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Full Length Research Paper

Socio-economic analysis of melon production in Ifelodun Local Government Area, Kwara State, Nigeria

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This study examined the socio-economic characteristics of melon production in Ifelodun Local Government Area, Kwara State. Primary data were basically used for the study. They were obtained through interview schedule with a well structured questionnaire. A 2-stage random sampling technique was used in selecting the sampling for the study. A total of 120 farming households engaged in melon production were used. Data were analyzed using descriptive statistics and budgetary analysis. The result of the socio-economic characteristics shows that melon production is in the hand of aged, married and experienced farmers. Farming is the major occupation of the respondent while majority have the ability to read and write. The result of the costs and returns analysis revealed that Gross Margin was ₦1, 263.81. While some of the problems were identified as poor yield, water scarcity and non-availability of credit. It is concluded that melon production is viable in the study area, thus credit facilities should be provided so that farmers can get more returns.

Key words: Melon (*Citrullus colcynthis*), melon production, socio-economic analysis, Ifelodun.

INTRODUCTION

Agriculture in Nigeria is dominated by small–scale farmers who produce about 80% of the total food requirement (Fayinka, 2004). These farmers are characterized by strong dependence on agricultural labour market; little or no forms of savings or storage facilities and cultural practices adopted are highly labour intensive (Festus, 2005; Fakayode, 2008). The socio– economic and production characteristics of the farmers, inconsistent government policies, the poor infrastructural base, all interact and affect the sector, resulting in low production, high price of food items, inflation, underdevelopment and poverty. If Nigeria is ready to go back to agriculture, the problem of poverty, hunger and malnutrition could be alleviated. Adequate production of most Nigerian staple crops such as cereals, yam, cassava, cash crops and some vegetables like melon which is consumed in many parts of the country, will contribute positively to the agricultural sector. Melon (*Citrillus lanatus*), also called honeydew melon, among other vegetables crops plays an important dietary role in any parts of Africa. It belongs to Cucurbitaceae family. It is grown virtually everywhere in tropical, subtropical and temperate region where rain and irrigation is adequate (Messiaen, 1992; Tindall, 1983). Melon is an important component of most Nigerian diets. A valuable vegetable oil is extracted from the seeds, while the ground seed is used to prepare various delicacies including cake and soup. Unlike the red juicy flesh of the watermelon variety, the white flesh of melon fruits has a bitter taste and therefore it is not eaten fresh or uncooked (Lagoke et al., 1983). Melon may be inter-cropped with cassava yam and maize or grown sole (Rice et al., 1986). Melon is consumed in many parts of Nigeria, yet despite its nutritional and commercial valve, its production remains low, even with its good market price, melon is still produced by farmer on a small scale. Melon is a crop that is tolerant to a wide range of environmental conditions; it is planted twice in a year in the study area.

Melon is usually an annual crop grown here in Nigeria. It can be planted as early season crop at the beginning of the rain and thus has the advantage of being sold in the market throughout the year. The estimated total production of melon in Nigeria in 2003 was 175.34 metric tons (PCU/FMARD, 2004)

In Nigeria, melon is inter-planted with other crops like maize, cassava, pepper, yam etc for maximum utilization of the land and also to increase the returns generated from such a production system. Melons being a crop that

grow rapidly within a short time provide farmers with quick returns since they are ready for harvest 3 to 4 months after planting: unlike other crops that are harvested after several months or years (Langer and Hill, 1981).

Melon is used almost exclusively for its seeds, which have an important role in West Africa cookery. Melon seeds are high in fat and protein. Oil can be extracted from the seeds and the residue can be used for human consumption or as an animal fodder. Seeds can be obtained by melon which requires less input such as pesticide than most crops. Melon is supposed to be one of the vegetable crops to be produced on a very large scale and even export to some African countries like Sudan and Ethiopia where the consumption is high, and the extracted yellow oil is in high demand (Schippers, 2000).The production of melon calls for a close examination of its socio-economic characteristics. It is for this reason that this research work has to find solution to the following questions:

Who are the major producers of melon?
What are the costs and returns to melon production?
What are the constraints involved in melon production?

Objectives of the study

The broad objective of this study is to examine the socio-economic characteristics of farmers associated with melon production in Ifelodun Local Government Area, Kwara State.

The specific objectives are to:

1. Highlight the socio –economic characteristics of the farmers growing melon;
2. Determine the costs and returns to melon production;
3. Highlight the constraints faced by farmers in melon production.

RESEARCH METHODOLOGY

This study was carried out in Ifelodun local government area of Kwara State, Nigeria. Ifelodun is the largest local government area in Kwara State with an estimated population of about 206,042 km^2 and an estimated total land area of about 3,435 km^2 (NPC,2006; KWSMI, 2002). The area is located between latitude7°45'N and 9°30'E and longitude 2°30'E and 6°35'E.

It is characterized by dry and wet season. The annual rainfall ranges between 1000 and 1500 mm. Average temperatures between 30°C and humidity range from 35 to 60%. The major source of livelihood and occupation of the people in the area is farming. Farming is traditional in nature with emphasis on the cultivation of crops such as sorghum, cassava, yam, maize and melon (KWSMI, 2002; Mohammed, 2008). Melon is one of the crops majorly grown among farmers in the area.

A two stage random sampling techniques was used in selecting the sample for the study. The first stage involved a random selection of 12 towns and villages from the local government area using the Kwara State village listing as sample frame. The second stage involved a random selection of 10 farmers from the selected towns and villages, a total of 120 farming households growing melon from the local government was used for the study.

The source of data used for this study was basically primary. This involved the use of an interview schedule with a structured questionnaire administered to the farmers. A total of 120 farmers were selected from the farmers growing melon in the study area with the help of the agricultural extension agent working in the selected villages and towns. Data were collected based on the socio-economic variables such as age, sex, educational status, income, costs and returns and constraint faced by the farmers. The response of these farmers forms the primary data used.

Descriptive statistics and budgetary analysis were used to analyze data collected. This involved the use of frequency, ratio and percentages while budgetary analysis was used to analyze the costs and returns to melon production. This is given as:

GM = GR – TVC

Where: GM = gross margin, GR = gross return, TVC = total variable cost.

RESULTS AND DISCUSSION

The social factors of interest in this study were age distribution of the farmer, marital status, family size, level of education, occupation, farm size and family members that help on the farm. It has been represented in frequency tables and shown in Table1.

Age is an important determinant of social-economic status of a population. People wear in energy as they advance in age. Also age has effect on level of awareness and on agricultural production. Older people are not willing to adopt innovations in agriculture because they believe their forefathers practiced farming successfully. But, the older the farmer, the better is his understanding of the social, climatic and economic factors that affect farming and the more experienced is the farmers. Younger farmers are likely to adopt new innovation faster than the older ones. The study revealed that majority of the respondents (81.67%) are married. This shows that the respondents are responsible according to the societal standard and therefore are likely to have some experience of life.

The study further revealed that more than half of the melon farmers (69.17%) in the surveyed area can read and write. Education is regarded as an investment in human capital which is able to raise the skill and quality of the man, narrow his information gaps and increase his allocative efficiency thereby leading to more productive performance (Patel and Anthonio, 1981). Therefore, penetration of new ideas and adoption of new innovation and technology into the society in the study area will be easy. This will in turn increase yield, income and agricultural production in general.

It was also revealed from the study that majority of the respondents (59.17%) are full-time farmers, while others engaged in other occupations apart from farming ranging from civil servant, schooling and artisan such as (mechanics, carpenters, tailors bricklayers e.tc). The implication of this is that, instead for the farmers to use

Table 1. Socio-economic characteristics of the respondents.

Characteristics	Frequency	Percentage
Age (years)		
21-30	8	6.67
31-40	33	27.50
41-50	57	47.50
> 50	22	18.33
Total	120	100
Marital status		
Married	98	81.67
Single	13	10.83
Divorced	3	2.50
Windowed	6	5.00
Total	120	100
Education		
No Education	37	30.83
Primary	41	34.17
Secondary	29	24.17
Tertiary	13	10.83
Total	120	100
Occupation		
Farming	71	59.17
Civil servant	13	10.83
Self Employed/Artisan	31	25.83
Schooling	2	1.67
Applicants	3	2.50
Total	120	100
Farming experience		
1-5	18	15.00
6-10	39	32.50
11-15	48	40.00
16-20	12	10.00
21-25	3	2.50
Total	120	100
Family size		
1-5	32	26.67
6-10	63	52.50
11-15	18	15.00
> 15	7	5.83
Total	120	100
Family member		
1-6	89	74.17
6-10	27	22.50
11-15	4	3.33
Total	120	100

Source: Field survey.

Table 2. Average costs and returns per hectare for sole melon.

Items of costs/returns	Total
Melon yield (kg	57.70
Gross return (₦)	3,750.50
Less	
Variable cost (₦)	
Labour	2,296.78
Seed	120.24
Fertilizer	69.67
Total variable cost (₦)	2,486.69
Gross margin	1,263.81

Source: Field survey.

back the money or income realized from farming into investment in agriculture, they invest the extra income from farming in other business because they believe that farming is not an occupation that gives quick returns. On the other hand, they consider that the time lag between the planting and the harvesting period can be used to run other types of business, which will serve as sources of income to sustain them during this period. That is, to cater for security and diversification of production resources so as to guide against the risk and uncertainties of agriculture.

The result further shows that majority of the farmers had between 6 and 15 years of melon production experience with an average of 11 years of experience. It is believe that majority of the farmers are experienced melon producers. This result also revealed that farmers in the area are more experience in melon production. Also, since experience is gained with age and farming being the major occupation of most of the respondents, therefore, the number of the year of experience in farming can be linked with the age of the farmer. The older the farmer, the more experience he is and the better is his understanding of farming.

The average family size among the 120 respondents was found to be 8. This implies that the farmer will have to be responsible for the feeding, sheltering education, health care and other living expenses of their dependants. These expenses account for low saving at the end of every harvest season. Also, the size of the family sometimes determine the size of land cultivated and the available work forces in the family, which may also determine the yield and net farm income of the farmer. From the study, only an average of 5 family members usually help on the farm this lead to the fact that more of children in the areas now go to school only available for work on weekends and holidays.

Unlike what it used to be, wives now engaged in off-farm occupations such as trading and food processing and no longer regularly help their husband on the farm. This implies that large household size no longer translates into more family labour, which played a less important role in melon production than hired labour. About 88.33% of the respondents were small holders having between 0.01 and 3.0 ha with an average farm size of 1.79 ha per household. Farmers in this category have their farms in various locations. The implication of this finding is that farmers in this category may incur high cost of production in terms of hired labour cost, transportation cost and also untimely scheduling of labour rise resulting from non-consolidation of farms, use of primitive tools. This may likely slowdown the pace of farm management, which will in turn, have a negative effect on output. The total farm size of the respondents is 215.10 ha.

Farm budgeting technique was used to analyze the costs and returns (Table 2). The prevailing market price was used to calculate the cost of variable inputs used, total returns and net farm income so as to calculate the costs and returns.

The labour used consists of family, hired and group labour. The wage rate varies slightly depending on the operation to be performed on the farm. The average wage rate of ₦46.87 per man-hour was used to calculate the total labour cost.

Seeds used were mainly obtained from the market. An average market price of ₦65 per kg of melon seed was used in estimating the total cost of seeds.

The difference between the gross return and the total cost of production gave the gross margin which was calculated to be N1, 263.81 per ha. This implies that melon production is profitable in the study area.

Problems associated with melon production

All the farmers sampled had the primary objective of profit maximization. This is as a result of the fact that melon is mainly not consumed but serves also as soil protector. Table 3 explains the limiting factors of melon production in the area.

The processing of melon after harvesting starts with breaking of fruits after they have been gathered together

Table 3. Problems of melon production.

Factors	Frequency	Percentage
Scooping	40	21.86
Water	49	26.78
Labour	27	14.75
Yield	31	16.94
Credit	23	12.57
Farm inputs	13	7.10
Total	183 *	100

Source: Field survey.*Multiple responses.

during harvesting. After breaking the fruits, they are left for a period of one to two weeks depending on the weather condition and severity of the breakage for the fruits to soften for easy scooping. High temperature favor early softens. Scooping of melon from the fruits is labour intensive and very heavy to carry from one place to another. It is difficult to transport the melon to source of water particularly when large quantities are involved. This problem of scooping scares and discourages prospective melon growers.

Water is required for washing melon seed after harvesting and is highly labour intensive. According to some of the respondents, if one is not very close to a source of water, it will be very difficult for one to wash it because it will require transporting it to where water is available this has been one of the problems affecting melon production.

Other problems found to be confronting farmers include labour. Family labours are mostly used. But when hired labours are used, the amount charged per man- day is too high. This is because labour demand coincides with limited labour supply during melon production season. Poor yield is another problem military against melon production. Problem of poor yield may be as a result of inadequate fertilizer, none use of hybrid seed, late planting period and poor agronomic practices.

The result shows that credit is one of the constraints to melon production. Since the respondents are small-scale farmers, they have low capital base and therefore cannot afford the high cost of inputs. According to the respondents, formal institution do not normally give credit to melon farmers may be because melon is considered not to be popularly grown and given adequate recognition.

The problem of inaccessibility of the farmers to the modern inputs such as fertilizer, improved seeds and machineries, hence they made use of the traditional tools which limit their output and farm size.

CONCLUSION AND RECOMMENDATIONS

Melon production occupies a very important position in vegetable crop production in Ifelodun Local Government of Kwara State, in terms of number of farmers that engaged in its cultivation and its economic value. The ease of cultivation and favourable bimodal rainfall pattern allow for its growth twice in a year. This is a unique characteristic among other crops grown in the local government area. The results from the costs and return analysis revealed that melon production is profitable that is farmers were making profit even through, the level of profit made was low.

Melon production potential in terms of yield and quality of the production has not been fully exploited. Consequently, there is still deficit supply of melon in the country. This could be adduced to the in accessibility of the farmers to the appropriate modern technology (fertilizer, improved seeds), needed machineries, lack of credit facilities, high cost of labour and lack of other necessary social infrastructure facilities.

It is therefore imperative for individual, cooperative bodies, government and non-governmental organization to assist the farmers in these areas of weakness, in order to boost melon production in Nigeria.

Based on the result from the findings, the following policy recommendations are suggested:

1. All existing credit facilities and schemes put in place to assist farmers should be strengthened so that farmers can have access to soft loan, and such loans should be interest free with no stringent condition so that farmers can expand their scale of production;
2. The Agricultural Development Projects (ADP) through the extension departments and other relevant Government Agencies should made hybrid varieties of melon available to farmers. These, the farmers are willing to use if available for high yielding and returns;
3. Farmers should organize themselves in to a formidable cooperative group for collective sourcing of farm inputs and credit at a cheaper rate;
4. Farmers should be encouraged to keep farm records of their activities through the help of the extension services of ADPS, which should try to extend its services to the majority;
5. Government through all its agencies should make

timely provision of machine (tractor) available to farmers for hire at reduced price;

6. Private, public establishment and non-governmental organization should intensify efforts into melon production awareness, utilization, processing and extraction of oil from the seeds, and incorporation of the cake into animal feeds;

7. Government should expand the provision of its social amenities such as good feeder road, water through boreholes so as to reduce water problems during washing and ease problem of transportation.

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