INTERNATIONAL JOURNAL OF SCIENCE AND NATURE

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CONSTRAINTS IN CASHEW PRODUCTION AMONG CASHEW FARMERS IN SOUTHWESTERN NIGERIA

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ABSTRACT
Cashew production in Nigeria has some constraints ranging from production via processing constraints to marketing. This study was therefore carried out to determine the severity of constraints in cashew production in Nigeria. The study was carried out in Southwestern Nigeria. Multi-stage random sampling technique was used to select 63 cashew farmers from the study area. Information was collected from the respondents with the aid of structured questionnaire and the data retrieved from the information collected was analysed using descriptive statistics as well as multi-variate regression analysis. Result shows that majority (84.14%) of the farmers are still in their active age (60 years and below) and most (68.49%) of the farmers are having more than ten years of cashew farming experience. However, majority (87.30%) of the farmers are small scale farmers (5 hectares and below). Regarding the severity of constraints, most respondents considered farm activities as very severe constraints while most farmers regarded age of farms and inadequacy of labour as severe constraints. However, most farmers considered access to market information and inadequate credit facilities as not severe constraints. The determinants of cashew production as discovered by the study are age of farmer ($p< 0.1$), age of cashew trees ($p<0.05$), farm size ($p< 0.1$) and source of cashew planted ($p< 0.1$).

KEYWORDS: cashew, constraints, farmers, production.

INTRODUCTION

Cashew is one of the most important agricultural commodities in Africa. It has contributed to Gross Domestic Product (GDP), National Income (NI), and foreign exchange earnings of many cashew producing States in Africa. Cashew serves as a major source of livelihood to many smallholding farmers in Eastern and Central part of Nigeria (Topper *et al.*, 2001). About 3.4 million tons of cashew is produced worldwide in 2009 (FAO, 2011), and one- third of the world cashew production comes from Africa with 50% of the continent export from Nigeria (FAO, 2011). Cashew industry plays a key role in the economic development of many Africa states; it has been a means of achieving the Millennium Development Goals (MDGS) through economic empowerment of small holder farmers and rural women. Cashew production creates employment generation and small medium scale industrialization in the rural areas of Nigeria. Cashew is grown in thirty States of Nigeria and twenty seven of these states grow cashew as cash crops. The cashew growing States are classified as major and minor cashew growing states. The major cashew growing states are Central and South Eastern of Nigeria. Here, cashew is grown as main crop without combining with other crops. On the other hand, the minor producing State includes, Southwest, South-South, and North Eastern State. These states combine cashew with other cash crops such as cocoa, oil- palm, rubber, kola, cereals and pulses (Topper *et al.*, 2001). The constraints militating against cashew production are production constraints- biotic, environmental, breeding, climatic and land; marketing constraints and processing constraints. Production constraint results from damages from different insect species at different stages of production. These result into high loss of yield. The sucking pest attack various parts of the plant, it attacks the leaf causing black lesion on petioles or the leaf midrib or causing black angular spots on the leaf surface. It also attacks the stem which appears as a discolored and lesion which also occurs on fruits and developing nuts. In situation of high infestation of these insect on a farm, it eats up the whole shoot and it dies or the entire tree looks burnt. This brings about great loss of income to farmer (Aliyu, 2007a). Drying of the flower panicles is frequently reported as constraint in Southwestern Nigeria. The seriousness of the infestation varies from tree to tree. The cause can be genetic, environmental pollution, rainfall during flowering or nutrient deficiencies (Aliyu, 2007a). Problem of good planting materials, selection, introduction of new materials, establishment of germplasm trials for short, medium and long term breeding and distribution of planting materials to farmers are other constraints affecting cashew production. Also, the multiplication of good materials for distribution, providing farmers with the right genotype, funding for future regional breeding program should be given highest priority. Also, is the introduction of bud grafting techniques to produce clones (Aliyu, 2007b). Extension services are another constraints militating against the production of cashew in Southwest Nigeria. This is very difficult, complex issue in dealing with numerous and widely spread rural farmers. The procedure/cost of the training is too expensive and unsustainable for the rural famers to undertake. The activities of the extension agents are carried to the

"Contract" farmers whereas the information is meant for the farmers on the field who are supposed to be the real beneficiary of the extension activities.

Marketing Constraints results from the problem of selling the crops in the Southwestern part of Nigeria. When the produce are taken to the market, the price offered for them are too low leaving no margin for the poor farmer who has incurred some cost in the process of production, transportation, and even payment of duty on the produce in the market. Also the farmers lack information on current market price, resulting in exploitation from the middle men. Farmers from the rural areas received lower prices due to higher transportation cost of moving the produce to the market. No premium price for the fruits and nuts of better quality thereby discouraging the poor farmers from improving the quality of it produce. Therefore, considering the effects the various constraints are having on farmers' productivity, it is quite imperative that this study which investigates the constraints in cashew production among cashew farmers in the study area is carried out.

METHODOLOGY

The study was carried out in Southwestern Nigeria, specifically Oyo and Osun States. Southwestern Nigeria is one of the six geo-political zones in Nigeria and is made up of six states, which are Oyo, Osun, Ogun, Ondo, Lagos and Ekiti States. Southwestern Nigeria covers about 114,271 square kilometers land area. According to 2006 population census, the total population of the zone is 27,581,992. Agriculture forms the predominant occupation of the populace and one of the major cash crops grown in the zone is cashew. Multi-stage sampling technique was used to select respondents. The first stage was the purpose sampling of two cashew producing States which are Oyo and Osun States. Oyo and Osun States are the major cashew producing states in the Southwestern Nigeria. The second stage is the random selection of two Local Government Areas (LGAs) from each State, making four LGAs from the two States. The third stage is the random selection of one community from each LGA, thus making a total of four communities from the two states. The last stage is the random selection of 63 respondents (cashew farmers) from the four communities. Information was collected from the respondents with the aid of structured questionnaire and the data retrieved from the information collected was analysed using descriptive statistics as well as multi-variate regression analysis. Descriptive statistics was used to describe the socio-economic variables of the respondents as well as to analyse the constraints faced in cashew production by the cashew farmers in the study area. Multi-variate regression model was used to analyse the determinants of cashew production in the study area.

The model is stated thus:

$$\ln YEILD = \beta_0 + \ln\beta_1 AGEF + \ln\beta_2 GENDER + \ln\beta_3 EDU + \ln\beta_4 MAR + \ln\beta_5 FMEXP + \ln\beta_6 AGEC + \ln\beta_7 ASS + \ln\beta_8 FMSZ + \ln\beta_9 TYPE + \ln\beta_{10} SOURCE + \ln\beta_{11} PRICE + \ln\beta_{12} INFO + \sigma_i$$

Where:

YEILD = Yeild of cashew (Kg);
AGEF = Age of farmer (Years);
GENDER = Gender of farmer (Male = 1, Female = 2);
EDU = Level of education of farmer (No formal education =1, Primary education = 2, Secondary education = 3, Tertiary education = 4);
MAR = Marital status of farmer (Single = 1, Married = 2, Divorced =3, Widowed = 4);
FMEXP = Farming experience of the farmer (Years);
AGEC = Age of cashew trees (Years);
ASS = Association membership (Member = 1, Non member = 2);
FMSZ = Farm size (Ha);
TYPE = Type of cashew planted (Jumbo size = 1, Medium size = 2, Small size = 3);
SOURCE = Source of planting material (Ministry of Agric. = 1, ADP = 2, CRIN = 3; Friends = 4);
PRICE = Price of cashew nut (N/Kg);
INFO = Source of information for cashew farmers (Extension agent = 1, Radio = 2, CRIN = 3, Newspaper = 4, Bulletins = 5);
β = Estimates;
ln = Natural logarithm;
σ = Random error term.

RESULTS & DISCUSSION

The results of the socio-economic characteristics of the respondents were presented in Table 1. The result shows that the mean age of the respondents was 48 years and 84.14% of the respondents fell within the age 60 years and below. Hence, most of the farmers are still in the active stage and this is a positive indicator to an increased farmers' productivity since the farmers at the age bracket will still have vigour to work more. The age distribution may also have positive impact on the farm size since relatively younger people are stronger and are expected to cultivate larger farms than older people (Oluyole *et al.*, 2011). It could also be observed that the substantial proportion (93.65%) were males. The dominance of the male over the females may be attributed to the fact that male children are considered as the inheritants of farm land in the study area. Also, females are involved in off-farm activities such as buying and selling of farm produce, storage of crops and packing of farm produce while their male counterparts are highly involved in tree crop production most especially cocoa in the study area. This is in consonance with Adamu *et al.*, 2006, who stated that majority of rural women engaged in off-farm activities such as packing of farm produce, buying and selling of farm produce, storage of crops among others. Also cashew production requires routine management practices that are considered too strenuous for the female to cope with. The result of socio-economic characteristics also showed that only 44.44% of the total respondents had formal education while just 20.64% had post primary education. This is a negative pointer to improved productivity as the level of education is a tool with which an individual could be efficient at whatever endeavour being undertaken by the individual (Oluyole and Usman, 2006). The mean farming experience of the respondent farmers was 17 years and 68.49% of the total respondents were having more than 10 years of farming experience. This implies that larger percentage of the cashew farmers were experienced, who had spent many years in cashew farming. This could influence their productivity and their ability to manage any constraints that may come on their way in the course of

their cashew farming. As regards the farm size, a high proportion of the respondents (87.30%) had not more than five hectares of farm while only 12.7% of the total respondents had between six and ten hectares of farm. This however shows that most of the respondents were small scale cashew farmers. However, the reason given by most of the farmers for not expanding their farms was lack of fund.

TABLE 1. Socio-economic characteristics of the respondents

Variables		Frequencies	Percentages
Age (years)			
≤ 40		26	41.27
41-60		27	42.86
>60		10	15.87
Total		63	100.00
Mean	48		
Std dev.	13.46		
Minimum	25		
Maximum	76		
Gender			
Male		59	93.65
Female		4	6.35
Total		63	100.00
Level of education			
No formal education		35	55.56
Primary education		15	23.81
Secondary education		9	14.29
Tertiary education		4	6.35
Total		63	100.00
Marital status			
Single		4	6.35
Married		52	82.54
Divorced		6	9.52
Widow		1	1.59
Total		63	100.00
Farming experience (years)			
≤10		23	31.51
11-20		24	43.09
>20		16	25.40
Total		63	100.00
Mean	16.9		
Std. Deviation	12.24		
Minimum	1		
Maximum	60		
Age of cashew trees (years)			
≤10		24	38.10
11-20		24	38.10
>20		15	23.80
Total		63	100.00
Mean	18		
Std. Deviation	13.09		
Minimum	1		
Maximum	60		
Farm size (Ha)			
≤5		55	87.30
6-10		8	12.70
>10		0	0
Total		63	100.00
Mean	1.95		
Std. Deviation	2.09		
Minimum	0.4		
Maximum	10.0		

Source: Field survey, 2012.

Table 2 shows the severity of constraints encountered by cashew farmers in the study area. The results showed that 33.87% of the respondents admitted that age of farms was very severe to them while 30.65% of the farmers claimed that the constraint was not severe. It is quite obvious that more proportion of the respondents admitted that the constraint is very severe, this is because age of farm is a very important factor in farms' productivity. Younger farms are more productive than older farms. It could also be observed that 38.10% of the respondents claimed that farm activities are very severe constraints. This is quite obvious in as much that if a farm activity is not carried out at the appropriate time, it could become a severe problem for farmers. The greater proportion of the respondents

(42.86%) claimed that access to market information is not a severe constraint to them. This might be due to the fact that most cashew farmers are always in farmers' group thereby making it easier for them to receive information concerning their farming business. A total of 66.66% of the respondents agreed that inadequacy of labour is a severe problem. This finding is in line with Oluyole *et al*, (2013) who claimed that labour is a major constraint in peasant agricultural production especially during planting, weeding and harvesting and hence the availability of labour has been found to have impact on planting precision, better weed control, timely harvesting and crop processing. The result on inadequacy in credit facilities in which the majority (63.49%) of the respondents claimed that it is not a severe problem is in contradiction with some studies who claimed that inadequate credit facilities is a problem to farmers. The result might be due to the fact that some peasant farmers do not seek for credit facilities to run their farms. Hence, they are always satisfied with their equity capital.

TABLE 2. Severity of Constraints Encountered by Cashew Farmers

Constraints	Very severe	Severe	Not severe
Age of farms	21 (33.87%)	22 (35.48%)	19 (30.65%)
Farm activities	24 (38.10%)	21 (33.33%)	18 (28.57%)
Access to market information	14 (22.22%)	22 (34.92%)	27 (42.86%)
Inadequacy of labour	19 (30.16%)	23 (36.51%)	21 (33.33%)
Inadequate credit facilities	2 (3.17%)	21 (33.33%)	40 (63.49%)

Source: Field survey, 2012.

Table 3 shows the result of the regression analysis. Double-log regression result was chosen based on the number of dependent variables that are significant, the value of the coefficient of multiple determinations (R^2), the F-value as well as the value of the standard error. The table showed that R^2 is 0.5169 meaning that the independent variables can explain 51.69% of the variations in dependent variable. The result shows that out of the twelve explanatory variables used, only four variables were significant, these are age of farmer, age of cashew trees, farm size and source of cashew planted. Age of the respondents significantly affected cashew production in the study area ($p< 0.1$). This is due to the fact that the younger the farmer, the more the ability to be efficient and hence the more will be the productivity of the farmer. Age of cashew trees significantly affected cashew production ($p<0.05$). Cashew trees that are not too old are liable to bear more fruits than the old ones. Farm size of the respondents was also found to significantly affect the production level of cashew in the study area ($p< 0.1$). This is so because the more the hectarage of a farm, the more will be the output from the farm (especially if the farm is given the desired agronomic/management practices). Source of cashew planted was also found to be significant ($p<0.1$). The result is expected because cashew seedlings obtained from a reputable source such as research institute is expected to give more yield than the one from an open market.

TABLE 3. Result of Regression Analysis

Variable	Coefficient	p_ values
Constant	-6.656698	0.219
Age of farmer	2.002861	0.068
Gender of farmer	-2.213078	0.253
Educational status of farmer	-0.177065	0.806
Marital status of farmer	1.49683	0.350
Farming experience	0 .0182921	0.972
Age of cashew trees	2.5568108	0.048
Association membership	-0.4506173	0.775
Farm size	2 .0023889	0.065
Type of cashew planted	-0.9643378	0.319
Source of cashew planted	1.618378	0.074
Price of cashew	0.0359223	0.864
Source of information	0.1561471	0.757
R2	0.5169	
Adjusted R2	0.4334	

Source: Field survey, 2012.

CONCLUSION

Most of the farmers are still in their active age and majority of the farmers are having more than ten years of cashew farming experience. However, majority of the farmers are small scale farmers having less than five hectares of farmland. Regarding the severity of constraints, most respondents considered farm activities as very severe constraints while most farmers regarded age of farms and inadequacy of labour as severe constraints. However, most farmers considered access to market information and inadequate credit facilities as not severe constraints. The determinants of cashew production as discovered by the study are age of farmer, age of cashew trees, farm size and source of cashew planted.

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