



CONSTRAINTS OF ORGANIC FARMING TECHNOLOGY AMONG SMALL-SCALE VEGETABLE FARMERS IN SOUTH-SOUTH ZONE OF NIGERIA

¹Okonkwo-Emegha, K., ²Okafor, I. P. and ¹Isibor, C. A.

¹Department of Agricultural Economics and Extension,
Nnamdi Azikiwe University Awka, Nigeria

²Department of Cooperative Economics and Management,
Nnamdi Azikiwe University Awka, Nigeria

Corresponding Authors' E-mail: emeghakate@gmail.com **Tel.:** 08020379447

ABSTRACT

The survey examined constraints of organic farming technologies among small-scale vegetable farmers in South-South zone of Nigeria. A multistage sampling technique was employed to select the study location and respondents. Data were collected from 480 small-scale organic vegetable farmers using structured questionnaire. Data obtained was analyzed using descriptive statistics. The results revealed that majority (93.00%) of organic fluted pumpkin farmers were challenged with inadequate finance, 92.80% were faced with shortage of organic materials, 86.10% with poor awareness, 72.40% faced poor market access and slightly more than half (51.10%) were constrained with poor willingness to pay for the material. It was concluded that the most serious constraints to organic fluted pumpkin production in the study area were inadequate finance, shortage of organic materials, poor awareness, poor market and poor willingness to pay for the material. The study therefore, recommended that cheap loans should be granted to organic fluted pumpkin farmers by the cooperative societies and bank of Agriculture (BOA) through adequate Government policy interventions to allow improvement in their productivity, profit, and ensure enterprise sustainability.

Keywords: Constraints, Farmers, Organic farming, Small-scale, Technology, Vegetable.

INTRODUCTION

Organic farming is the use of rich natural fertilizer to maximize biological activity and maintain long-term soil health. It protects the health of soil ecosystems and as well as reduces all forms of pollution that may be generated from agricultural practices and maintain vital environmental qualities for people living in the area (Food and Agriculture Organization [FAO], 2006). Organic farming reduces external inputs by refraining from the use of chemical fertilizers, pesticides and pharmaceuticals but depends on natural processes and nutrient cycles related to the environment (Kutama *et al.*, 2013; and Gavino, 2015). Organic production depends mainly on natural system and cycles, cyclic flow of nutrients, on- farm agronomic, biological and mechanical methods such as crop rotation, crop residues, animal manure, off-farm organic waste, compost and green manure (FAO, 2006; and Ndungu *et al.*, 2013).

Organic farming technology is considered as a lasting solution to environmental problems that are related to food safety and agriculture. However, organic farmers adopt conserve resources through adopted practices to enhance biodiversity, promote ecosystem that can lead to increased food and sustainable production (Sijuwade, 2014).

MATERIALS AND METHODS

The Study Area

The study was carried out in South-South zone of Nigeria. The major part of this zone is dominated by the Niger Delta Region. The zone is made up of six (6) States out of the 36



States of the Federal Republic of Nigeria. The six (6) States were Akwa- Ibom, Bayelsa, Cross River, Delta, Edo, and Rivers States. The zone occupies the base of River Niger and its tributaries that empty into the Atlantic Ocean, through the Gulf of Guinea (Ubokudom & Idiong, 2016). The States in the zone are usually identified as the oil producing States. The region has been known as the topmost economic resources contributor to Nigeria when crude oil was first discovered in large quantity at Oloibiri in Bayelsa State.

Sampling Technique and Sample Size

A multistage random sampling technique was adopted in the selection of States, agricultural zones, local government areas (LGAs), communities and respondents. In the first stage, 50% of the States, that is, three (3) States in the South-South were randomly selected. These were Cross River, Delta and Rivers States. In the second stage, 50% of zones in each of the selected States were randomly selected. This gave two (2) zones each, giving a total of six (6) agricultural zones that were randomly selected. In the third stage, 25% of LGAs from each of the selected agricultural zones were randomly selected. This gave four (4) LGAs each, giving a total of 24 LGAs. In the fourth stage, from each of the selected LGAs four (4) communities were randomly selected, giving a total of 96 communities. In the final stage, from each of the selected communities, five (5) respondents each were randomly selected giving a total of 480 respondents (Table 1) that were selected for the study.

Table 1: Sampling Frame and Size Selection Plan of the Study

Agricultural Zone	LGAs	Communities	Sample Frame	Sample Size
Cross River 3(2)	2(4)	8(4)	32(5)	160
Delta 3(2)	2(4)	8(4)	32(5)	160
Rivers 3(2)	2(4)	8(4)	32(5)	160
Total 9(6)	24	96	480	480

Method of Data Collection

Data was collected using interviewer and administered questionnaire consisting of structured questions relating to the constraints faced by small-scale vegetable farmers.

Analytical Techniques

All data generated was analyzed using descriptive statistics (tables, frequency and percentages).

RESULTS AND DISCUSSION

Production Constraints of the Farmers

Inadequate finance to fund organic fluted pumpkin production is one of the major constraints confronting the farmers. Majority of the respondents (93.00%) agreed that inadequate finance was a problem in organic production of fluted pumpkin. This result is in line with the findings of Ndubueze-Ogaraku (2017) that one of the major problems facing fluted pumpkin production was insufficient capital and also contributes to low profit.

Shortage of organic material was identified as one of the constraints facing the farmers in fluted pumpkin production. Majority of the respondents (92.8%) indicated that shortage of organic material was their major constraints in organic fluted pumpkin production. The result showed that inadequate use of organic material leads to poor yield thereby reducing the profit of the farmers. This result is in line with the report of Bologi (2012) that small and marginal



cultivators have difficulties in getting the organic manures compared to the chemical fertilizer which can be bought easily.

Poor awareness was shown as one of the constraints facing the farmers in organic production. Majority of the respondents (86.1%) reported poor awareness of the technologies as their major problem in organic fluted pumpkin production. Most farmers are yet to understand organic farming and its application. Farmers lacked knowledge of compost making using the modern techniques; use of bio-fertilizer and bio-pesticides requires awareness on the farming community. This result agrees with Gavino (2015) who reported that most agricultural technologies do not get to the farmers at grass root because of ineffective medium of dissemination of information in Nigeria.

Market problem for output was one of the constraints facing the organic fluted pumpkin production in the study area. Majority of the respondents (72.4%) identified market problem for output as their major constraints. Organic products are yet to gain ground of establishing a special market for its output to enable good price. The premium of organic produce over conventional suppose be determined at the point of cultivation of organic crops. Organic farmers need to be certified before selling their goods. Inability to obtain a premium price during the period required is a major problem confronting the organic farmers. This result is in line with the report of Kutama *et al.* (2013) that organic farmers are faced with difficulties in the marketing and distribution of their goods.

Concerning the post-harvest spoilage, fair proportion (49.7%) of the respondents agreed that post-harvest spoilage was their major problem in the study area. This could be as a result of poor storage facilities, delay in convey of produce to the market and lack of patronage. As a result, organic fluted pumpkin farmers sell their produce at a cheaper price thereby affecting their profitability negatively. This is in line with the report of FAO (2012) that the cost incurred during the post-harvest contributes to low profit.

The farmers with regards to inadequate supporting infrastructure, revealed that fair proportion (47.0%) experienced inadequate support of infrastructure were a problem in their production cycle. This could be as a result of lack of support from the government and individual towards the organic production. This finding agreed with Palo and Emeka-Okoli (2008) who reported that lack of infrastructure such as transportation are not encouraging and also that certifying agencies of organic production are inadequate, not recognizing green market and trade channels and the infrastructure facilities for verification leading to certification of the farms are inadequate. Ndubueze-Ogaraku, (2017) also stated that transportation is one of the major problems confronting vegetable farmers in Niger Delta region.

Slightly more than half (51.1%) of the respondents agreed that poor willingness to pay for organic materials was one of the serious constraints facing them in the production system. Fluted pumpkins are not sold at the same rate especially for the organic. This result agrees with the report of United Nations Environment Programme-United Nations Conference Trade and Development (UNEP-UNCTAD, 2007) that most consumers of organic vegetable are not interested in payment of high premium due to price instability of commodities.

Poor proportion (45.4%) of the respondents reported weak educational attainment as a problem facing them in use of organic technology in vegetable production. In line with the report of Olowa and Olowa (2016) the formal education is the key and could aid the managerial ability of farmers and enable them achieve greater efficiency in farming and when is lacking it becomes a constraint to profit.



Table 2: Production Constraints of the Farmers (n = 480)

Constraints	*Frequency	Percentage
Inadequate finance	681	93.0
Shortage of organic material	679	92.8
Poor awareness	630	86.1
Market problem for output	530	72.4
Post- harvest spoilage	364	49.7
Weak educational attainment	332	45.4
Poor of access to information	343	46.9
Land ownership	318	43.4
Inadequate appropriate information on organic usage	320	43.7
High cost of organic material	377	51.5
Poor willingness to pay for organic products	374	51.1
Low production	357	48.8
Inadequate agriculture policy	347	47.4
Farm input unavailability	363	49.6
Inadequate supporting infrastructure	344	47.0

*Multiple responses existed

Source: Field survey, 2019

It was also revealed in Table 2 that fair proportion (47.4%) of the respondents agreed that lack of appropriate Agricultural policy was the problem confronting the production and profitability. Promotion of organic agriculture for both export and local consumption, food security for the poor populace, national self-sufficiency in food production, production and input supplies, etc. are important issues which agriculture policy of Nigeria. This result agrees with the report of (International Federation of Organic Agriculture Movement [IFOAM], 2013a) that formulation of appropriate agriculture that will take care of the exiting problem in organic production is very necessary.

Good proportion (49.6%) of the respondents agreed that unavailability of farm input was the major problem confronting them in the study area. This implies that there is a problem of distribution network and marketing of organic inputs due to the fact that retailer's interest is not in marketing such products because of low demand. This result is in line with the report of Ndubueze-Ogaraku (2017) who stated that farm inputs were the major problem confronting farmers in most parts of Nigeria.



High Costs of organic material was a serious constraints faced by the farmers in the study area. The results reveal that slightly more than half (51.5%) of the respondents stated that high cost of organic material was a major constraints confronting them. It implies that the cost of the organic inputs is higher than those of industrially produced chemical fertilizer. This result is in line with the report of FAO (2012) that organic manures are unaffordable to the small scale farmers because of the increasingly cost.

With regards to low production, fair proportion (48.8%) of the respondents identified low production as a major problem affecting their profitability. This could be the cases of losses in yield on discarding synthetic inputs on conversion of their farming method from conventional to organic. Organic production may take years to increase on the farm with full possibilities (Samuel, 2007). This implies that small scale farmers cannot take the risk of low yield within the period of conversion for about 2-3 years. This result is in line with the report of Kutama *et al.* (2013) who stated that conventional agriculture has been shown to produce more yield.

The land ownership results of Table 2 disclosed that 43.4% of the respondents agreed that land ownership was their major constraints facing the yield and the profit. This indicates that the cost of production will be high when the land is not owned by the farmers thereby affecting their profitability. Ndubueze-Ogaraku (2017) reported that the problem of land tenure system is one of the main problems small scale vegetable farmers are facing where lands are inherited by various household in small fragments.

Finally, the poor access to information findings reported in Table 2 shows that 46.9% of the respondents stated that poor access to information was the challenge confronting the organic farmers in fluted pumpkin production in the study area. This could be that information is not well disseminated to farmers about innovations in agriculture. This implies that extension agents are not disseminating information to farmers at the grass root. This is in line with the report of (Ugbajah *et al.*, 2015) that small scale vegetable farmers are limited to information.

CONCLUSION AND RECOMMENDATIONS

The study has explored the constraints faced by small scale vegetable farmers in South-South zone of Nigeria. It was concluded from the study that the major constraints faced were inadequate finance shortage of planting materials, poor awareness, market problem for output, **poor willingness to pay for organic products**, unavailability of farm input, high cost of organic material, lack of appropriate agricultural policy, **weak educational attainment**, **post-harvest spoilage**, **low production**, inadequate supporting infrastructure, poor of access to information and land ownership. The following recommendations emerged from the study:

1. Non-governmental organizations/private interests should establish markets/shops for organic products to provide the farmers more access to markets for their products thereby minimizing post-harvest losses.
2. Small-scale fluted pumpkin farmers should be granted access to financial services at cheaper rates by the Bank of Agriculture and even Commercial Banks through adequate Government policy interventions.
3. Government through the various State Agricultural Development Projects (ADPs) should make organic materials more available and affordable so as to minimize cost of production.
4. Government should use information units of State's Ministry of Agriculture to create more awareness about the technologies and health benefits of organic fluted pumpkin to improve the farmers output, sales and profit.



REFERENCES

- Bologi, M. U. (2012). *Using Ugwu to lower diabetes and heart disease risk*. Retrieved on 27/04/2013. [Hppt://blueprinting.com/2012/07/using-ugwu-leaf-to-lower-diabetes-and-heart-disease-risks](http://blueprinting.com/2012/07/using-ugwu-leaf-to-lower-diabetes-and-heart-disease-risks).
- Food and Agriculture Organization [FAO] (2006). *World Agriculture. Towards 2030/2050*. FAO, Rome.
- Food and Agriculture Organization [FAO] (2012). *The state of food and Agriculture 2012*. FAO, Rome, Italy, Pp.163.
- Gavino, I. P. U. (2015). *Organic Farming Technologies*. National Soil and Water Resources Research Development Center for Hilly land Pedo-Ecological Zone. **In:** The 12th National Organic Agriculture Congress, held at SMX Convention Center, SM Bacolod City of Philippines from 25th November to 27th, 2015.
- Kutama, A. S., Abdullahi, M. A., Umar, S., Binta, U. B. and Ahmad, M.K. (2013): Organic Farming in Nigeria: problems and future prospects. *Global Advanced Research Journal of Agricultural Science*, **2**(10): 256-262.
- International Federation of Organic Agriculture Movement [IFOAM] (2013a). *Consumer survey on attitudes and preferences towards organic foods and verification systems in East Africa*, <http://www.ifoam.org/en/osea-ii-project>.
- Ndubueze-Ogaraku, M. E. (2017). A comparative Study on Fluted Production in the Niger Delta, Nigeria. *Journal of Biology, Agriculture and Healthcare*, **7**(14): 9-18. ISSN 2224-3208 (Paper). www.iiste.org.
- Ndungu, S. K., Macharia, I. and Kahuthia-Gathu, R. (2013). Analysis of profitability of organic vegetable production system in Kiambu and Kajiado countries of Kenya. *African Crop Science Conference Proceedings*, **11**: 605-611.
- Olowa, O. W. and Olowa, O. A. (2016). Assessment of Economic Viability of Fluted Pumpkin Farming in Ikorodu LGA, Lagos State. *World Rural Observation*. **8**(1): 3-8. ISSN 1944-6543 (Print); ISSN: 1944 - 6551. <http://www.sciencepub.net/rural>.
- Palo, P., Asimiku, J. E. N. and Emeka-Okolie, W. (2008). *Assessment of the Nigeria poultry market chain to improve bio security*. Food and Agriculture Organization of United Nation, Rome.
- Samuel, A. (2007). *Organic and Fairtrade cocoa Business*. A paper presented during a gathering in Ibadan on Organic Farming.
- Sijuwade, A. and Idowa, O. O. (2014). *Organic agricultural practices among small holder farmers in South Western Nigeria*. DOI: 10.5772/5759⁸ Published: May 7th 2014.
- Ugbajah, M. O., Sand Chidebelu, C. O., Uzoegbunam, E. N. and Azifuaku, E. N. (2015). Financing of Organic Farming Activities among Vegetable Farmers in Onitsha Agricultural Zone Southeast Zone, Nigeria. *International Journal of Agriculture, Forestry and Fisheries*. **3**(6): 213-217.
- Ubokudom, E. O. & Idiong, C. I. (2016). Factors influencing Adoption of organic vegetable farming among farm households in south-south Region of Nigeria. *American – Eurasian Journal of Agricultural and Environmental Science*, **16**(5): 852-859. ISSN 1818-6769. IDOSI Publication, 2016. DOI: 10.5829/idosi.aejaes. 2016.16.5.12918
- UNEP-UNCTAD (2007). *Organic agriculture in Kenya: An integrated assessment for policy Advocacy*. United Nations Environment Programme-United Nations Conference Trade and Development (UNEP-UNCTAD); United Nations, Geneva, Switzerland.