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FARMERS' KNOWLEDGE AND PRACTICES OF ORGANIC AGRICULTURE IN JIGAWA STATE, NIGERIA

ILIYASU, B. M.[1] and GARBA, A.[2*]

[1]Federal University of Health Sciences, Azare, Bauchi State, Nigeria
[2]Department of Agricultural Extension and Rural Development, Faculty of Agriculture, Federal University, Dutse, Jigawa State, Nigeria

*Corresponding author: adogarbak@gmail.com +2348036448534, 07063662066, and +2348176012339

Abstract

This study investigated the farmers' knowledge and practices of organic farming in Jigawa State, Nigeria. One hundred and sixty respondents (160) were used for the study. The data collected were analyzed using frequencies and percentages. Results from the study showed that mean age of the organic farmers was 33.6 years and are mostly male, married, and have secondary education (71.8%). Mean household size was 5 persons. Crops grown by the farmers include: millet, sorghum, maize, soybean, sesame, cowpea, hibiscus, and Groundnut. Major Farmers' source of information on organic farming was radio (54.4%). They have very low knowledge (84.0%) of organic farming practices. Major constraints to organic farming practices in the study area are no organic fertilizer to replace synthetic fertilizer 1st, it is costly to practice 2nd, and no market for organically produce crops 3rd. Policy recommendations emanating from the study are: increase awareness creations among farmers on organic farming in the study area. Farmers should be motivated through credit facilities and discouragement of the use of chemical fertilizer (inorganic fertilizer) in farming in order to ensure sustainable production of food, since the farmers have a favourable perception towards organic farming.

Keywords: Knowledge, Farmers, Perception, Organic, practices and Jigawa State

INTRODUCTION

Agriculture has been the mainstay of the Nigerian economy since independence, as it accounts for over 40 percent of the non-oil foreign exchange earnings and employs about 70% of the active labour force of the population (Sartaj et, al, 2017). Despite this level of involvement in agricultural production in Nigeria, the food produced can no longer meet the demand of the rapidly increasing population of the country. Attempts to increase food production in the country have brought about the expansion of farming area, as well as an increase in the use of agro -chemicals, without considering the long-term effect of which does not support sustainable agriculture. In an attempt to promote organic agriculture and ensure the production of agricultural goods at a sustainable manner, the second national conference on organic agriculture was held in Nigeria, under the auspices of the International Federation of Organic Agricultural Movement (IFOAM), where the participants were charged with the responsibilities of developing organic agriculture in Nigeria. International Federation of Organic Agricultural Movement (IFOAM, 2013). Organic agriculture aims to produce sufficiency and availability in foods as well as other products in better quality. Organic agriculture has emerged as an important priority area globally in view of the growing consciousness for safe and healthy food, long term sustainability and environmental concerns.

Sartaj (2017), defines "organic agriculture as holistic food production management system, which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity (FAO, 2013). Ethical issues such as fair labor practices and animal ethics have also been included in organic agriculture definitions. The main objective of organic farming is to protect human and animal health without contaminating natural sources like water, air and soil. However, the National Organic Standard Board (NOSB) has defined organic agriculture as 'an ecological production management system that promotes and enhances biodiversity. It is based on minimal use of off-farm inputs and on-farm management practices that restore, maintain and enhance ecological harmony.

Nigeria appears to be at the early stage of the development of organic agriculture, with very few farms or projects claiming to be organic and even fewer operating a recognized form of certified

organic agriculture (Harris, 2006). However, despite these beneficial effects and the vital role in supporting crop production and soil fertility improvement, organic manure is not regularly applied by most farmers, even in areas where aggregate livestock population may permit its use (Adejobi and Kormawa, 2002) in Sub-Saharan Africa.

The Nigerian agricultural landscape is experiencing a surge of innovation and progress, driven by a commitment to societal well-being. This transformation is evident at both the governmental and individual levels, with a focus on producing high-quality yields. Organic agriculture has emerged as a powerful tool to achieve this goal, and organizations like Association of organic farmers Practioners of Nigeria (NOAN), are taking the lead in empowering organic farmers. Also, the organization, World-Wide Opportunities on Organic Farms (WWOOF), which offers volunteers the chance to gain short term experience on organic farms, lists four opportunities in Nigeria: an organic farm which sells most of its farm produce, while some goes into humanitarian and personal consumption; a 30 hectare farm growing fruits, food crops and livestock production organically.

The major goal of organic farming activities is a sustainable production of quality food with little or no effect on the environment. This goal has not been fully achieved by the current agricultural practices, i.e. conventional farming in the study area, hence, the need to encourage organic farming which is capable of providing solutions to the current agricultural problems and help to achieve optimal production of quality food sustainably (IFOAM, 2017).Despite the global awareness of environmental degradation and climatic change that could result from continuous practice of inorganic farming, and the threats it poses on sustainable agricultural production, the farmers in Jigawa State are still very much in a system of producing inorganically. This study was an attempt to understand the feelings of farmers about sustainable farming in the study area.

METHODOLOGY

Study Area

The study was conducted in Jigawa State. The state is located in the north-western geopolitical zone of Nigeria. It lies latitudes 12.228oN and longitude 9.516oE. The state is bordered by Kano and Katsina States to the West, Bauchi State to the east and Yobe State to the northeast. Jigawa State shares an international border with the Republic of Niger, providing unique opportunity for international trade. The State has a total land area of approximately 22,410 square kilometers and a population of 7,499,100 World meter projection 2023). The State also lies within three vegetation zones, the Guinea, Sudan and Sahel Savannah. The climate of Jigawa state represents a typical sub-tropical condition characterized by a hot wet summer and a cool dry winter with an average rainy season of 3-5 month. Agriculture is the predominant occupation of the people in Jigawa State. Major produce includes millet, sorghum, soybeans, maize, rice, sesame, hibiscus and cowpea.

Sampling procedure and sample size

The population involved in this study consisted of all farmers in Jigawa State. A multi-stage sampling technique was used for this study because of the several stages that were involved in selecting respondents. The state is divided into four zones according to the Jigawa Agricultural and Rural Development Authority (JARDA) zoning. The first stage involved the selection of one local government from each zone. The selected local government areas were: Dutse Local Government area from zone one and Hadejia Local Government area from zone two, also Ringim Local Governent area from zone three and finally, Kazaure local government from zone four. The second stage involved random selection of two farming communities from each local government area. The selected farming communities were: Baranda and kwaimawa from zone one, and Ganuwar kuka and agufa from zone two, and Gada and Dambo dam from zone four while ringim and sintilmawa from zone three. In the third stage, the lists of registered organic farmers in the selected communities were obtained from the block extension agents in Jigawa State ADP. Twenty farmers were selected from each community to make a total of 160 respondents which constituted the sample size for the study.

Data collection and analysis

Data were collected from the primary sources (respondents) with the aid of a structured interview schedule consisting of both open and close ended questions. The data collected were analyzed with the aid of the descriptive statistical tools of frequency count and percentage.

RESULTS AND DISCUSSION

Socioeconomic characteristics of the respondents

The socioeconomic characteristics of the respondents analyzed in this study, which are relevant to individuals' perceptions of organic farming, include age, sex, marital status, and educational attainment. Analysis of results obtained from this study (Table 1) reveals that a majority (89.4%) of the respondents are male with the mean age of 33.6 years. This indicates that younger farmers are more current with organic farming

practices. This results is in agreement with the findings of Dipeolu et al. (2006) and Solomon (2008) in their separate study they reported that females are usually engaged in post harvesting operations such as transportation, processing and marketing of agricultural produce. But varies on the mean age with the result of Solomon (2008) that the mean age of organic farmers was 51 years, meaning that older people were involved in organic farming activities more than the younger ones. This implies that youths are more involved in the practices of organic farming to an appreciable extent.

The results depicted in Table 1 show that the majority (73.1%) of the farmers are married, while very few were single or widowed. This means that married people are more involved in farming and may receive assistance from their spouses in carrying out some activities on the farm.

In terms of education, the majority (71.8%) of the respondents had secondary education: primary, secondary or post-secondary education. This implies that learned people are involved in farming, which is in support of Solomon (2008) who stated that the majority of present day farmers had some formal education. The result also, indicated that most (79.4%) of them are full time farmers while other engaged in other public service job and or trading.

Table 1: Socioeconomic profile of the organic farmers

Socio-economic Variables	Frequency	Percentage	Mean
Sex			
Male	143	89.4	
Female	17	10.6	
Age			
18-30	35	21.8	
31-40	103	64.4	33.6
41-50	15	9.4	
51 and above	07	4.4	
Marital status			
Married	117	73.1	
Single	33	20.6	
Divorced	10	6.3	
Household size			
1-5	122	76.3	
6-10	24	15	5
11 and above	14	8.7	
Level of Education			
Secondary	115	71.8	
OND/NCE	14	8.8	
HND/BSc.	15	9.4	
Primary	16	10	
Main occupation			
Farming	127	79.4	
Other public servant	23	14.4	
Trading	10	6.2	

Source: Field Survey, 2023

Major crops grown by the organic farmers

Major crops are referred to as crops commonly grown in a large quantity for commercial purpose by the farmers in the study area. The comprehensive list of crops was obtained from the Jigawa State Agricultural Rural Development Authority (JARDA) and from the result of pre-survey carried out prior to the study. The crops were identified by asking the farmers to indicate which of the crops they grow from the list of various crops presented to them. The results in Table 2 shows that majority of the respondents grow the following staple food crops: millet (13.7%), sorghum (29.4%), rice (25.0%), maize (13.1%), groundnut (10.0%), and other crops (8.8%).

The major staple crops were planted on large areas of individual land, family land and borrowed land and are the major sources of income for the respondents. Other crops (sesame, hibiscus and cowpea) were seen as complimenting the major crops. Some of these crops are planted in between the major crops for inter - cropping and green manuring (e.g. nitrogen fixation by leguminous crops) which are important activities in organic

farming. The green manure crops will improve the soil condition.

Table 2: Distribution of the respondents based on types of crop grown

Crop	Frequency	Percentage
Millet	22	13.7
Sorghum	47	29.4
Rice	40	25.0
Maize	21	13.1
Ground nut	16	10.0
Others	14	8.8
Total	160	100

Source: Field survey, 2023

Sources of information on organic agriculture for the respondents

Sources of information on farming are channels through which farmers gain access to information on farming activities and other aspects of livelihood such as marketing. Information sources were evaluated by presenting respondents with a list of sources developed from the literature and asking them to indicate which ones they use for accessing information on farming activities, frequency of access, and the most preferred source. The results obtained in Table 3 show that most (54.4%) of the respondents have access to organic agriculture information from radio, Extension workers accounted for (17.5%). This result corroborate with the findings of Muhammad and Octamaya (2019) where they reported that about 93% of respondents used radios as an information source. This partly supports the findings of food and Agricultural Organizations FAO (2013) who observed that radio was among the electronic media used successfully in rural areas. It was noted that most of the information sources provided farmers with useful information on organic farming but not on a regular basis.

Table 3: Distribution of the respondents based on sources of information

Information sources	Frequency	Percentage
Radio	87	54.4
Extension workers	28	17.5
Friends/relatives	15	9.4
Farmers cooperatives	16	10.0
Television	14	8.7
Total	160	100

Source: Field survey, 2023

Knowledge of organic farming practices

Knowledge of organic farming was defined in this research as a proper understanding of organic farming activities. Knowledge of organic farming among the respondents was measured by asking them in their local language to indicate true or false to the ten knowledge questions presented to them. The knowledge questions were prepared from the literature and pre-test stage of the study. The results of the study in Table 4 revealed that (84%) of the respondents were having a low level knowledge of organic farming practice in the study area, while (16%) of them were knowledgeable about organic farming practice in the study area. This implies that these farmers that have good knowledge of organic farming practice, the knowledge could influence them towards a favourable perception of organic farming. It could also help the farmers convert to organic food production, if they are encouraged and motivated, since they have started practicing organic farming.

Table 4: Distribution of the respondents based on knowledge of organic farming

Knowledge	Frequency	Percentage
Have knowledge	25	16
No knowledge	135	84
Total	160	100

Source: Field survey, 2023

Constraints of organic farming practices in Jigawa state

The results in Table 6 shows that (41.8%) of the respondents complain of low access to organic fertilizer to replace the synthetic fertilizer in organic farming practices in the study area. Organic farming is costly to practice (16.8%), no market for organically produced crops (15.6%), it is labour intensive also, very difficult to control pests (10.0%), and very difficult to control weeds (5.6%) respectively. This supports the findings of Dipeolu *et al.* (2006) that farmers, in general, had a positive perception of organic produce. The implication of this finding is that organic farming require more sensitization and creation of more awareness among farmers in the study area through adequate training.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of this study, it can be concluded that the farmers were mostly men, married and well educated. The major crops grown by the farmers in the study area are millet, sorghum and maize. The farmers had access to information on farming through various sources of which radio and extension agents provided them with information on regular basis. The most preferred source of information on farming is radio.

Table 6: **Distribution of the respondents based on constraints of organic farming practices**

Crop	**Frequency**	**Percentage**	**ranking**
No organic fertilizer to replace synthetic fertilizer	67	41.8	1st
It is costly to practice	27	16.8	2nd
No market for organically produce crops	25	15.6	3rd
It is labour intensive	16	10.0	4th
Very difficult to control pests	16	10.0	4th
Very difficult to control weeds	09	5.6	5th
Total	160	100	

Source: Field survey, 2023

Therefore, the following recommendations are made:

1. Women and youths should be encouraged to be actively involved when providing training on organic farming in the study area.
2. More Sensitization programmes on the potentials of organic farming should use preferred sources of information like GSM, radio and extension agents in local languages by the NOAN and other organic farmers stakeholders and promoters
3. Farmers should be enlightened on various organic methods of controlling weeds, pest and diseases, through the farmers' regular sources of information.

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