

# Contributions of Melon Production to Livelihood Sustainability of Rural Farming Households in Oyo State, Nigeria.

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## Abstract

The study was carried out to assess the contributions of melon production to livelihood sustainability of rural farming households in Oyo State, Nigeria. Multi-stage sampling technique was used to select 96 respondents for the study. Data for the study was collected with the aid of a well structured interview guide and focus group Discussion. Descriptive statistics was used to describe the objectives while the hypotheses were analyzed using Chi-Square and Pearson Product Moment Correlation (PPMC). Cost and returns analysis was used to compute the profitability of melon production. Result showed that majority (89.58%) of the respondents were less than 50 years old with mean age of 41.00 years. Also, majority (78.12%) were males while 21.88% were females. Further more, (51.04%) of the respondents did not have formal education while 48.96% had one form of education or the other. The mean household size was 5 people. The result also indicated that most (69.79%) of the respondents had been in melon farming for more than 7 years. Estimated average income of the melon farmers for the previous farming season was ₦74,508.50/ha. Cost and returns analysis revealed an estimated sum of ₦23, 16/ha in the previous farming season. Chi Square analysis showed that there was significant association between the respondents' sex ( $\chi^2 = 51.96$ ,  $df = 8$ ,  $p < 0.05$ ); marital status ( $\chi^2 = 59.26$ ,  $df = 18$ ,  $p < 0.05$ ) and their utilization of income derived from sales of melon produced. Also, Pearson Product Moment Correlation analysis shows that there was significant relationship between the respondents' age ( $r = 0.21$ ,  $p < 0.05$ ); household size ( $r = 0.14$ ,  $p < 0.05$ ), level of Education ( $r = 0.87$ ,  $p < 0.05$ ) and their utilization of income derived from sales of melon produced. Also, there was an inverse relationship between constraints to melon production and profit ( $r = -0.19$ ,  $p < 0.05$ ). However, the efficient productivity and profitability of melon were affected by climate change (100%), limited access to agricultural extension service support (98.96%), pest and diseases out break (97.92%), and non-availability of shelling and oil extraction devices (96.80%). The study concluded that melon production was profitable and it contributed to rural farmers' household food security and livelihood sustainability. It was recommended that extension agents should design and provide necessary support that can boost melon production while government should supply subsidized melon-shellers/extractors to support melon farmers in the study area.

**Keywords:** Contributions, Melon production, Sustainability, Rural farmers, Livelihood, Profitability.

## 1. Introduction

Melon (*C. colocynthis*) is well known and widely cultivated in West Africa (Nigeria, Ghana, Togo and Benin) and many other African Countries for the food in the seeds (van der Vossen *et al.*, 2004). Among the *Yorubas* in Southwestern Nigeria, it is known and popularly referred to as *Egusi*. Melon plays vital roles in the farming system and in the well-being of West African rural farmers as a good source of energy, weed suppressants and for soil fertilization (Asoegwu, 1987; Achigan-Dako *et al.*, 2008). It is also used as mulch, leaving high residual nitrogen in the soil after harvesting. Melon is one of the most economically important vegetable crops worldwide and is grown in both temperate and tropical regions (Bisognin, 2002). A high-energy, high-protein concentrate, melon seed ideally complement Africa's prevalent diets based on starch-rich grains (rice, sorghum and maize, for instance) and roots (notably cassava, yam and potato).

Melon is a vital tool against marasmus (lack of calories), kwashiorkor (lack of protein), and other debilitations (Gurudeeban *et al.*, 2010). A traditional food plant in Africa, this vegetable has potential to improve nutrition, boost food security, foster rural development and support sustainable land care (National Research Council, 2006). Melon has been recognized as an affordable source of vitamins and micronutrients especially in the rural areas. There is also a prospect for use of the melon seed in the improvement of infant nutrition in view of its high protein and fat content (van der Vossen *et al.*, 2004). Almost all the big markets in Nigeria, Benin, Cameroon, Ghana, Togo, and other nearby nations sell the seed. Melon is in high demand in tropical markets, especially in the peri-urban and urban markets. It is also exported to Ethiopia and Sudan where the consumption is high and the extracted yellow oil is in high demand (Schippers, 2000).

Farming in sub-Saharan African is characterized by semi-subsistence, low-input and low-productivity (Govereh and Jayne, 2003; Gray, 2005). The melon production systems reflect similar overview with objectives such as income generation, household food security, livelihood, social relationships and seeds for the next cropping season. These objectives have been impaired by the continuous reduction in production and productivity which characterized the Nigerian agricultural sector thereby limiting the ability of the sector to perform its traditional role of economic development (Akubuilu, 2008). Production of melon in Nigeria amounted to 370,000.00ton. Cameroon produced 57,000.00ton; Sudan 45,000.00ton; DR Congo 40,000ton; Central African Republic 23,000.00ton; and Chad 20,000.00ton. Outside Africa, China is important with a production of 25,000.00ton (van der Vossen *et al.*, 2004). This reflected that Nigeria is leading in melon production in Africa by 64.24.00% of total production as against the China production.

To date, very few studies focused on the importance of traditional practices related to African vegetables such as melon, its nutritional value and contributions to rural livelihood. In the Yoruba traditional marriage, melon is regarded as an important bridal gift which symbolizes many happy children for the new couple. Also, the harvest period is likened to a festival time. Both men and women, young and old participate in the post harvesting activities in form of *Aaro* or *Owe* which is a form of rural socialization and integration.

Other major socio-cultural uses of melon include income generation, household food, and as gift to relatives (Achigan-Dako *et al.*, 2008). Melon farmers depend on the income generated from the crop to send their children to school, provide shelter and improve their lives. As a household food, it is the most affordable and suitable dietary sources of vitamins and minerals. It includes other bioactive compounds, that are important protective food and highly beneficial for the improvement of diets, provision of vitality of health and prevention of diseases (de Mello, 2000). Despite the socioeconomic, cultural, agronomic and culinary importance of melon, information is lacking on the cultural background that contributes to the traditional farming system. (Schippers, 2004; Achigan-Dako *et al.*, 2006). It is therefore essential to assess these challenges as it will have bearing on the contributions of melon production to sustainable rural livelihood in the study area.

## 1.2 Objectives of the Study

The objectives of the study are to:

- i. describe the socio-economic characteristics of melon farmers
- ii identify the benefits derived from melon production in the study area
- iii estimate the monthly income realized from melon production in the study area.
- iv estimate the gross margin from melon produced in the study area.
- v determine the respondents' use of income from sales of melon produced
- vi describe the constraints to melon production in the study area

## 1.3 Hypotheses of the study

- (1) There is no significant relationship between the socio-economic characteristics of respondents and their use of income derived from sales of melon produced.
- (2) There is no significant relationship between the constraints experienced by farmers and the profit generated from melon production in the study area.

## 2. Materials and method

### 2.1 Description of the Study Area

Oyo State is one of the six states in south west Nigeria. The State came into existence in 1976 with the division of the old western state of Nigeria. It lies between latitudes 7°10' and 9°23' North of the equator and longitudes 2°25' and 4°30' East of the equator. Oyo State covers a total land mass of 28,454square kilometers. It is bounded partly by Ogun State and partly by the Republic of Benin. The 2013 population figure for the state is estimated at 6,591,589 (NPC, 2013). The topography of the State is lowland in the south which rises to a plateau 40 meters and above in the north. The vegetation pattern of the state is that of rainforest in the south and guinea savannah

in the north, the thick forest in the south gives way to grassland interspersed with trees in the north. The area experiences both the dry and the wet seasons. The rainy season starts from April to October with double maxima of rain in June and late August. Rainfall during the dry season is between 250.00-500.00mm. The inhabitants of the State produce both food and cash crops in arable and permanent tree plantations mostly in mixed cropping systems. They produce vegetable such as *C. colocynthis* (melon), *Amaranthus*, *Celosia*, *Chochorus*, *Abelmoschus esculentus* (okra), Pepper and tomato are cultivated at subsistence level. Also, cash crops like cocoa, kolanut, oranges among others, are grown commercially due to favourable climatic and weather conditions as well as the soil type.

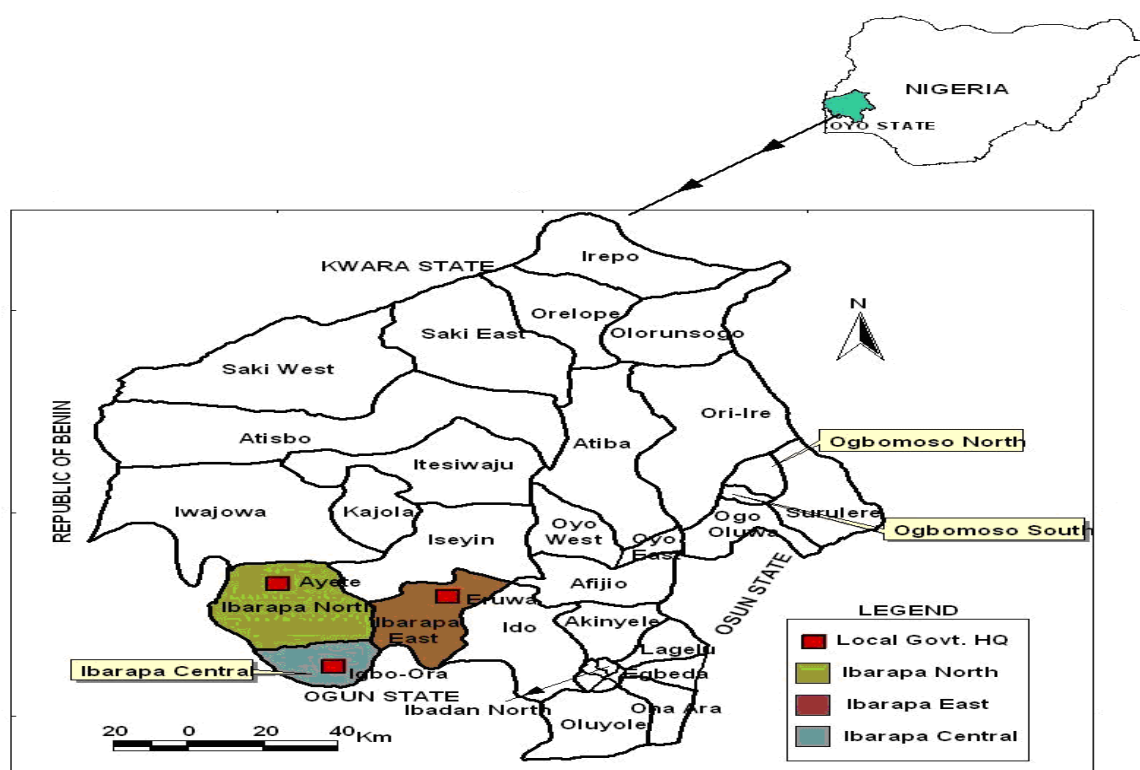


Figure 1: Map of Oyo State showing the Study Locations

## 2.2 Sample Size and Sampling Procedure

Multi-stage sampling technique was used in the selection of respondents for this study. Ibarapa block was purposively selected based on the *prior* information that the area is known for melon production. Ibarapa block is made up of three Local Government Areas (LGAs), which are Ibarapa East, Ibarapa Central and Ibarapa North. Four villages were randomly selected from each of the three LGAs giving a total of 12 villages. The villages selected from Ibarapa East LGA include Okolo, Lagaye, Maya, and Temidire whereas those selected from Ibarapa Central LGA include Sekere, Jagun, Araromi, and Bansa, and those of Ibarapa North LGA include Oye, Temidire, Alabi and Alaagba. The sample size for this study consisted of ninety six (96) melon farmers randomly selected in twelve (12) selected villages in Ibarapa Local Government Areas (LGAs) of Oyo State, Nigeria. Report on the Agronomic survey of Oyo State Agricultural Development Programme (OYSADEP) provided the list of villages and registered farming households used as the sampling frame for the farmers included in the study.

## 2.3 Data Collection Method

The instrument used for the data collection was validated by consulting experts in the field of Agricultural Extension and Rural Development. Items found ambiguous were removed. Test-retest method was carried out with twenty melon farmers who were not part of this study to ascertain the reliability of the instrument.

## 2.4 Measurement of Variables

Age, household size, farming experience, and farm size were measured at interval level while sex and educational level were measured at nominal level. The contribution of melon production to livelihood

sustainability of the farming households was measured by determining the benefits derived from melon produced by these households as well as their use of use of income from sales of melon produced.

Constraints to melon production were operationally measured by the use of three alternative responses. These were; not serious, very serious and extremely serious and they were assigned the scores of 1 point, 2 points and 3 points, respectively. In order to know the extent of the constraint, the average scores of the three alternative responses were calculated. That is, the sum of all the scores divided by 3 i.e. (1+2+3) divided by 3 = 2.0. This implies that, those constraints whose means ranged from 2.0 and above were regarded as major constraints to melon production.

## 2.5 Data Analysis

Simple descriptive statistics such as percentages, means and frequency counts were used to analyze and describe the objectives of the study. Chi Square and Pearson Product Moment Correlation (PPMC) were used to test the hypotheses of the study. Chi Square was used to test the variables measured at nominal level; these are sex, marital status and religion while PPMC was used to test the variables measured at the ordinal and interval levels. These are age, household size, Farming Experience, educational level and farm size. Cost and returns analysis was used to estimate the gross margin of melon production. Gross margin is the difference between the gross income and the total variable cost.

In computing gross margins, apart from considering the differences between the selling and purchase price, expenses incurred before the sales of melon (cost of transportation and rent) were taken into consideration.

$GM = TR - TVC$ , Where;

GM = Gross Margin

TR = Total Revenue

TVC = Total Variable Cost

## 3. Results and Discussion

### 3.1 Socio-Economic Characteristics of Respondents

The results of the analysis in Table 1 showed that the mean age of the respondents was 41 years. About 90% of the respondents were less than 50 years old revealing the presence of young and middle aged individuals who are known to be active and innovative in the study population. This finding is in consonance with Oladoja *et al.* (2006), who stated that people who are young are more prone to risk taking than the older ones. Majority (78.12%) of the respondents were males while only (21.88%) were females. This indicates the dominance of male folk in melon production in the study area. Many (51.04%) of the respondents did not have any formal education while 28.12% attended primary school, 16.67% had secondary school education and 4.17% had tertiary education. This shows very low level of literacy in the study area which in turn may affect the rate of adoption of innovations by the melon farmers.

In the Nigerian Yoruba culture, marriage is a respected institution. It bestows on the people, social status, recognition, and makes them to be considered as being responsible in the community. It could also result in an increased labour availability for crop production activities. The findings of this study shows that, majority (86.465%) of the respondents were married, while very small proportions (6.25%) were single. The others are widowed, separated or divorced. Distribution of the religious affiliations of the respondents showed a predominantly Christian population with majority of the respondents belonging to this religious sect. About 19 percent are Muslims, while 4.17% are traditionalists.

Furthermore, findings showed that the household size of most (65.62%) of the respondents was 5-8 people while 34.38% had 1-4 people with an average household size of 5 people. This indicates that the household size of respondents was relatively large. This finding agrees with Adebite *et al.* (2007), who explained that household size is an important factor in any rural development intervention. Also, in most rural households, the children are made to assist their parents on the farm while also carrying out other household activities. Furthermore, the result indicated that 10.42% of the respondents had been in melon cultivation for about 11-15 years, 59.37% of the respondents had spent between 6-10 years while 16.67% had grown melon for less than 6 years. The mean years of farming experience was 7.65 years. This further shows that melon production is not a new farming practice to the people in the study area. Majority (82.29%) of the respondents cultivated 1-2 hectares of land, while 17.71% cultivated more than 3 hectares. The mean farm size was 1.70 hectares. This shows that most of the melon farmers operated on a small scale farming enterprise.

**Table 1: Distribution of Respondents According to their Socio-Economic Characteristics (n=96)**

Variables	Frequency	Percentage (%)	Mean/Mode
<b>Age</b>			
Below 30	8	8.33	41.00
31-40	50	52.08	
41-50	28	29.17	
51 and above	10	10.42	
<b>Sex</b>			
Male	75	78.12	Male
Female	21	21.88	
<b>Level of Education</b>			
No formal education	49	51.04	No formal education
Primary education	27	28.12	
Secondary education	16	16.67	
Tertiary education	4	4.17	
<b>Marital Status</b>			
Single	6	6.25	Married
Married	83	86.46	
Others	7	7.29	
<b>Religion</b>			
Christianity	74	77.08	Christianity
Islam	18	18.75	
Traditional Worshippers	4	4.17	
<b>Household size</b>			
1-4	33	34.38	5.00
5-6	63	65.62	
<b>Farming experience (years)</b>			
Below 6	16	16.67	7.65
6-10	57	59.37	
11-15	10	10.42	
15 and above	13	13.54	
<b>Farm size (ha)</b>			
1-2	79	82.29	1.70
3 and above	17	17.71	

Source: Field work.

### 3.2 Benefits Derived from Melon Production

The result in Figure 2 showed that all (100.00%) the respondents used melon as food, source of income generation and as seeds for next cropping. Majority (78.70%) of the respondents gave out part of their harvest as gifts to their relatives and friends. The result supports the findings of Achigan-Dako *et al.* (2006) who reported that socio-cultural uses of melon include household food, income generation, gift and seeds. Many (58.33%) of the respondents reported that melon was commonly used as local medicine and 8.33% of the respondents indicated that traditional worshippers used the white melon soup to worship the god of rain (*obatala*) in the study area. Use of melon as local medicine is attributed to its biomedical properties and efficacy in the treatment of some ailments as reported by Gurudeeban *et al.* (2010).

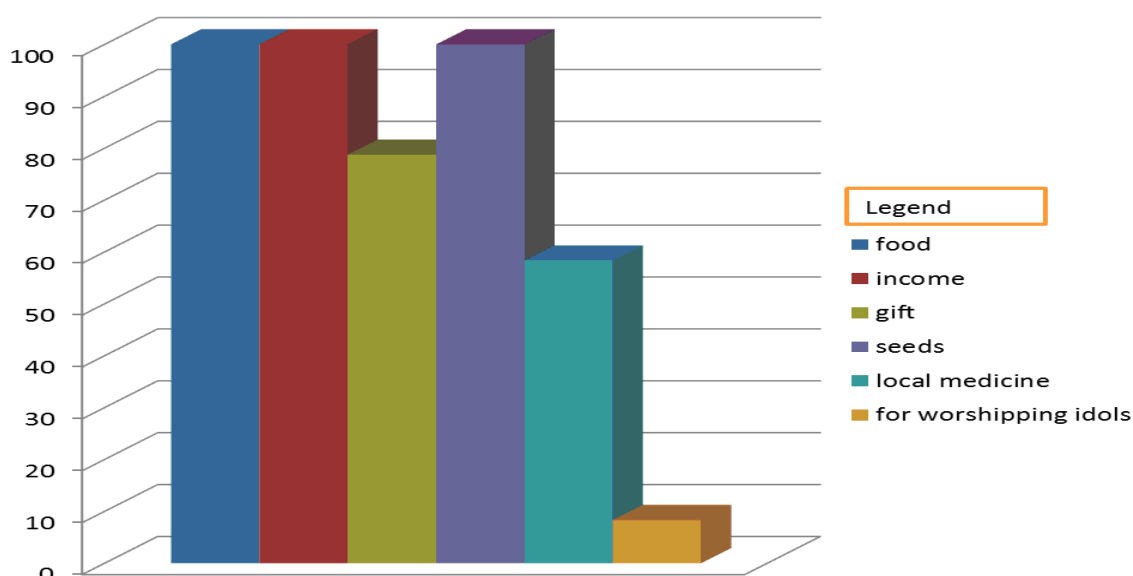


Figure 2: Distribution of Respondents Based on Benefits Derived from Melon Production.  
 Source: Field work.

### 3.3 Estimated Monthly Income Realized From Melon Production

Table 2 reveals the level of income realized by the farming households from melon production. Majority (70.83%) of the farming households realized between ₦90,001, to ₦110,000 which is equivalent to \$563 - \$688 per month from their melon farms. This indicates that, most of the melon farmers earn above the poverty line of \$1.25 per day as stipulated by World Bank in 2005 and cited by Ravallion, Martin; *et al.*, (2009). However, only about 2.08 percent of the melon farmers earned below ₦30, 000 per month. Also, about 7% of the farmers earned between 50, 001 and 70, 000 while the remaining 3.13 percent earned above ₦ 1100,000 per month. This result could suggest that the melon farmers studied are relatively affluent. Their main source of wealth according to the focus group discussion held with the farmers is melon which they usually store and later sell when the prices of melon had risen in the markets.

Table 2: Distribution of Respondents by their Estimated Monthly Income from Melon Production (N = 96)

Income (₦/ Month)	Frequency	Percentage (%)
Less than 30,000	2	2.08
30,001 – 50, 000	5	5.21
50, 001 – 70, 000	7	7.29
70,001 – 90, 000	11	11.46
90,001 – 110, 000	68	70.83
Above 110, 000	3	3.13
<b>Total</b>	<b>96</b>	<b>100.00</b>

Source: Field work.

Note that, ₦160 = \$1.00

### 3.4 Gross Margin Estimation (GM)

Result from Table 3 showed the estimated Gross Margin from melon production in the previous production year, that is year 2012. The results showed an estimated GM of ₦14,008.50. Also, percentage gross margin of 23.16% implies that for every ₦1.00 invested on the farm, the gross profit will be ₦23. 16k. This amount of return on capital from melon production serves as an additional source of income to a farming household. This implies that, melon production in the study area provides options for improved income to the farming households studied.



Table 3: Estimation of Gross Margin of melon

Items	Values
<b>Revenue (₹/ha)</b>	
Average yield (kg/ha)	323.95
Price (₹/kg)	230.00
<b>Total revenue (TR) (₹)</b>	<b>74,508.50</b>
<b>Variable Cost (₹/ha)</b>	
Rent (for hired land)	0.00
Land preparation	20,000.00
Labour	26,000.00
Credit	0.00
Fertilizer	5,000.00
Agrochemicals	2,250.00
Seed	1,750.00
Transportation	5,500.00
<b>Total variable cost (TVC) (₹)</b>	<b>60,500.00</b>
Gross Margin (GM)=TR-TVC	14,008.50
<b>%GM=GM/TVC x100/1</b>	<b>(23.16)</b>

Source: Field work.

Please note, the value in parenthesis is percentage.

### 3.5 Respondents' Use of Income from Sales of Melon Produced

As shown in the findings of table 4, many (67.71%) of the respondents used the income realized from sales of melon produced in purchasing food stuff for the household and this ranked first in their utilization of income from melon. This could be as a result of the subsistence nature of crop farming practiced by the farmers; therefore, they use the income from what they produce to obtain other food stuffs to sustain the family food needs. The result also indicated that, 61.46% of the respondents utilize the income realized from sales of melon to pay for health care services rendered to them. This implies that, after food, good health is required for the individual to be able to properly participate in the day to day agricultural activities. Other uses to which the income realized from melon is being put are; payment of house rent (56.25%), payment of children's school fees (31.25%), expenditure on other Household needs (28.13%), purchase of farm inputs (21.88%). However, only few (15.63%) and (8.33%) utilized the income from melon to build modern houses and purchase clothing materials respectively.

Table 4: Distribution of Respondents by Their Use of Income From Sales Of Melon Produced

Use of Income	*Frequency	Percentage (%)	Rank
Paid Children's School Fees	30	31.25	4 <sup>th</sup>
Built modern House	15	15.63	8 <sup>th</sup>
Purchase Clothing Materials	8	8.33	9 <sup>th</sup>
Payment for Health Care Services	59	61.46	2 <sup>nd</sup>
Paid House Rent	54	56.25	3 <sup>rd</sup>
Purchase of Farm inputs	21	21.88	6 <sup>th</sup>
Purchase of food Stuff for the household	65	67.71	1 <sup>st</sup>
Payment of electricity bill	18	18.75	7 <sup>th</sup>
Expenditure on other Household needs	27	28.13	5 <sup>th</sup>

\*Multiple responses were recorded.

### 3.6 Constraints to melon production

The result in Table 4 showed that all the respondents (100.00%) ranked climatic change (unpredicted rainfall pattern and flooding) as the most serious problem confronting melon production in the study area. The result supported the findings of Lawal-Adebawale and Oyegbami, (2004) that Nigerian farmers largely depend on rainfall for their farming activities but with the persistent variation in rainfall pattern over the years, it had become difficult for the farmers to sustain their production pattern. The situation is further heightened by the contemporary climatic change in which rainfall pattern; sun/heat intensity, evaporation and evapo-transpiration rates and humidity have been greatly altered over the years. This is followed by limited agricultural extension service support (98.96%), pest and diseases (97.92%), and non-availability of shelling and extraction device (96.80%). Similarly, melon production were seriously inhibited by high cost of inputs (seeds, fertilizers and agro-chemicals) (95.80%), lack of storage facilities for melon produced (94.80%) and high cost of agrochemicals (herbicides, pesticides and insecticides) (93.70%). Other constraints were limited credit facilities (87.50%), market information problems (82.29%) and transportation problems (75.00%). This finding corroborates that of Sodiya *et al.*, (2011); von Braun and Torero, (2008) that credit is an important input for expansion of agriculture.

**Table 5: Distribution of Respondents According to Constraints Encountered in Melon Production**

Constraints	ES (3)	MS (2)	NS (1)	Mean Score	Rank
Limited availability of arable land	5(5.21)	21(21.88)	70(72.91)	1.32	12 <sup>th</sup>
Inadequate labour supply	13(13.40)	31(14.40)	156(72.20)	2.67	11 <sup>th</sup>
Limited credit facility (inaccessibility & non-affordability)	84(87.50)	12(12.50)	0(0.00)	2.90	8 <sup>th</sup>
Pests and diseases prevalence	94(97.92)	2(2.08)	0(0.00)	2.98	3 <sup>rd</sup>
Limited agricultural extension services support	95(98.96)	1(1.04)	0(0.00)	2.99	2 <sup>nd</sup>
High cost of inputs (seeds & fertilizers) supply	92(95.80)	4(4.20)	0(0.00)	2.96	5 <sup>th</sup>
High cost of agro-chemicals (insecticides, pesticides & herbicides)	90(93.75)	6(6.25)	0(0.00)	2.94	7 <sup>th</sup>
Non-availability of shelling and extraction device	93(96.80)	3(3.20)	0(0.00)	2.97	4 <sup>th</sup>
Lack of storage facility	91(94.80)	5(5.20)	0(0.00)	2.95	6 <sup>th</sup>
Market problem ( no access to market information, agro-industries & guaranteed market)	79(82.29)	8(8.33)	9(9.38)	2.73	9 <sup>th</sup>
Climatic change (unpredicted rainfall pattern and flooding)	96(100.00)	0(0.00)	0(0.00)	3.00	1 <sup>st</sup>
Preference for other crop cultivation over melon	0(0.00)	13(13.40)	83(86.60)	1.14	13 <sup>th</sup>
Transportation problem	72(75.00)	20(20.80)	4(4.20)	2.71	10 <sup>th</sup>

Source: Field Survey, 2013.

All the values in parenthesis are percentages.

ES - Extremely Serious

MS - Moderately Serious

NS - Not Serious



#### 4. Testing of Hypotheses

##### 4.1 Test of Relationship between Selected Socio-Economic Characteristics of Respondents and their Use of Income Derived From Sales of Melon

The Hypothesis that stated that: *There is no significant relationship between the socio-economic characteristics of respondents and their utilization of income derived from sales of melon produced* was tested using Chi Square and Pearson Product Moment Correlation (PPMC). The results are presented in Table 6a and 6b.

**Table 6a: Relationship between Respondents' Selected Socio-Economic Characteristics and their Utilization of Income Derived from Melon Production**

Variables	$\chi^2$	Df	p-value	Decision
Sex	51.96	8	0.04	S
Marital Status	59.26	18	0.00	S
Religion	38.63	18	0.09	NS

Source: Field work.

df = degree of freedom

P = Probability value

S = Significant at 0.05 level of significance

N = Not Significant

**Table 6b: Relationship between Respondents' Selected Socio-Economic Characteristics and their Utilization of Income Derived from Melon Production**

Variable	R	p-value	Decision
Age	0.21	0.03	S
Household Size	0.14	0.04	S
Farming Experience	0.09	0.22	NS
Level of Education	0.87	0.00	S
Farm Size	0.04	0.56	NS

Source: Field work.

P = Probability value

S = Significant at 0.05 level of significance

N = Not Significant

The result of the Chi Square analysis (table 6a) showed that there was significant association between the respondents' sex ( $\chi^2 = 51.96$ , df = 8,  $p < 0.05$ ); marital status ( $\chi^2 = 59.26$ , df = 18,  $p < 0.05$ ) and their utilization of income derived from sales of melon produced. Also, The Correlation coefficient obtained from the statistical analysis (table 6b) shows that there was significant relationship between the respondents' age ( $r = 0.21$ ,  $p < 0.05$ ); household size ( $r = 0.14$ ,  $p < 0.05$ ), level of Education ( $r = 0.87$ ,  $p < 0.05$ ) and their utilization of income derived from sales of melon produced. The implication is that, utilization of income derived from sales of melon produced are directly related to the sex, marital status, age, household size and level of education of the respondents.

##### 4.2 Test of relationship between Constraints to Melon Production and Profit

The result revealed that constraints to melon production were significantly related to the profit generated at 5% level of significance ( $r = -0.19$ ,  $p < 0.05$ ). The negative sign implies that, the more severe the problems are, the lower the profit realized from melon production in the study area.

**Table 7: Relationship between Constraints to Melon Production and Profit**

Variable	R	p-value	Decision
Problems	-0.19	0.01	S

Source: Field work.

P = Probability value

S = Significant at 0.05 level of significance

## 5. Conclusion and Recommendations

It can be established from this study that melon production was profitable. It contributed to rural farmers' household food security, served as income to farmers, gift to relatives, seeds for next cropping season and as local medicine in treatment some ailments. However, a number of challenges are impediments to the full potential of melon in the study area.

Based on the findings of the study, it is hereby recommended that:

1. Extension agents should design and provide necessary supports that can boost melon production in the study area.
2. Farm inputs such as organic manure and improved varieties of melon seeds should be made available at affordable prices by agro service providers to the melon farmers so as to boost the production of melon.
3. Government should supply subsidized melon-shellers/extractors to the study area.
4. Agro-meteorologist should extend their weather forecast results to the melon farmers through improved extension service system.

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