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Assessment of the Perception of Benefits of Organic Gardening in Maiduguri Metropolis, Nigeria

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Citation: Mustapha, S. B., Undiandeye, U. C. and Idrisa Y. L. (2012): “Assessment of the Perception of Benefits of Organic Gardening in Maiduguri Metropolis, Nigeria”, Asian Journal Agriculture and Rural Development, Vol. 2, No. 2, pp. 238-242.



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Abstract

The study examined the perception of benefits of organic gardening in Maiduguri Metropolis, Nigeria. Structured questionnaires were administered to obtain information from 166 respondents through multi-stage random and purposive sampling techniques. Data collected were analysed using descriptive statistics (frequency distribution, percentage and mean scores). The study indicates that the respondents had perceived a relatively neutral (mean score = 2.87) socio-economic benefits of organic gardening. Nevertheless, they agreed (mean score = 3.84) with the ecological benefits of organic farming. The result, equally reports that the intension of conversion to organic farming was relatively neutral (mean score = 3.49). The most important constraint to organic gardening conversion was lack of knowledge and skills regarding organic gardening. Policy recommendations were made to include: the creation of awareness on the consequences of synthetic fertilizers, pesticides among others, and adequate government support for organic gardening in the study area.

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Keywords: Assessment, Perception of Benefits. Organic gardening, Maiduguri Metropolis

Introduction

Background to the Study

Modern high-input agriculture has produced great increase in crop yield, but social and environmental costs have been high. Over the past decades sustainability becomes a more guiding principle in agriculture. Organic agriculture was one of the several approaches to sustainable agriculture and its importance in the agricultural sector is increasing.

Organic farming is an integrated system of farming based on ecological principles (Mohammed *et al.*, 2007; Burton, 1999). Organic farming is based on various laws and certification programmes, which prohibit the use of almost all synthetic inputs, and health of the soil recognized as the central theme of the method.

Adverse effects of modern agricultural practices, not only on the farm but also on the health of all living things and thus on the environment. Application of technology, particularly in terms of the use of chemicals fertilizers and pesticides has persuaded farmers to think aloud. Their negative effects on the environment are manifested through soil erosion, salination, genetic erosion etc.

Bello (2008) defined organic farming as agricultural production without the use of synthetic chemicals (fertilizers, pesticides, antibiotics, etc.). For crop production, organic materials such as compost and manure are used to maintain soil organic matter and as sources of nutrients. Organic farming is also about animal's welfare and the regulations governing organic farming contain

detailed guidelines as to how specific livestock should be bred and fed.

Farmers who practice organic farming use natural system to control pests and disease in crops and livestock's and avoid synthetic pesticides, herbicides, chemical fertilizers, growth hormones, antibiotics or genetic modifications (De Cock, 2005). The growing evidence of organic farming indicates that the practice results in a lot of environmental, social and financial benefits. The growth of organic farming in each country is based on the cumulative impact of individual farmer's willingness regarding conversion in a same institutional environment (De Cock, 2005; Burton, 1999). This willingness to convert was low in Nigeria and at the moment, as each year, less conventional farmers make a choice (Age *et al.*, 2010).

In this context conversion to organic farming is seen as an individual decision where the individual farmer decides to change his existing farming practices and accept the organic production standards. The conversion to organic farming was in this way compared to the concept of how choices were made by people (Ajzen, 1989). Therefore, it was found imperative to investigate the perception of benefits of organic gardening in Maiduguri Metropolis, Nigeria.

Statement of the Problem

Many scientists and farmers were fully aware of the environmental problems created by conventional farming. But many of them believe that yields are lower in organic cultivation during the initial period and also the cost of labour tends to increase therein. In spite of the ridicule poured out on organic farming, it has come to stay and is spreading steadily but slowly in Nigeria. However, the adoption has been very slow, but it has made in-wards into the conventional farming system.

Furthermore, options in finding out an alternative method to the conventional farming were limited. Nevertheless, sensing the importance had the supports of governments and non-governmental organizations to take several initiatives to promote organic farming in Nigeria.

However, there has not been any empirical study into the assessment of perception of benefits of organic gardening in Maiduguri Metropolis, Nigeria. Thus, the study was conducted to fulfill the gap of scientific information in the study area.

Objectives of the Study

The main objective of the study was to examine the perception of benefits of organic gardening in Maiduguri Metropolis, Nigeria. The specific objectives were to:

- (i) investigate the perception of socio-economic benefits of organic gardening among respondents,
- (ii) determine the perception of ecological benefits of organic gardening among respondents,
- (iii) examine the feasibility of organic production standards on gardens among respondents,
- (iv) assess the intention for information search on organic gardening among respondents,
- (v) assess the intention of conversion to organic gardening among respondents, and
- (vi) identify the constraints of conversion to organic gardening among the respondents.

Methodology

The study was carried out in Maiduguri Metropolis of Borno State, Nigeria. Maiduguri Metropolis constitutes the state capital as well as its environs. It has a land area of 300 km² with a population of 732, 696 and lies within latitude 11⁰ to 14⁰ N and longitude 10⁰ to 14⁰ E (NPC, 2006).

Primary data were mainly used for the study. The primary data were generated through the use of a structured questionnaires administered among the respondents. Purposive sampling procedure was used in the study. Thus,

all the respondents whose qualification was Higher National Diploma (HND) and above were purposively selected for the study. This was informed by the assumption that respondents, who had higher educational levels could understand the meaning of organic gardening better than the less educated ones. In all, 166 respondents served as the total sample size for the study. The list of the garden farmers was obtained from the agricultural department of Maiduguri Metropolitan Council, Borno State.

Descriptive (frequency distribution, percentages and mean scores) were used to analyse the data. Likert type rating scale of 1 to 5 points were used to compute the mean scores as used by De Dock (2005); Gillespie (2001). The mean scores were computed as follows:

$$\bar{X} = \frac{V_1F_1 + V_2F_2 + V_3F_3 + V_4F_4 + V_5F_5}{F_1 + F_2 + F_3 + F_4 + F_5} \dots \dots \dots (i)$$

Where,

- \bar{X} = mean score
- V₁ = Scale Value of Column 1
- V₂ = Scale Value of Column 2
- V₃ = Scale Value of Column 3
- V₄ = Scale Value of Column 4
- V₅ = Scale Value of Column 5
- F₁ = Frequency of Respondents in column 1
- F₂ = Frequency of Respondents in column 2
- F₃ = Frequency of Respondents in column 3
- F₄ = Frequency of Respondents in column 4
- F₅ = Frequency of Respondents in column 5

The mean scores were interpreted as follows:

Mean Score	Objectives 1 & 2	Objective 3	Objective 4 & 5
≤ 1.55	SD	SNF	VL
1.56 – 2.55	D	NF	L
2.56 – 3.55	U	U	U
3.56 – 4.55	A	F	H
≥ 4.56	SA	SF	VH

Where;

SA = strongly agreed	SF = strongly feasible	VH = very high
A = agreed	F = feasible	H = high
U = undecided	U = undecided	U = undecided
D = disagreed	NF = not feasible	L = low
SD = strongly disagreed	SNF = strongly not feasible	VL = very low

Results and Discussion

Socio-economic benefits of Organic Gardening by Respondents

Table 1 shows the average sample score for perceived socio-economic benefits of organic gardening by respondents. The results indicated an average mean score of 2.87, indicating relatively neutral benefits of organic gardening. This could be due to the relatively neutral score they gave to the different organic gardening statements and this means the respondents did not want to express themselves in favour of organic gardening. The find is in agreement to De Cock (2005), which found that conventional farmers had a neutral attitude towards organic farming in Belgium.

Table 1: Perceived Socio-economic benefits of Organic Gardening by Respondents

Statement	Mean Score	Decision
Organic gardeners' lives more in harmony with nature	4.38	A
Organic products are healthier	2.41	D
Organic gardening increases food production	3.84	A
Organic gardening assures the future of a garden	1.58	D
Organic gardening improves income	2.16	D
Average Mean Score	2.87	U

Source: field survey, 2009

The results indicated that the respondents agreed on the perception that organic gardeners live more in harmony with nature and increases food production; mean score = 4.38 and 3.84 respectively. On the other hand, respondents disagreed on the perception that organic products are healthier, assures the future of garden and improved incomes; mean score = 2.41, 1.58 and 2.16 respectively.

Ecological benefits of Organic Gardening by Respondents

Table 2 shows the results of the perceived ecological benefits. The respondents agreed that the use of chemical inputs is negative for health of people (mean score = 3.87) and, also agreed that organic gardening improves soil fertility (mean score = 4.10). But, the respondents remained undecided (mean score = 3.54) that the use of chemical input is negative to the environment.

Table 2: Perceived ecological benefits of organic gardening by respondents

Statement	Mean Score	Decision
The use of chemical input is negative for health of people	3.87	A
The use of chemical input is negative to the environment	3.54	U
Organic gardening improves soil fertility	4.10	A
Average Mean Score	3.84	A

Source: field survey, 2009

Table 2 shows that the respondents agreed (mean score = 3.84) with ecological benefits or organic gardening. The implication could be that they had an experience of low external input agriculture. The result supports the finding of Burton *et al* (1999) who reports that conventional farmers had some experience which makes them to seek for the ecological benefits of organic farming.

Feasibility of Organic Production Standards by Respondents

Table 3 shows that the feasibility of organic production standards on respondents gardens were scored relatively low (mean score = 1.81), indicating low feasibility among the respondents. This implies that it was not easy for respondents to garden without the use of synthetic fertilizers, or pesticides. The results support that of De Cock (2005) and Age *et al* (2010) that those conventional farmers cannot easily do without the use of synthetic products.

Table 3: Feasibility of organic production standards by respondents

Organic production standard	Mean Score	Decision
Working without use of synthetic fertilizer	2.36	NF
Working without use of synthetic pesticides	1.26	SNF
Average Mean Score	1.81	NF

Source: field survey, 2009

Information search on Organic Farming by Respondents

Table 4 indicates the level of information search on organic gardening by respondents. The study reveals that the respondents' average level of search for information on organic gardening was relatively neutral (mean score = 3.38), implying that the respondents are indifferent in terms of search for organic information. The finding agrees with that of De Cock (2005) and Gillespie (2001) that, in general, conventional farmers hardly seek for information about organic farming.

Table 4: Intention of Information Search on Organic Gardening by Respondents

Level of Intension	Frequency
Very low	24
Low	25
Undecided	25
High	57
Very high	35
Mean Score	3.33
Decision	U

Source: field survey, 2009

Conversion to Organic Gardening by Respondents

The level of conversion to organic gardening by respondents was presented in Table 5. The study indicated that the respondents' average intention of conversion was found relatively neutral (mean score = 3.49). This implies that they have not decided to convert to organic gardening at the time of the study. This could be attributed to their neutrality for information search on organic gardening. This supports the findings of Padel (2001) and Burton *et al* (1999) that, the more the conventional farmers seeks for information about organic farming the higher his intension to convert and vice versa.

Table 5: Intension of Conversion to Organic Gardening by Respondents

Level of intension	Frequency
Very low	23
Low	26
Undecided	24
High	60
Very high	33
Mean Score	3.31
Decision	U

Source: field survey, 2009

Constraints of Conversion to Organic Gardening by Respondents

As shown in Table 6, lack of knowledge & skill and limited government support were the most important constraints to organic gardening among the respondents, 42.13% and 41.20% respectively. This implies that organic information and government incentives are critical elements in conversion to organic gardening. The finding was in agreement with Mohammed *et al* (2007) that lack of knowledge & skill, as well as lack of government incentives are very important reasons for not converting to organic farming in Canada.

Table 6: Respondents Constraints of Conversion to Organic Gardening

Constraints	Frequency*	Percentage*
Reduced yield and income for a time	76	35.18
Limited government support	89	41.20
Lack of knowledge and skill	92	42.13
Accessing organic information is difficult	64	29.63

Source: field survey, 2009

*Multiple response exists; hence > 100%

Conclusion and Recommendations

The study reports that the respondents had perceived a relatively neutral perception towards organic gardening. Nevertheless, they agreed with the ecological benefits of organic gardening. The feasibility of production standards was relatively low. Both the intention for information seeking and conversion to organic gardening were found to

be neutral among the respondents. The most important constraint was lack of knowledge and skill on organic gardening.

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

- Creation of awareness on the consequences of synthetic fertilizers and pesticides should be pursued with vigor. This promotes organic gardening conversion.
- Governments and non-governmental organizations should provide adequate information on organic gardening as this increase the level of conversion for organic gardening by conventional gardeners.
- Organic cooperative societies should be formed by respondents. This provides easy access to loans and organic information flow in the study area with a view to facilitating the conversion process.

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