
Benefits and Constraints Associated with Horticultural Farming Among Rural Dwellers in Birnin Gwari Local Government Area of Kaduna State, Nigeria.

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ABSTRACT.

The study was conducted to examine the benefits and constraints associated with horticultural farming among rural dwellers in Birnin Gwari Local Government Area of Kaduna state, Nigeria. Multistage and random sampling techniques were used to select eighty horticulturists from three districts area/ wards within the local government area. Data collected were analyzed using simple descriptive statistics such as table, chart and percentage. The results showed that majority (77.50%) of the respondents is in their working age class of between 21- 60 years of age and majority are male (65.00%). Vegetable production has the highest percentage (42.50%) of engagement followed by floriculture (31.25%), then pomology (23. 75%) while architectural landscaping has the lowest practice rate (2.50%). Income generation (72.52%), job creation (42.50%), source of food (31.25%) and beautification of the environment (15.00%) are benefits derive from horticultural farming among others. However pests and diseases outbreak(68.75%),lack of technical knowhow (53.75%), high cost of transportation(51.25%), high cost of farmland (47.50%) and poor accessibility to land(42.50%) were identified as the constraints affecting horticultural farming in the study area among others. The study therefore recommends that the horticulturist in the study area should pool their resources together by forming cooperative society to enable them surmount some of the identified constraints to boost their production and generate more income.

Keywords: Awareness, Benefits, Birnin Gwari , Constraints, , Horticultural farming. Rural dwellers.

INTRODUCTION

Horticulture is a boon of nature that is refined by human skill as a science to get more and more benefits. It involves rigorous cropping expertise, including the improvement, production, distribution and use of vegetables, fruits, woody landscape and greenhouse plants. Horticulture is the science and arts involved in the cultivation, propagation, processing and marketing of ornamental plants, flower, turf, vegetables, fruits and nuts. It is unique among science because it not only involves science and technology (Louisiana State University, 2011) but it also incorporates art and principles of design. It is seen as the art and science of plant production for both beauty and utility, rather than staple crops, horticulture focuses on value added and luxury crops. Horticulture is one of the fastest growing industries with lots of professional opportunities. An increasing proportion of the world's population is living in metropolitan environments where their understanding of farming, and therefore of food production, is becoming progressively more poor. While in 1950 approximately 71% of the world's population lived in rural locations, this had declined to 50% in 2011 and is anticipated to be as low as 30% globally by 2050 (United Nations, 2007).

Horticulture products play a major role in modern society and economy. They form the basis of a wide array of processed and partially processed products. Ornamental plants have high cultural values for Europeans and urban green is considered as important part of city quality of life (Thompson, 1977). Based on crop grouping and use the main division or branches of horticulture are Olericulture, Floriculture and Pomology. Olericulture which is a branch of horticulture emphasizes on the production of vegetable, processing and marketing. Floriculture is the cultivation and management of flowers, flowering plants and foliage plants. It also includes their uses in ornamental construction and floral arrangement (ISHS, 2011). Pomology is the production of fruits and nuts that are basically perennials. Despite having a vast area of land for horticultural practices in Nigeria, unemployment amongst youth is very rampant in the country with about 20 million underemployed active youth (Unemployment report, 2019). Horticulture activity as a fast growing business was identified as an enterprise in Kaduna metropolis (Bishtu, 2012). Generally, horticultural activities as a business in Nigeria have been reported in various sectors. In Kaduna metropolis, study was conducted on problem and prospect of ornamental marketing, the result achieved indicated that the level of patronage amongst the communities were 50%, those inclined to the practices of ornamental marketing were middle age entrepreneurs, of 70% and were disproportionately male (Olorukooba *et al*, 2012). Similarly, in a bid to eradicate extreme poverty and hunger through agricultural production and value relation, horticultural activities were identified as an important organ whereby, sesame an important horticultural crop produced and processed in rural areas has assisted in alleviating poverty among poor Nigeria farmers and other rural dwellers. Thus this could have led to high revenue earned from the export of sesame alone. According to Lawal (2001) Nigeria earned over 79 million dollars from sesame alone. In addition to poverty eradication, Sajo (2011) also asserted that numerous and varied income generation activities are in horticultural industry. These include ownership of small gardening activity, large scale vegetable production, marketer of horticultural produce. These opportunities are unique and endless. Horticultural activities offer considerable potential which may contribute significantly to poverty reduction and economic development if adequately exploited. Nigeria has a strong favourable soil condition, abundant water resources and abundant cheap labour force that can be exploited to produce quality and competitive horticultural products. Horticulture is diverse and caters for a wide array of activities, ornamental, medicinal herbs, environment, social product and services which are all fundamental to development and maintain health and well-being. Horticultural crop production creates jobs. On average it provides twice the amount of employment per hectare of production compared to cereal crop production (Ali *et al.*, 2002).

Fruits and vegetables contributes to the income of both the rural and urban dwellers. Fruits and vegetables play a very important role in the nutrition and health (Nagy and Shaw, 1980) especially as they contain chemical compounds which aids digestion. Ibeawuchi *et. al.*(2015) reviewed the benefits of consuming vegetables and fruits to include; eradication of extreme hunger and poverty, achievement of universal primary education, promotion of gender equality and empowerment of women, reduction of child mortality, improvement in maternal health and help in combating HIV/AIDS, malaria and other chronic diseases. Other benefits reviewed by the authors are; source of pharmaceuticals and other therapeutic materials that is they are used as medicinal plants, creation of Jobs and economic opportunities, provides new and profitable sources of income for farmer and brings about improved food security and nutrition (Ibeawuchi *et. al.*,2015).

Despite the numerous benefits of horticultural sub-sector, it is still bedeviled with myriads of problems. These problems include inadequate knowledge and technology of production, insufficient planting materials, land tenure, poor extension services and insufficient post harvest facilities (Babatola, 2004). Horticultural crop production in Nigeria is also hampered by the policy and fiscal constraints of the governments. It received only little attention in the national plan for agricultural development (Oseni, 2004). Horticultural crop farming is also associated with negative outcomes such as pest and diseases, weather factors not within the control of agricultural producers and

adverse fluctuations in both input and output prices. In their study Ibeawuchi *et. al.*(2015) reviewed some constraints associated with horticultural production to include; pest attack and diseases infestation, poor agricultural pricing and low fertilizer use, low access to agricultural credit, land tenure insecurity, low and unstable investment in agricultural research, poor market access and marketing efficiency, lack of necessary infrastructures and post harvest losses of fruits and vegetables in Nigeria.

In the light of the foregoing, this study examines benefits and constraints of horticultural farming among rural dwellers in Birnin Gwari Local Government Area of Kaduna State, Nigeria.

METHODOLOGY

Study Area

The study was conducted in Birnin Gwari Local Government Area of Kaduna State of Nigeria. Birnin Gwari Local Government was created in September 1976. The Local Government lies between latitude 10⁰40'N and longitude 6⁰33'E with an area of 6,185km² and population of 252,363 during the NPC, 2006 census. It lies in the western part of Kaduna State, sharing border with Zamfara state, Niger state and Katsina state. Birnin Gwari Local Government comprises of fourteen (14) districts: Kuyello, Randagi, Magajin Gari I, Magajin Gari II, Magajin Gari III, DogonDawa, Tabanni, Gayam, Maganda, Kutemeshi, Kazage, Kakangi, Kungi and Salulawa districts. The indigent and ethnic group of the area include: Hausa, Fulani, Gwari, kamuku and other ethnics in Nigeria. The primary occupation of the people is farming and marketing. There are indications that horticultural activities exist in the metropolis. Most farmers participate in wet and dry season vegetable production.

Sampling Procedure/Frame

A multi stage and random sampling procedures were used to select the eighty respondents used for this study. The first stage involves the purposive selection of Birnin Gwari Local Government Area for the study due to researchers affinity to the area, the second stage involved the purposive selection of Magajin Gari I, II and III respectively due to higher concentration of farmers cultivation of horticultural crops based on an earlier recognizance survey carried out by the researchers at the beginning of the study and the final stage involved the random sampling of the eighty respondents from the three selected districts at the rate of forty two respondents from Magaji Gari II, twenty two respondents from Magajin Gari III and sixteen respondents from Magaji Gari I. The selection was done based on higher concentration of horticulturist in Magajin Gari II as shown Figure1. The three districts are within Birnin Gwari town the headquarter of the local government area.

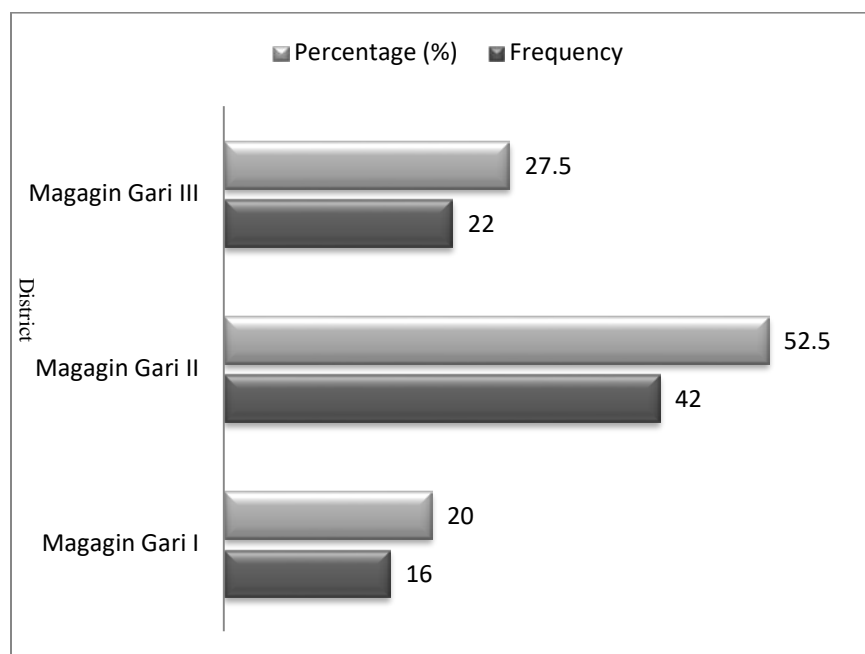


Fig. 1: Bar chart showing the distribution of respondents based on location

Data Collection

Primary and Secondary data were used for this study. The primary data were collected through the use of questionnaires and personal interview of the respondents by the researchers and some paid enumerators drawn from the local government area, while the secondary data were obtained from journals, textbooks, conference proceedings and online sources. The questionnaire for the primary data was designed to elicit the following information; socio-economic characteristics of the respondents such as age, sex, marital status and educational status, awareness of horticultural practices by the respondents in the study area, types of horticultural activities engaged in by the respondents, size of farm land used, potential benefits of horticultural activities to the respondents and the constraints encountered in horticultural practices in Birnin Gwari Local Government Area.

Analytical Techniques

Descriptive Statistics such as frequency distribution table, percentage, bar and pie charts were used to analyze the data obtained from the respondents.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Respondents

The result of the socio – economic characteristics of the respondents is presented in Table 1 to 4 and figure 2. The gender distribution of the respondents presented in Table 1 revealed that male dominated the practice of horticultural farming in the study area with male constituting 65% of the respondents while female is 35%. The dominance of male in this study was in agreement with the study of Mohammed and Afework (2016) that reported that male constituted 70% of horticulturist in Dire Dawa Administration, Eastern Ethiopia. The age distribution in Table 2 shows that 11.25% of the respondents are between less than 21 years and 61years and above respectively, 15% of the respondents are between 21-30 years, 16.25% of the respondents are between 31-40 years of age, 17.50% are of respondents are between 51-60years and 28.75% of the respondents are between 41-50 years. This implies that about 77.50% of the respondents are in their working age group of between 21 – 60years of age. Table 3 revealed that 72.50% of the respondents are married, 22.50% are single while 5.00% of them are widow/widower. This result show that majority of the horticulturists in the study area are married men and women that implies that there will be greater supply of family labour compared to hired labour. Mohammed and Afework (2016) reported that 93.2% of the horticulturists in their study were married men and women and 6.80% were widow/widowers which bears similarity which the result obtained in this new study. Figure 2 is a pie chart displaying the distribution of the respondents based on educational status. The pie chart revealed that 8.00% of the respondents had primary education, 39.00% had secondary school educational level, 50.00% had tertiary education and 1.00% of the horticulturists had Quranic and adult class education respectively while only 1.00% of the farmers had no formal education. This implies that majority of the respondents are literate which could be due to great awareness of the importance of education in the study area as a result of the local government area being one of the oldest Local Government Area in Kaduna State. Figure 3 is a pie chart showing the distribution of the horticulturist based on other economic activities engaged in. The result revealed that 43.00% of the horticultural farmers are salary earners, 30.00% of them engaged in other farming activities like cereal and legume crops cultivation and other menace jobs as indicated on the pie chart as others, 15.00% engaged in tailoring, 7.00% engaged in carpentry work and 5.00% engaged in welding. This result is an indication that horticultural farming could be a secondary activity in the study area. The high percentage of salary earners could be attributed to the fact that majority of the respondents are educated which allows them to seek for white collar jobs and engaging in horticultural practices as secondary source of income.

Table 1: Frequency distribution of the respondents in the study area based on gender

Gender	Frequency	Percentage %
Male	52	65.00
Female	28	35.00
Total	80	100

Table 2. Frequency distribution of the respondents in the study area based on age

Age Range (years)	Frequency	Percentage %
< 21	9	11.25
21-30	12	15.00
31-40	13	16.25
41 – 50	23	28.75
51-60	14	17.50
61 and above	9	11.25
Total	80	100

Table 3. Frequency distribution of respondents in the study area based on marital status

Marital Status	Frequency	Percentage %
Single	18	22.50
Married	58	72.50
Widow/widower	4	5.00
Divorcee	0	0.00
Total	80	100

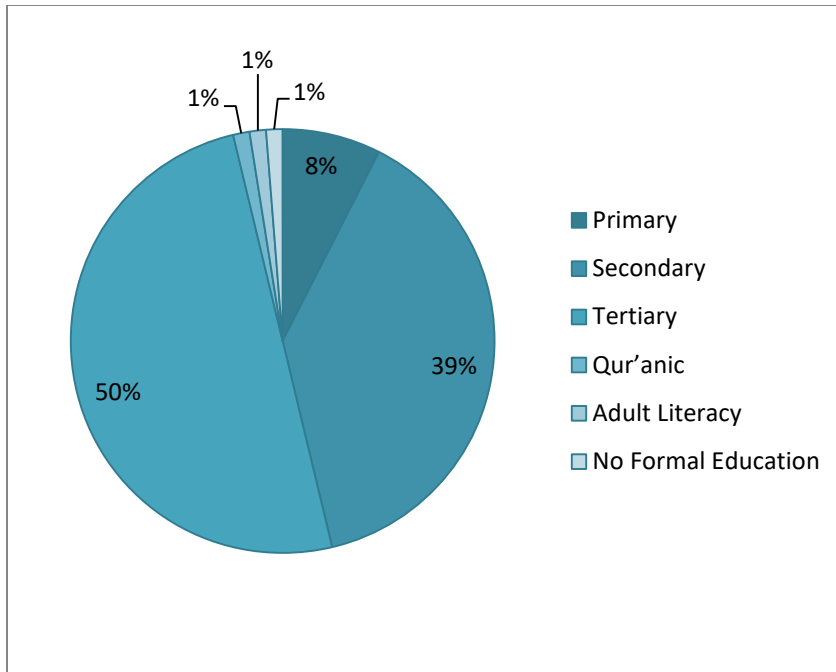


Fig. 2: Pie chart showing educational status of respondents

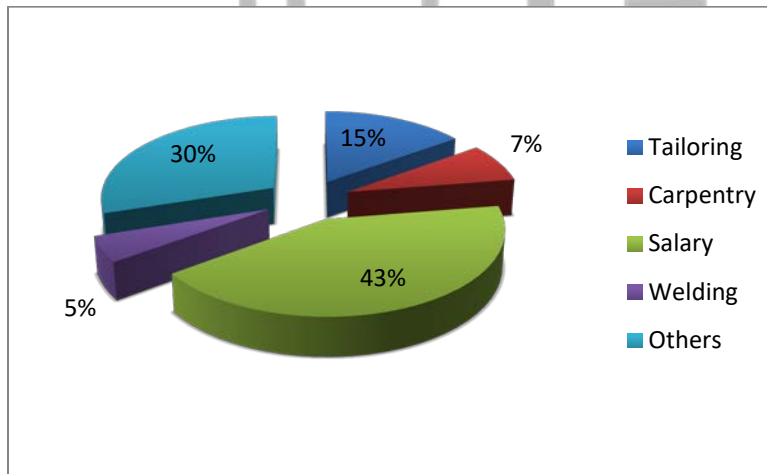


Fig. 3: Pie chart of other economic activities of horticultural farmers

Awareness of Horticultural Practices

The result of awareness of horticultural farming among the respondents is presented in Table 4. The result revealed that 96.25% of them had awareness of horticultural farming while only 3.75% of the respondents claimed not to know about horticultural farming which is not significant. This shows that majority of the respondents may have been into horticultural farming system for a long time giving them required experience.

Table 4: Frequency distribution of the respondents in the study area based on awareness of horticultural practices.

Awareness	Frequency	Percentage %
Yes	77	96.25
No	3	3.75
Total	80	100

Types of Horticultural Activities Engaged In

The types of horticultural activities engaged in and the size of farm land allotted to each activity is presented on Table 5 to 8. The result in Table 5 revealed that the respondents participated mainly in vegetable production (42.50%), flower production (31.25%), orchard establishment (23.75%) and the lowest being landscape architecture (2.5%). This could be due to market demand within the study area for vegetable as source of daily livelihood. Among the vegetable growers 55.00% of them used less than one hectare of farm land for production, 35.00% cultivated one hectare of farmland while only 10.00 % of the farmers had farm size that is greater than one hectare as shown in Table 6. For flower production, land usage followed similar trend with olericulture with majority of the respondents 51.25% used less than one hectare of land, 36.25% used one hectare of land for production and only 12.50% of the farmers had more than one hectare of land as shown in Table 7. For orchard establishment the use of land is a reversal case to that of olericulture and floriculture. Greater percentage (52.50%) of the respondents used over one hectare of farm land, 26.25% cultivated less than one hectare of land while 21.25 % of them uses one hectare of farm land for orchard establishment as shown in Table 8.

Table 5: Frequency distribution of respondents in the study area based on type of horticultural activities practice

Type of horticultural activity	Frequency	Percentage %
Vegetable production	34	42.50
Flower production	25	31.25
Orchard establishment	19	23.75
Architectural landscaping	2	2.50
Total	80	100

Table 6: Frequency distribution of respondents in the study area based on farm size used for olericulture

Farm size(hectare)	Frequency	Percentage %
< 1	44	55.00
1	28	35.00
>1	8	10.00
Total	80	100

Table 7: Frequency distribution of respondents in the study area based on farm size used for floriculture

Farm size(hectare)	Frequency	Percentage %
< 1	41	51.25
1	29	36.25
>1	10	12.50
Total	80	100

Table 8: Frequency distribution of respondents in the study area based on farm size used for pomology

Farm size(hectare)	Frequency	Percentage %
< 1	21	26.25
1	17	21.25
>1	42	52.50
Total	80	100

Benefits of Horticultural Practices

The benefits of horticultural farming in the study area are presented in Table 9. It was observed from the table that majority of the respondents gained substantial income from horticultural activities (72.50%), followed by source of employment (42.50%), source of food(31.25%), gaining of experience and knowledge (25.00%), while 15% of the respondents see the benefit of horticulture as a mean for beautification of the environment. The result indicates that majority of the respondents depend on horticulture for sustainability of their livelihood since majority of the horticulturist derived income from the activities. Most of the benefits identified in this study fits into some of the benefits of horticulture as highlighted by (Ibeawuchi *et. al.*,2015) in their review of paper titled “Fruit and Vegetable Crop Production in Nigeria: The Gains, Challenges and The Way Forward”. Ali et al. (2002) also reported on the importance of horticulture as a source of employment. Sajo (2011) also asserted that numerous and varied income generation activities are in horticultural industry.

Table 9: Benefits of horticultural practices in the study area.

Benefits	Frequency	Percentage (%)
Gaining of experience and knowledge	20	25.00
Source of income	60	72.50
Source of employment	34	42.50
Source of food	25	31.25
For beautification of the environment	12	15.00

Multiple Responses.

Constraints Affecting Horticultural Activities in the Study Area.

Table 10 shows the constraint encountered among respondents in carrying out horticultural activities in Birnin Gwari Local Government Area. The major constraints are pests and diseases outbreak (68.75%), lack of technical

know-how (53.75%) and high cost of transportation (51.25%). Other constraints identified include; high cost of land (47.50%), poor land accessibility (42.50%), lack of capital (36.25%), lack of credit facilities (36.25%), post harvest losses (30.00%) and lack of storage facility (23.75%). According to Babatola (2004), some of the problems hampering the development of horticultural activities in Nigeria are inadequate knowledge and technology of production, insufficient planting materials, land tenure, poor extension services and insufficient post harvest facilities which has similarity with present result obtained in this study.

Table10: Constraints affecting horticultural practices in the study area.

Constraint	Frequency	Percentage (%)
Lack of technical know how	43	53.75
Poor accessibility to land	34	42.50
High cost of transportation	41	51.25
High cost of land	38	47.50
Lack of credit facilities	29	36.25
Pests and diseases	55	68.75
Lack of capital	29	36.25
Post-harvest losses	24	30.00
Lack of storage facility	19	23.75
Multiple Responses.		

Conclusion

Horticultural product plays a major role in modern society and economy. Fruit and vegetable are part of everyday life including special high value diet for infants and the elderly. The result shows that majority of the activities are carried out in Magajin Gari II of the study area. Majority of the respondents are in their working age class and majority are male. Vegetable production has the highest percentage of engagement followed by floriculture, then pomology production while architectural landscaping has the lowest practice rate. Income generation, job creation, source of food and beautification of the environment are benefits derive fro horticultural farming among others. However horticultural farming in the study area is faced with some problems such as pests and diseases outbreak. Lack of technical knowhow and high cost of transportation which are the major constraints affecting horticultural farming in the study area. High cost of farmland, lack of capital, unavailability of credit facilities, post harvest losses and lack of storage facility were also observed as problems hindering horticultural activities in the study area. The study therefore recommends that the horticulturist in the study area should pool their resources together through forming cooperative society to enable them surmount some of the identified constraints to boost their production and generate more income. .

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