

## Analysis of Rural Farmers Participation in Yam Production in Ogba/Egbema/Ndoni Local Government area of Rivers State

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### **Abstract**

*The study was centered on the analysis of rural farmers' participation in yam production in Ogba/Egbema/Ndoni Local Government Area of Rivers State, Nigeria. The objectives of the study were to: i) identify the existing yam enterprises in ONELGA; ii) examine farmers' level of participation in such yam enterprises; iii) examine the level of awareness of the economic viability of yam enterprise by the farmers; and iv) ascertain the constraints to yam production in the area of study. A total of 180 respondents, selected using stratified and simple random sampling techniques. Data obtained were analyzed, using percentages, mean scores and Analysis of variance (ANOVA) for test of significance. From the findings, it showed that majority (66%) of the respondents/farmers were middle aged (47 years old), married (41%) women, whose education qualification did not exceed secondary education (84%). It also showed that among yam enterprises identified in ONELGA, that: the marketing of raw yam tubers (32%), purchasing of yam tubers and marketing them as roasted yams (31%), and purchasing of yam tubers and selling them as fried or porridge yams (20%) were the major existing yam enterprises in the area. While the actual production of yam (ware and minisette, 11%), hence participation of the farmers in the area from the findings, are concentrated in marketing and consumption activities of yam products (M=2.7). The study revealed that there was high awareness in the area of production of ware yam for family food security (M=49), Environmental conditions in ONELGA being suitable for yam production (M=2.93), and on marketing of yam products for family survival (M=2.92). While there were very low awareness on the core determinants of participation in yam production, such as: production of yam minisette as a lucrative business (M=2.06); Yam dealers obtaining loans from Bank of Agriculture (M=1.19); Production of yam minisette for family food security (M=1.42); and Return per naira from yam production being moderate compared to its cost (M=1.87) among others. Finally, the result showed in the degree of constraint that: Insecurity nature of the area (M=3.71); Lack of accessible credit facilities (M=3.70); High cost of production (M=3.61); Lack of incentive for farmers (M=3.55); Perception of yam enterprise as a slow and poor business (M=3.26); Stealing of yam by poachers (M=3.21); and Problem of land acquisition in the area (M=3.19) constitute the most serious constraints in yam production in the area of study. Therefore, the study recommended that farmers in the area including men, women and youths should be meaningfully encouraged through grants and soft loans to engage in real yam production by the government, non – governmental organizations as well as local leaders and the churches, and that adequate awareness of the profitability of yam enterprises,*

*through the existing extension agencies like the Green River Project of the Nigerian Agip Oil Company, Total E&P Rural Sustainable Development and the Department of Agricultural Education of the Federal College of Education (Technical), Omoku should be consciously created in the area.*

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**Key words:** *Analysis, Rural farmers, Participation, Yam, Production.*

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## **Introduction**

Yam (*Discorea Spp*), cultivation began 11,000 years ago in Africa as an important tuber crop in Nigeria where it is produced as food and cash crop (Asumugha, Njoku, Okoye, Aniedu, Ogbonnaya & Nwosu, 2009). Yam is a perfect staple food appreciated for its taste and cultural role in West Africa, especially in Nigeria as the world largest producers of yams, with annual production estimated at 26.587 million metric tons (Fasasi, 2006). Yam is regarded as a socio-cultural crop and is becoming expensive in urban areas as production has not kept pace with population growth leading to demand exceeding supply (Kushwala & Polycarp, 2001). A recent study on yam has shown that absolute level of production in West Africa and the World has remained static for three decades (Scott, Rosegrant & Bokanga, 2000). The static or declining trend may not be unconnected with production resources which are not being efficiently utilized leading to low productivity (Fasasi, 2006).

According to Kalu (1989), in: Odinwa, Alali, Abali, Ahiakwo, and Odinwa, (2011) yam is high in starch like most tuber and root crops. Yam tuber can add value when processed into crude flour by drying thin slices in the sun, then pounding and grinding them into flour, thereby empowering those that are engage in the processing. Yam enterprise can provide job opportunities to the producers, the processors and the marketers as means of livelihood, given the necessary managerial attention required at each stage.

In West Africa they are major sources of income and have high cultural value. They are used in fertility and marriage ceremonies, and a festival is held annually to celebrate its harvest. Consumer demand for yam is generally very high in this sub-region and yam cultivation is very profitable despite high production costs.

It is propagated by tuber which is also the edible part consumed by man and animals, which lent to its scarcity and soaring cost in planting season. However, in recent times smaller portion (pieces) of yam have been used for breeding purpose and have been found useful. This portion is called yam minisett, which Anyanwu, (2002) observed was introduced to the Nigeria farmers by the National Root Crop Research Institute (NRCRI) Umudike in 1975. The method involves essentially the cutting of yam tuber to produce as many minisetts as possible (about 2cm thick with some portion of the cuticle attached). The minisett develops to seed yam which is now used to produce ware yams for consumption and other industrial uses in subsequent season.

Yam generally, needs enough nutrients for growth and development, which many substances such as poultry and rabbit manure, cattle dung, palm bunch ash, etc have been tested and proved to be useful and friendly alternatives to synthetic fertilizers. It has also been proved that Ogba/Egbema/Ndoni Local Government Area fall within the rain forest ecological zone, which is favourable to yam and other tuber crops' production (Odinwa, et al, 2011). There are large areas of land both swamp and upland that are lying fallow and which can be used for this purpose in the area.

Rural farmers' participation in this context defines the farmers' involvement in yam production, processing and marketing of yam products as a means of livelihood.

Oyebamiji and Adekola (2008), pointed out that participation is characterized by:

- Choice and decision on the part of the participating farmers and not a mere compliance with instruction and should not involve the use of force;
- People/farmers organizing themselves into groups to solve their common problems, through gaining access to information and resources they need and learning how to manage them;
- Men and women, as partners in progress and as agents of change, and
- Participation is seen as both an end and a means to an end.

### **Statement of the Problem**

Participation in an enterprise like yam production is dependent on the cost involved and the expected benefits in addition to adequate awareness, provided the innovation conforms to the custom and culture of the people. Studies have shown that rural farmers play significant roles in yam production in Nigeria as a whole. Ogba/Egbema/Ndoni is predominantly occupied by a large population of farmers and with vast area of land suitable for yam production.

There is evidence of high demand for yam and its' products within and outside the area at all seasons without a corresponding supply to meet the demand; investment capital is not too high as to scare farmers away from venturing into the production, the cultural practices in yam production, apart from the staking, are manageable and has a gestation period ranging from eight to twelve months, depending on the variety.

According to Odinwa, et al (2011), yam is high in starch like most tuber and root, and unlike cassava, yam are eaten as, boiled, baked or fried. Yam is also processed into crude flour by drying thin slices in the sun, then pounding and grinding them into flour. The flour is used in West Africa for fu-fu. Yam can be processed into instant flakes producing a food similar to instant potato. It can also be made into fried chips.

Most starch industries use yam as one of their important and primary raw materials. It provides job opportunities to both the producers and the marketers. It also provides income for dealer's improvement and for investment expansion. The peels serve as feed to livestock such as pigs, goats, rabbit etc and as good component of farm yard manure (FYM). It is used as a laboratory crop for scientific investigations (Odinwa, et al, 2011).

Most of the communities in the area have occasions to celebrate yam as a king among crops.

Going by the enormous advantages so enumerated rural farmers in the area of study are expected to participate courageously and actively in yam production and marketing as serious yam dealers, especially now that the awareness on its socio-economic importance and comparative advantages have been unveiled by the extension agencies operating in the area. But this is not so. In a place where majority of the population are farmers, most yam tubers and yam flours sold at the major markets and consumed in ONELGA (Akabuka, Erema, Omoku, Egbema, etc.) are usually brought from outside the Local Government Area. Could it be that farmers in ONELGA are not actively participating in yam production? Or could it be that the necessary awareness on its economic viability has not been created. Who are the farmers? What actually are the reasons for low or no production of yams in the area? What should be done to make yam production an economic venture in the study area?

Base on these inspiring questions the study was slated to: find out the existing yam enterprises in ONELGA, investigate farmers' level of participation in such yam enterprises, examine the level of awareness of the economic viability of yam enterprise by the farmers, and find out the constraints to yam production in the area of study.

Three null hypotheses were raised to guide the objectives study.

- Ho<sub>1</sub>:** There is no significant difference among the respondents (men, women and youths) participation in yam production in ONELGA
- Ho<sub>2</sub>:** Awareness of the economic viability of yam enterprise does not differ significantly among the respondents (men, women and youths).
- Ho<sub>3</sub>:** There is no significant difference in the constraints to participation in yam production among the respondents in the area.

### Methodology

The study adopted a survey research approach, using twelve (12) communities from ONELGA, four (4) each from Ndoni clan, Egbema clan and Ogba clan through random techniques. From each of the 12 communities, fifteen respondents were selected by stratified and simple random technique to give a total sample size of 180 respondents and used for the study.

Primary data were collected through the administration of a structured questionnaire and interview schedules. The questionnaires were appropriately designed in a four point Likert type rating scale. They were timely distributed to the respondents individually in their various communities (business centres). Later the questionnaires were followed up and retrieved with the assistance of a few enumerators engaged for the purpose of questionnaire administration.

In this study, both descriptive and inferential statistics were employed. Descriptive statistics such as percentage and weighted mean scores derived from Likert rating scale were used. The inferential statistics used was the analysis of variance (ANOVA). Objectives 1, was achieved using percentages, while objective 2, 3 and 4 were achieved using mean statistics. The inferential statistics used was to ascertain if the views of the respondents (men, women and youth) differed significantly. The results were presented in tables for clarity of purpose.

### Result and Discussion

The result in Table 1 showed that the respondents participate more on the marketing of raw yam tubers with a grand mean of (M= 2.72), followed by those who purchase raw tubers and sold as roasted yams (M=2.6) and those who purchase raw tubers and sold as fried/porridge yams (M=2.23). It revealed a very low participation in production of ware and seed yams in the area (M=1.46 and M= 1.16, respectively). The result also showed that participation in yam processing into flour and its marketing are very low in the area ((M=1.6 and M=1.07, respectively).

**Table 1: Mean distribution of respondents on the level of rural farmer's participation in yam enterprises in ONELGA**

Yam Enterprises	Men N = 60	Women N = 60	Yout hs N = 60	Gran d Mean	Remar ks
Production of ware yam	1.82	1.44	1.12	1.46	Very low
Production of seed/minisette yam	1.34	1.14	1.00	1.16	Very low
Processing of tubers to yam flour and sale	1.02	1.46	1.00	1.16	Very low
Marketing of yams (raw tubers/seed yams)	2.22	3.67	2.26	2.72	High

Production and marketing either of ware yam or seed yam	1.82	1.44	1.12	1.46	Very low
	1.00	1.00	1.00	1.00	Very low
Produce and sales of fried/porridge yams					low
Purchase and sales of fried/porridge yams	1.24	3.24	2.20	2.23	Low
	1.00	1.00	1.00	1.00	Very low
Produce and sales of roasted yams					low
	1.00	1.21	1.00	1.07	Very low
Purchase and sales of yam floor only					low
Purchase and sales of roasted yams	1.00	3.56	2.23	2.26	Low

**Source: Field survey, 2016** **Cut-off point = 2.5**

The findings showed a very low participation in actual sense of production of ware and seed yams in the area. This is a strong indication that over 95% of the inhabitants of ONELGA are blatant consumers who depend virtually on yam products from outside the area for their consumption and trading for survival. This could be attributed to the insecurity nature, lack of credit facilities, problem of land acquisition etc. in the area. This claim is supported by Ellis (1992), who observed that peasants produce under very high levels of uncertainty induced by natural hazards (weather, pests, diseases, natural disasters); market fluctuations; and social uncertainty (insecurity associated with control over resources, such as land tenure and state interventions, and war). These conditions according to him pose risks to peasant production and make farmers very cautious in their decision making.

The ANOVA result on rural farmer's participation in yam production in ONELGA as in (Table 2), showed that  $f - \text{cal}$  (2.10) is less than  $f - \text{critical}$  (3.35), leading to the acceptance of the null hypothesis ( $H_{01}$ ), meaning that the participation of the respondents (men women and youths) in yam production in ONELGA are the same.

**Table 2: ANOVA result on rural farmer's participation in yam enterprises in ONELGA**

Sources of variance	Sums of square	Degree of freedom	MS	F-calculated	F-Critical	Remark
B/W Group	2.38	2	1.19	2.10	3.35	
W/Group	15.33	27	0.57			N/S
Total	17.71	29				$P > 0.05\%$

**Source: Field survey, 2016**

**N/S means not significant at  $P > 0.05\%$**

The t-test result showed that rural farmer's (men, women and youths) participation in various yam enterprises identified in ONELGA are the same. This situation demands interventions by government and non-governmental organizations as well as community leaders and churches to encourage rural farmers' participation in yam production and value-chain addition.

From the result in Table 3, it shows that: There was high awareness on production of ware yam for family food security with a grand mean of ( $M=3.49$ ); Environmental conditions in ONELGA are suitable for yam production ( $M=2.93$ ); and marketing of yam products for family survival ( $M=2.92$ ).

The findings however showed that: there was low awareness on production of yam miniset as a lucrative business ( $M=2.06$ ), and very low awareness on the following aspects: Yam dealers can obtain loan from Bank of Agriculture ( $M=1.19$ ); Certain yams are use for



industrial (medicinal) purpose (M=1.22); processing of tubers into flour is a good business (M=1.35); Production of yam minisette is for family food security (M=1.42); Production of yam is associated with poverty (M=1.64); Production of ware yam is a lucrative business to make money (M=1.84); Production of yam is a show of wealth (M=1.86); and return per naira from yam production is moderate compared to its cost (M=1.87).

**Table 3: Mean distribution on the Level of Awareness of the Economic Viability of Yam Enterprise by the Rural Farmers in ONELGA**

Level of Awareness	Men N = 60	Women N = 60	Youths N = 60	Grand Mean	Remarks
Production of ware yam is for family food security	3.54	3.72	3.23	3.49	High
Production of ware yam is a lucrative business to make money.	2.12	2.18	1.21	1.84	Very Low
Production of yam minisette is for family food security.	1.82	1.33	1.12	1.42	Very Low
Production of yam minisette is a lucrative business.	2.10	2.97	1.12	2.06	Low
Production of yam is associated with poverty.	1.14	1.12	2.66	1.64	Very Low
Processing of tubers into flour is a good business.	1.15	1.78	1.11	1.35	Very Low
Marketing of yam products can survive a family.	2.78	3.66	2.34	2.92	High
Production of yam is a show of wealth.	2.16	2.10	1.32	1.86	Very Low
Return per naira from yam production is moderate compared to its cost.	2.24	2.26	1.16	1.87	Very Low
Exporters of yam products can make good living from it.	1.74	1.43	1.22	1.46	Very Low
Certain yams are use for industrial (medicinal) purpose.	1.20	1.00	1.46	1.22	Very Low
Yam dealers can obtain loan from Bank of Agriculture.	1.34	1.22	1.00	1.19	Very Low
Environmental conditions in ONELGA are suitable for yam production	2.97	3.36	2.47	2.93	High

**Source: Field survey, 2016**

**Cut-off point = 2.5**

The findings in (Table 3) show that the awareness in ware yam production for family food security and suitable environmental conditions for yam production did not reflect on the respondents' participation in real yam production in the area. But the awareness on marketing of yam products for family survival reflected a high participation in the area, which also points to the fact that the inhabitants of ONELGA are concentrated in consumption of yam than in its production.

The findings however showed that: there was very low awareness on the determinants of participation in yam production, such as: production of yam minisette as a lucrative business, Yam dealers obtaining loans from Bank of Agriculture, Certain yams being used for industrial (medicinal) purpose, etc. This low awareness could be attributed to inadequate or inefficient extension information and practice on yam production and its value addition in the area. Since Asomugha and Chinaka (1998) indicated that contact with extension agency and availability of inputs such as minisett dust and fertilizer impact positive influence on the adoption of the

yam minisett technique by farmers.

The ANOVA result on the level of awareness of the economic viability of yam enterprise by the rural farmers in ONELGA in (Table 4), showed an  $f$  – cal of (1.34) which is less than  $f$  – critical (3.26), leading to the acceptance of the null hypothesis ( $H_{02}$ ), which states that, the awareness of the economic viability of yam enterprises does not differ significantly among the respondents (men, women and youths), implying that the awareness of the respondents on the economic viability of yam enterprises are the same.

**Table 4: ANOVA result on the level of awareness of the economic viability of Yam Enterprise by the Rural Farmers in ONELGA**

Sources of variance	Sums of square	Degree of freedom	MS	F-calculated	F-Critical	Remark
B/W Group	1.85	2	0.93	1.34	3.26	
W/Group	24.83	36	0.69			N/S
Total	26.68	38				P > 0.05%

**Source: Field survey, 2016**

**N/S means not significant at  $P > 0.05\%$**

Test of significance on the level of awareness of the economic viability of yam enterprise by the rural farmers in ONELGA (Table 4) revealed that rural farmers in ONELGA have equal level of low awareness on the economic viability of yam enterprise and demands that something should be done extension wise in order to beef up the consciousness of the rural farmers, especially in yam production and processing in the area.

The result in Table 5 revealed in their degrees of constraint that: Insecurity nature of the area with the grand mean of ( $M=3.71$ ); lack of accessible credit facilities ( $M=3.70$ ); high cost of production ( $M=3.61$ ); lack of incentive for farmers ( $M=3.55$ ); perception of yam enterprise as a slow and poor business ( $M=3.26$ ); stealing of yam by poachers ( $M=3.21$ ); and problem of land acquisition in the area ( $M=3.19$ ) constitute the most serious constraints in yam production in the area study.

Also serious as exposed by the study were: High cost of transportation of both input and output ( $M=2.89$ ); inadequate information about yam enterprise as a business ( $M=2.86$ ); procedures involve in the production as rigorous ( $M=2.82$ ); low returns from the inputs employed ( $M=2.76$ ); inability to form yam producers cooperatives ( $M=2.66$ ); and the seasonality of the products affecting its farming and supply ( $M=2.58$ ).

However, the result showed that the following factors were not considered as serious constraints to participation in yam production in the area. They are: gestation period of yam is long and can discourage investment ( $M=2.14$ ); soil condition of the area (ecological zone) is not suitable for yam ( $M=1.43$ ); pests and diseases problem ( $M=1.30$ ); and bulkiness and perishability of the tubers discourage its production ( $M=1.19$ ); as well as: The custom of ONELGA restricting yam production to only men; Government policies not being favourable for the production of yam; Demand for yam in the area being low; and Supply being more than the demand in the area with a common grand mean of ( $M=1.0$ ).

**Table 5: Mean distribution on the Constraints to Rural Farmers' Participation in Yam Production in ONELGA**

<b>Constraints to Participation</b>	<b>Men N = 60</b>	<b>Women N = 60</b>	<b>Youths N = 60</b>	<b>Grand Mean</b>	<b>Remarks</b>
Problem of Land acquisition in the area	2.87	3.44	3.26	3.19	Accepted
Soil condition of the area (ecological zone) is not suitable for yam.	1.51	1.32	1.46	1.43	Rejected
Procedures involve in the production as rigorous	2.12	2.87	3.47	2.82	Accepted
High cost of Production	3.61	3.47	3.75	3.61	Accepted
Perception of yam enterprise as a slow and poor business	3.13	2.98	3.67	3.26	Accepted
The custom of ONELGA restricts yam production to only men.	1.00	1.00	1.00	1.00	Rejected
Low returns from the inputs employed	2.56	2.68	3.04	2.76	Accepted
Inadequate information about yam enterprise as a business	2.83	2.98	2.77	2.86	Accepted
Gestation period of yam is long and can discourage investment	1.64	1.83	2.96	2.14	Rejected
Lack of incentive for farmers	3.55	3.43	3.67	3.55	Accepted
Lack of accessible credit facilities	3.67	3.66	3.78	3.70	Accepted
Pests and diseases problem	1.23	1.47	1.21	1.30	Rejected
Unavailability of labour	1.12	1.00	1.33	1.15	Rejected
Stealing of yam by poachers discourage the production	3.78	3.23	2.59	3.21	Accepted
Government policies are not favourable for the production of yam	1.00	1.00	1.00	1.00	Rejected
Demand for yam in the area is low	1.00	1.00	1.00	1.00	Rejected
Supply is more than the demand in the area	1.00	1.00	1.00	1.00	Rejected
High cost of transportation of both input and output	2.57	3.33	2.76	2.89	Accepted
Bulkiness and perishability of the tubers discourage its production	1.12	1.00	1.45	1.19	Rejected
Seasonality of the products affects its farming and supply	2.52	2.54	2.68	2.58	Accepted
Insecurity nature in the area	3.60	3.87	3.67	3.71	Accepted
Inability to form yam producers cooperatives	2.77	2.73	2.47	2.66	Accepted

**Source: Field survey, 2016****Cut-off point = 2.5**

The result in Table (4.7) revealed in the of degree of constraint that: Insecurity nature of the area with the grand mean of (M=3.71); Lack of accessible credit facilities (M=3.70); High cost of production (M=3.61); Lack of incentive for farmers (M=3.55); Perception of yam enterprise as a slow and poor business (M=3.26); Stealing of yam by poachers (M=3.21); and Problem of land acquisition in the area (M=3.19) constitute the most serious constraints in yam production in the area of study.

Also serious as exposed by the study were: High cost of transportation of both input and output (M=2.89); Inadequate information about yam enterprise as a business (M=2.86);



Procedures involve in the production as rigorous (M=2.82); Low returns from the inputs employed (M=2.76); and the seasonality of the products affecting its farming and supply (M=2.58).

These factors exposed by the study are serious and have negative impact to participation in real yam production, hence a consequential low productivity of yam products from the area of study and continuous dependency on yam products (tubers) imported from outside.

But when these influential determinants are positive in a fair political atmosphere, Nnadi, and Akwizu (2008) noted that rural participation would be encouraged and once mass participation is achieved and sustained, the multiplier effects would be experienced in the following areas, such as: Increased agricultural production and improved productivity, Value chain addition through processing of farm outputs, Increased income for expansion and extension of farm enterprises, Increased employment opportunities in rural areas, Increased savings by farmers, Improved standard and healthy living of farmers, Reduction in social vices, Reduction in rural-urban migration, Relative community peace, etc.

The ANOVA result on constraints to rural farmers' participation in yam production in ONELGA as shown in (Table 4.8), revealed an  $f$  – cal of (0.15) which is less than  $f$  – critical (3.14), leading to the acceptance of the null hypothesis ( $H_{03}$ ), which states that, 'there is no significance difference in the constraints to participation in yam production among the respondents in the area, meaning that the constraints to the respondents' participation in yam production in ONELGA are the same in every aspect.

**Table 4.8: ANOVA result on the constraints to Rural Farmers' Participation in Yam Production in ONELGA**

Sources of variance	Sums of square	Degree of freedom	MS	F-calculated	F-Critical	Remark
B/W Group	0.33	2	0.16	0.15	3.14	
W/Group	69.96	63	1.11			N/S
Total	70.29	65				$P > 0.05\%$

Source: Field survey, 2016

N/S means not significant at  $P > 0.05\%$

Test of significance on the constraints to rural farmers' participation in yam production in ONELGA as shown in (Table 4.8), revealed that the constraints to the respondents' (men, women and youths) participation in yam production in ONELGA are similar in every aspect. This implies that the same factors affecting men, also affect women and youths as regards yam enterprises in the area. Therefore, a holistic approach is required to tackle these challenges of yam production in the area.

### Conclusion

From the findings, it showed that participation of farmers in yam production in the area are concentrated in marketing and consumption activities of yam products brought from outside and not on local production. The study attested that there was high awareness in the area of production of ware yam for family food security, environmental conditions in ONELGA being suitable for yam production, and on marketing of yam products for family survival. But the awareness on those variables has not reflected on the actual participation in yam production in the area.

The result showed among others that: Insecurity nature of the area; Lack of accessible credit facilities; High cost of production; Inadequate information about yam enterprise as a business; Lack of incentive for farmers; Perception of yam enterprise as a slow and poor business;

Stealing of yam by poachers; and Problem of land acquisition constitute the most serious constraints to participation in yam production in the area.

### Recommendations

Based on the findings, this study recommends the following:

1. Farmers in the area including men, women and youths should be meaningfully encouraged through grants and soft loans to engage in real yam production by the government, non – governmental organizations as well as local leaders and the churches,
2. Adequate awareness of the profitability of yam enterprises, through the existing extension agencies like the Green River Project of the Nigerian Agip Oil Company, Total E&P Rural Sustainable Development and the Department of Agricultural Education of the Federal College of Education (Technical), Omoku should be consciously created in the area,
3. A holistic approach involving the ministries of agriculture, extension agencies, local leaders and the rural farmers should be employed to tackle the current challenges in yam production in the area,
4. Farmers should be motivated and helped to form and participate actively in farmers cooperatives for their mutual benefits.

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