for Agricultural and Rural Cooperation and International Fund for the Agricultural Development (IFAD).
8. Ghazieh, L. and Chebana, N. (2019). The Effectiveness of Risk Management System and Firm Performance System in European Context. Journal of Economics, Finance and Administrative Science, 26 (52), 182 -196.
9. Idris- Adeniyi, K.M., Busari, A.E., Alabi, A.A., Olaleye and Abideen, K.A. (2022). Costing Post-harvest Losses in Selected Leafy Vegetable Marketing in Lagelu Local Government Area, Oyo State, Nigeria. Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development, 22 (3), 313 – 320.
10. Ikechi, K.A. and Ayman, S. (2018). Marketing Analysis of Selected Vegetables in Portharcourt Metropolis, Rivers State, Nigeria. IOSR Journal of Agriculture and Veterinary Sciences (IOSR-JAVS), 11(2), 26-34.
11. Isitor, S.U., Otunaiya, A.O. and Iyanda, J.O. (2016). Efficiency of Vegetables Marketing in Peri-urban Areas of Ogun State, Nigeria. Journal of Agricultural Science, 8(3), 142-150.
12. Kumar, D., Kumar, S. and Shekhar, C. (2020). Nutritional Components in Green Leafy Vegetables: A Review. Journal of Pharmacognosy and Phytochemistry, 9(50, 2498-2502.
13. Li, N., Wu, X., Zhuang, W., Xia, L., Chen, Y., Wang, Y., Wang, Y., Wu, C., Rao, Z., Du, L,Zhao, R., Yi, M., Wan, Q, Zhou, Y. (2021). Green Leaf Vegetable and Lutein Intake and Health Outcomes. Food Chemistry, 30, October 2021, 130145.
14. Makule, E., Dimoso, N., Tasson, S.A. (2022). Pre-cooling and Cold Storage Methods for Fruits and Vegetables in Sub- Saharan African. Horticulturae, 2022, 8, 776. https://doi.org/10.3390/horticulturae.
15. Maseco, I., Mabhaudhi, T., Tesfy, S., Araya, H.T., Fezzehazwa, M., Du Plooy, C.P. (2017). African Leafy Vegetables (A Review of Status Production. Sustainability 2018, 10, 16;doi: 10:3390/Su10010016. www.mdpi.com/journal/sustainability.
16. Nicol, R. M., Ortmann, G. F. and Ferrer, S. RD. (2020), "Perceptions of key business and financial risks by large scale sugarcane farmers in KwaZulu-Natal in a dynamic socio-political environment", Agrekon: Agricultural Economics Research, Policy and Practice in Southern Africa, 46(3), 351–370.
17. Oladejo, A.A., Okesola, M.A., Oyerinde, A.S. and Adebowale, O. (2018). Evaluation of Goitrogenic Content of Common Vegetables in South West, Nigeria. Asian Food Science Journal, 4(1): 1-6. Doi: 10.9734/AFSJ/2018/42750.

18. Porat , R., Liehter, A., Tery, L.A., Harker, R., Buzby, J. (2018). Postharvest Losses of Fruit and Vegetable during Retail in Consumers' Home: Quantifications, Causes and Means of Prevention. Postharvest Biol. Technol., 2018.
19. Richard, L.P. (2016). The Effect of Green Leafy and Cruciferous Vegetable Intake on the Incidence of Cardiovascular Diseases. : A Metal- Analysis. JRSM Cardiovasc Dis., Jan-Dec; 5; 2048004016661435. Doi:10.1177/2048004016661435.
20. Schreinemachers, P., Simmons, E.B. and Woperees, M.C.S. (2018). Tapping the Economic and Nutritional Power of Vegetables. Global Food Security, 16 (2018), 36-45.