



Assessment of Youth Participation in Cucumber Production as Sustainable Solution to Food Security in Owerri Agricultural Zone, Imo State, Nigeria

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Abstract

The study assessed youth participation in cucumber production for sustainable food security in Owerri Agricultural Zone of Imo State. The specific objectives discussed were the socio-economic characteristics of the respondents, identifying the roles played by the youths in cucumber production, determining the level of production, and identifying the constraints to youth participation in cucumber production. A multi-stage sampling technique was used in selecting 50 youth involved in cucumber production. A structured questionnaire was used to elicit information. Descriptive and inferential statistics were used in data analysis. Major findings show that the majority (40%) of the youths falls within 30-40 years. Majority (80%) were married with an average household size of 4-6 people. From the findings Youth carry out roles such as operating modern machinery (3.0), controlling pests and diseases (3.3), and marketing of cucumbers (3.7), Cucumber production is a profitable business for youth engagement. Constraints were identified such as poor agricultural storage, inadequate credit facilities, low yield, etc. It was concluded that if the youth adopt modern methods of cucumber production, it will be sustainable and food security will be assured. It was recommended that Agricultural credits should be made available to the youths at low or zero interest rates.

Keywords: Assessment, Participation, Cucumber Production, Sustainable solution

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Background to the Study

Cucumbers (*Cucumis sativus*) belong to the family of Cucurbitaceae and are annual herbaceous climbing plants. It originated in India (Abdalbasit A.N., Mirghani, Mohamed E, Hussein C, Ismail (2017). Cucumber is said to have spread from India to other parts of the world including West Africa (Okpani, Orji, and Umekwe 2023). Cucumbers are grown and eaten as vegetable fruits and are very good sources of Vitamins A, C, K, B6, Potassium, diet fibers, Pantothenic acid, magnesium, phosphorus, Copper, and manganese. Cucumbers possess other biological properties that make them outstanding such as anti-oxidant, anti-carcinogenic, anti-microbial, anti-hyperglycemic, and anti-inflammatory effects, etc, (Uthpala, Marapana, Lakmini, and Wettimuny 2020). Cucumbers are vegetables that can thrive in most parts of Nigeria making them a good crop, although it is mainly grown in the northern parts of the country. It is the fourth most widely cultivated vegetable after Tomato, Cabbage, and onions. Vegetable production is an important source of food, and income and a good crop to focus on for food security (Elum, Etowa, and Ogonda 2016). In recent times, Cucumbers production has become a lucrative activity for most people because of its high demand by all classes of people. Cucumber is widely grown and consumed all over the world as culinary vegetables (Cucumber Encyclopedia Britannica 2019). Cucumber production can enhance agricultural production, economic empowerment, and food security, (Adeoye and Balogun 2016).

Food Security is the state of having reliable access to a sufficient quantity of affordable nutritious food. The concept of food security has three main dimensions namely, available in large quantity for consumption, easy means to acquire and purchase food, and easy absorption and utilization of nutrients (Boadu 2024). Globally, food security is seen as a critical issue as it affects human health, well-being, and productivity. It is one of the Sustainable Development Goals (SDGs 2.1) which aims to “end hunger and ensure access to safe, nutritious and sufficient food for all people particularly the poor and the vulnerable, including infants, all year round by 2030. To ensure food security, sustainable agricultural practices are required. The agricultural sector is seen as an avenue to reduce food insecurity and serve as an employment opportunity for the youth (Boadu 2024).

These days, agriculture has become entrepreneurial and, modern technology-oriented. There is a need for youths to venture into agriculture. The young people have the characteristics that enhance agricultural productivity. They have the energy, skills, ready to take the risk, etc. The fact that it is one of the highly demanded vegetable crops, it needs able-bodied farmers for its production. Youth participation in agriculture is the active engagement of young men and women in the agricultural sector. These youths are competent citizens who have entrepreneurial skills in agriculture rather than passive recipients of service, (Darkey, Dzoemku, Okorley, Gyimah, & Bluwey 2014). To ensure food availability and stability, it is important that youths must participate actively in agriculture (Masa, Khan, and Chowa 2020). Ovwigho and Ifie (2009) observed that youth participation in agriculture in Nigeria is poor; they have the potential to be great farmers but lack interest. However, the economic development of any developing nation depends largely on its state of agriculture and farming community (Sakiluzzaman, Sarker, Rahman, Hasan, Baokun, Most, & Mukika 2018)

The following objectives guided the study;

- i. describe the socio-economic characteristics of youths involved in cucumber production in the area.
- ii. identify the roles play in cucumber production
- iii. determine the level of cucumber production in the area
- iv. determine the cost and returns of cucumber production
- v. identify the constraints to youth participation in cucumber production

Materials and Method

The study was carried out in Owerri Agricultural Zone in Imo State, Nigeria. Owerri Agricultural Zone is made of eleven LGAs namely Aboh Mbaise, Ahiazu Mbaise, Ezinaihitte Mbaise, Ikeduru, Mbartoli, Ngor-okpala, Ohaji/Egbema, Oguta, Owerri municipal, Owerri North and Owerri West.

The population of the study was made up of 185 registered youths involved in Cucumber production. Multi-stage sampling technique was used in the selection of five local government areas in the zone. The selected L.G. As are Aboh Mbaise, Ngor Okpala, Owerri West, Owerri North, and Mbaitoli. Ten (10) youths who engage in cucumber production were randomly selected from each of the five LGAs. Thus, a total of fifty (50) youths involved in cucumber production were randomly selected from the selected L.G. A. As areas. Primary data was collected using a structured questionnaire. Descriptive statistics such as means, frequency, and percentage were employed to analyze research questions 1, 2, 3, and 5. While inferential statistics was used to analyze research question 4.

Findings

Research Question 1: What are the socioeconomic characteristics of youths involved in cucumber production in the area?

Table 1: The socioeconomic characteristics of the youths involved in cucumber production in the study areas.

Age	Responses	Percentage %
Less than 30	4	8
31-40	22	44
41-50	20	40
50 and above	4	8
Total	50	100
Marital Status		
Single	8	16
Married	40	80
Divorced	2	4
Total	50	100
Qualification		
Primary Education	8	16
Secondary Education	20	40
Tertiary Education	22	44
Total	50	100
Occupation		
Farming	8	16
Trading	20	40
Teaching	10	20
Office work	12	24
Total	50	100
Monthly Income		
₦ 10,000- ₦ 20,000	8	16
₦ 21,000- ₦ 30,000	10	20
₦ 31,000- ₦ 40,000	10	20
₦ 41,000- ₦ 50,000	20	40
₦ 50,000 and above	2	4
Total	50	100
Household size		
1-3	8	16
4-6	20	40
7-9	12	24
10 and above	10	20
Total	50	100

Table I shows that the mean age of the respondent Youths was 31-40 years (44%), It also shows that 40 (80%) of the respondents were married. It was also found that the majority of the youths 22(44%) had tertiary education.

It was expected that middle-aged Youths would be more interested in participation in Cucumber production would result in sustainable solutions to food security.

The occupation of majority of the respondents were traders 20 (40%) The result equally revealed that most of them had a monthly income of 41000 - 50,000 (40%). It was also found that the majority of the youths had a household size of 4-6 persons (40%)

Research Question 2: What are the roles youths play in Cucumber production?

Table 2: The roles youth play in Cucumber production.

S/N	Questionnaire Item	SA	A	D	SD	ΣFX	X	Decision
1.	Land preparation	30	10	10	0	50		
		120	30	20	0	170	3.4	Agreed
2.	Planting improved cucumber seed	15	15	9	11	50		
		60	45	18	11	134	2.7	Agreed
3.	Weeding the cucumber plot	0	15	30	5	50		
		0	45	60	5	110	2.2	Rejected
4.	Fertilizer application	0	20	30	0	50		
		0	60	60	0	120	2.4	Rejected
5.	Operation of modern farm machinery	10	30	8	2	50		
		40	90	16	2	148	3.0	Agreed
6.	Control of pests and disease.	30	15	2	3	50		
		120	45	4	3	172	3.4	Agreed
7.	Processing of harvested cucumber fruit	1	9	20	20	50		
		4	27	40	20	91	1.8	Rejected
8.	Storage of harvested cucumber plant	10	30	5	5	50		
		40	90	10	5	145	2.9	Agreed
9.	Transportation of harvested cucumber	15	25	7	3	50		
		60	75	14	3	152	3.0	Agreed
10.	Marketing of harvested cucumber	40	7	3	0	50		
		160	21	6	0	187	3.7	Agreed

The respondents (3.4) agreed that land preparation was carried out by the youths, and 2.7 accepted that youths were involved in planting of improved seed. 3.4 accepted that youths control pests and diseases, and 2.2 of the respondents rejected that weeding is carried out by youths. 2.4 of the respondents rejected that fertilizer application was carried out by youths. The respondents (3.0) agreed that youths take part in the transportation of harvested cucumber while 3.7 also agreed youths are involved in the marketing of cucumber.

Research Question 3: What are the levels of production of Cucumber in the area?

Table 3: Levels of production of cucumber in the area.

S/N	Questionnaire Item	SA	A	D	SD	ΣFX	X	Decision
1.	Cucumber is produced on a small scale (5-10kg)	10	30	5	5	50		
		40	90	10	5	145	2.9	Agreed
2.	Cucumber is produced on a medium scale (11-20kg)	2	40	8	0	50		
		8	120	16	0	144	2.9	Agreed
3.	Cucumber is produced on a large scale (21 kg and above)	15	7	25	3	50		
		60	21	50	3	134	2.7	Agreed
4.	Few youths in Owerri zone engage in cucumber production.	4	5	2	40	50		
		16	15	4	40	75	1.5	Reject

Table 3 shows that 2.9 accepted that cucumber is produced in a small scale (5-10kg), also, 2.9 accepted that cucumber is produced in a medium scale (11-20g), while 2.7 accepted that cucumber is produced in a large scale (20kg and above), but 1.5 rejected that few youths in Owerri zone engage in cucumber production.

Research Question 4: What is the cost and returns of Cucumber production in the areas.

Table 4: Cost and Returns in naira spent in Cucumber production

Variable cost items	Quantity	Amount (₦)
Seed	700g/Plot	5000
Fertilizer	25kg	7050
Weeding		6000
Planting		7000
Pesticide	2 litres	3000
Staking		5000
Total Variable cost (TVC)		₦33050
Fixed Cost Item		
Depreciation on equipment's		21,000
Total Fixed Cost (TFC)		21,000
Total Cost (TVC + TFC)		54050
Revenue		
Cucumber output	781kg/plot	
Unit Price per kg	150/kg	117150
Total Revenue		117150
Gross margin (Gm) = TR-TVC		84100
NET INCOME (GM-TFC)		63100
Return on naira spent (RNS) = $\frac{NI}{TC}$		1.16

From the findings, Total variable cost (TVC) is N33050, Total Revenue (TR) is N117150, Gross margin (GM) is N84100 and Net income is N63100 also returns on naira spent (RNS) is 1.16. This means that for every ₦1 spent yielded a profit of ₦1.16 which means that cucumber is a profitable business for youth to venture into.

Research Question 5: What are the constraints to youth participation in Cucumber productions in the area?

Table 5: showing constraints to youth participation in Cucumber production.

S/N	Questionnaire Item	SA	A	D	SD	ΣFX	X	Decision
1.	Land tenure system	30	10	5	5	50	3.3	Accept
		120	30	10	5	165		
2.	Pest infestation	10	20	10	10	50	2.6	Accept
		40	60	20	10	130		
3.	Disease infestation	3	20	20	7	50	2.4	Reject
		12	60	40	7	119		
4.	Low access to agricultural credits	30	10	5	5	50	3.3	Accept
		120	30	10	5	165		
5.	Poor agricultural extension service	25	15	7	3	50	3.2	Accept
		100	45	14	3	162		
6.	Poor agricultural storage	30	15	5	0	50	3.5	Accept
		120	45	10	0	175		
7.	Low yield	40	10	0	0	50	3.8	Accept
		160	30	0	0	190		
8.	Poor marketing	5	0	5	35	50	1.5	Reject
		20	0	10	45	75		
9.	Lack of interest among the youth	3	3	4	40	50	1.4	Reject
		12	9	8	40	69		

Table 5 shows that 3 accepted that the land tenure system is a constraint to cucumber production, also, 2.6 accepted that pest infestation is also a problem, but 2.4 rejected that disease infestation is not a problem in cucumber production. Also, 3.3 accepted that low access to agricultural credit is a constraint while 3.2 accepted that poor agricultural extension service is a constraint. Also, 3.5 accepted that poor agricultural storage facilities are a constraint while 3.8 accepted that low yield is a constraint, but 1.5 rejected that poor marketing is not a problem, also 1.4 rejected that lack of interest among youth is not a problem.

Discussion of Findings

The findings on research question 1, which sought to find out the socioeconomic characteristics of the youths who participate in cucumber production in Owerri Agricultural zone revealed that the majority of the youths (44%) are between the ages 31-40 years old. It also shows that majority of the youths are married and have tertiary education. It also shows that the youths engage mainly in trading and their monthly income is between #41,000 - #50,000 and their household size is 4-6 persons. Cucumber production is a very lucrative business since it reaches the maturity stage rapidly (Okpani, Orji, and Umekwe 2023)

From research question 2, which sought the roles youths play in cucumber production The results showed that out of ten roles listed, the respondents agreed that they carry out six such as land preparations, planting improved Cucumber Seed, operating modern farm machinery, controlling of pest and diseases, transportation of harvested cucumber, marketing of the produce. The respondents rejected that the youth carried out the following roles weeding, fertilizer application, and processing of harvested cucumber.

Findings from research question 3 on the level of cucumber production in Kg, revealed that youth produce cucumber in medium scale. This finding differs from that of Adeoye and Balogun (2016) who found out that youth produce cucumber in small scale. The findings from research question 4 on cost and returns in naira spent on cucumber production show that the profit made in cucumber production is higher than the cost of production. This finding is in line with the views of Adeoye and Balogun (2016) and Okpani, Orji, and Umekwe (2023) who opined that cucumber is a lucrative business for youths.

The findings of research question 5, reveal that out of the nine items listed as constraints, six were accepted namely land tenure system, pest infestation, low access to agricultural credit, poor agricultural extension services, poor agricultural storage, and low yield. These findings are in tandem with the findings of Kehinde and Eforuoku (2016) who found that inadequate credit facilities, inadequate extension services, and poor agricultural storage facilities are constraints to youth participation in agriculture. Three items namely disease infestation, poor marketing, and lack of interest among youths were rejected as constraints to youth participation in cucumber production in the study area. This is in line with the findings of Ovwigho and Ifie (2009) that youths lack interest in agriculture.

Conclusion

Considering the findings from data analyzed, interpretation and discussion with relevant literature, it was concluded that Youths between the ages of 31 and 40 are engaged in Cucumber production. The Majority of these youths are married and 44% of them had tertiary education. Youth participation can be enhanced through the provision of sufficient improved seeds at subsidized prices, and the provision of free interest loans /low-interest loans to genuine youths who are involved in cucumber production. Major constraints to youth participation identified include land tenure system, pest infestation, low access to agricultural credit, and poor agricultural extension services. It was concluded that for every #1 spent a profit of #1.16 was made which means that cucumber is a profitable business for youths. The study concluded that youth participation in cucumber production will result in sustainable agricultural production and food security.

Recommendation

Government through Ministry of Agriculture and Natural Resources should organize seminars, workshops and training for youths interested in Agriculture to enable them acquire knowledge and skills in cucumber production. Agricultural credits should be made available to the youths at low or zero interest rate. Seeds and other farm inputs should be made available at subsidized prices.

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