Involvement of Female Headed Farm Households in Cocoyam Production in Okigwe LGA, Imo State, Nigeria: Empirical Analyses

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Abstract

This study analyzed the involvement of female headed farm household in cocoyam production in Okigwe Local Government Area (LGA), Imo State, Nigeria. Multistage random sampling technique was employed in collecting data from sixty (60) female headed farm households. The data collected were analyzed using descriptive statistics (mean, frequencies and percentages), likert rating scale, and probit regression. Results on Socio Economic Characteristics of the Respondents showed the mean age of the respondents as 43.82years old, while cumulatively, 93.33% were literate, possessing diverse formal educational levels ranging from primary school education to tertiary school education and the mean household size of the respondents was 4.47 persons. About half (50.00%) of the respondents had farm size of between 0.6-1.0 ha. The result on extent of involvement in cocoyam production showed that the respondents participated in planting with mean value of 4.3, which ranked highest, followed fertilizer application (4.12), cutting of cocoyam corm (4.10) and harvesting (3.30). The result also showed that the farmers were not involved in land clearing (1.5). The probit regression analysis on factors influencing involvement of female headed farm households showed that educational level, farm size, annual income and quantity of cocoyam produced were significant positive determinants influencing involvement of female headed farm households in cocoyam production. With respect to the constraints militating against cocoyam production by female headed farm households, the result showed that all the variables considered were serious constraints to cocoyam production. Lack of access to credit (2.92), Unavailability of improved cocoyam minisett (2.72), Inadequate farm land (2.67) and Difficulties in procurement of fertilizer (2.58) were the most serious constraints to cocoyam production in the study area. The results therefore call for policies aimed at encouraging the younger female farmers to get more involved in cocoyam production by giving them access to land to increase production. Policies that will also mitigate the constraints militating against production are also advocated for.

Keywords: Cocoyam, Female Headed and Farm Households

Introduction

Root and tuber crops sub-sector of agriculture remains the key to food security and poverty reduction in Nigeria. This is because most households are dependent on production, processing and marketing of root and tuber crops for food, income and employment. Roots and tubers are staple crops cherished worldwide for food security and economic empowerment of farmers who are highly dependent on them as good source of food, cash and income (Amadi *et al*., 2011; NRCRI, 2011; Nweke, 2004). Important root and tuber crops in Nigeria include; cassava, cocoyam, yam, sweet potato, potatoes, ginger and turmeric. Cocoyam ranks third in importance after cassava and yam among the root and tubers crops cultivated in Nigeria (FAO, 2005; NBS, 2006; Okoye *et al*., 2008). This is because; Nigeria has consistently

maintained her leadership position as the largest producer of cocoyam in the world. As a consequence, any discussion on cocoyam in the world cannot be complete without reference to Nigeria. Cocoyam (*Xanthosoma* and *Colocasia* spp) is an important staple food in the plant family, grown mainly in South East and South West part of Nigeria (Onyenweaku *et al*., 2005; Chukwu *et al.,* 2009). It is also a food security crop grown by poor farmers, especially women who often intercrop it with yam, maize, plantain, banana, vegetable (Ikwelle *et al*., 2003).

Studies (Nweke *et al.*, 2001; FAO, 2005) have found that both men and women make significant contributions in cocoyam production in Nigeria. The cocoyam production chain reflects gender roles for men

and women in production activities (Nweke and Tollens, 2002). For instance, Anyiro et al. (2013) reported that majority (70.0%) of the female farmers in Anambra State carry out almost all the production activities of cocoyam more than the male farmers. In the view of FMWA (2006), women are responsible for carrying out about 70% of agricultural labor and 60% of food processing and value addition especially in some root and tuber crops (cocoyam, cassava) production in Nigeria. This assumption was supported by Ezedinma et al. (2006), that 70% of the labour involved in the processing and value addition of cassava in Nigerian is done by women in rural areas. This assumption undermines the women's involvement in cassava processing and value addition (Oladipo et al., 2011).

Production of cocoyam has not been given priority attention in Nigeria, despite its wonderful attributes. It still suffers a lot of neglect and abandonment. The involvement of farmers in cocoyam production is significantly low when compared to other crops such as yam and cassava. This scenario might be due to its inability to earn foreign exchange and its unacceptability to the high income groups for consumption and other purposes (Okoye et al., 2007). Cocoyam production in South Eastern Nigeria is threatened by some factors such as the cocoyam root rot blight complex, and high cost of labour; which is almost entirely manual (Okoye et al., 2008). Also, the preference of other crops to cocoyam in household production, and consumption decision became fundamental reasons for its neglect and underutilization (Okoye et al., 2008).

Okoye et al. (2007) pointed out that women farmers for several years have been the pillars of cocoyam production. Unfortunately as noted by Durno and Stuart (2005), they are not recognized as farmers and are not critically involved in the process of farm problem analysis, planning and decision making, or provided with the training, credit and support they need. They equally noted that development opportunities are usually offered to those who are better off and better educated, majority of whom are men. Many extension programmes are focused on the "family headed"; that is the husband as women are considered as helpers in the farm.

Dimelu et al. (2009) indicated that nearly all tasks connected with cocoyam production are performed by rural women, with the exception of tree cutting and other heavy land preparation which are performed by men. Unfortunately, Durno and Stuart (2005) noted that these women are not recognized and are not provided with the adequate training, credit and support they needed, thus having negative effect on adoption of technologies that will improve their products. As an important staple food in Nigeria, any attempt to improve the productivity of cocoyam would be a right step towards the resolution of the food crisis. This study is further justified by the need for a better understanding of production performance of the farmer as this is an issue of concern to government,

research and individual planners. This study is essential to understand the nature of the constraints men and women face in order to effectively help men and women farmers because failure to take into account gender relationships leads to the marginalization of the disadvantaged sector of the society and a large part of the agricultural work force. The study specifically described socio-economic characteristics female headed farming households in the study area, examined level of involvement of female headed farming households in cocoyam production, determined factors influencing women involvement in cocoyam production and identified perceived constraints to cocoyam production among female headed households in the study area.

Methodology
Study area
The study was carried out in Okigwe LGA of Imo State. The LGA is one of the LGAs that make up Imo state. Okigwe has common boundaries with Ideato in the South, Mbano in the East, Lopa in the West and Uturu in the North. It is located at approximately 5^{0} 56′ degrees North of the equator and about 7^{0} 24′ degrees East of the Greenwich meridian. Okigwe has a population of 535,765 (NPC, 2006). The area of study has marked seasonal variation in rainfall and temperature distribution. Dry season as from November to March and rainy season from April to October with mean annual rainfall range of 1500mm to about 2500mm. Temperature is generally high during the day season, particularly between the months of March to April. The mean monthly temperature in the region ranges between 20°C to 30°C.

Sampling Technique
A multi stage random sampling technique was adopted in the selection of samples from the population. Stage One: Two (2) blocks were randomly selected from Okigwe agricultural zone. Stage two: five (5) circles were randomly selected from each of the selected blocks making a total of ten (10) circles. Stage three: six (6) female headed farm households were randomly selected from each of the selected circles giving a sample size of sixty (60) respondents.

Method of Data collection
The study employed primary data. The primary data were elicited for this study by use of pre-tested and structured questionnaire. The questionnaire was administered on farming households during the survey. Method of questionnaire administration was personal interviews.

Data analysis
Data were analyzed with the use of descriptive statistics such as table, means, frequency and percentages. Inferential statistics such as the 5 points likert scale and probit regression were also used.

Model specification
Mean score following a 5 point likert type rating scale

was used to estimate the level of involvement in cocoyam production thus; Always (5), Occasional (4), Often (3), Seldom (2), Not involved (1). The scale is expressed thus;

$$X = \frac{\sum Fn}{N} \quad ...... (1)$$

Where, X = mean level of awareness, $\sum$ = Summation, F = Frequency, n = Likert numerical value, N = Number of respondents.

$$X = \frac{1+2+3+4+5}{5} = \frac{15}{5} = 3.0 .... (2)$$

Respondents with rating score of 3.0 and above were regarded as having being involved in cocoyam production, while respondents with rating score less than 3.0 were regarded as not being involved in cocoyam production.

Constraints militating against cocoyam production was estimated with a 3 point rating scale, as Very serious (3), Less serious (2), Not serious (1). This is expressed as equation 1, where;

$$X = \frac{1+2+3}{3} = \frac{6}{3} = 2 .... (3)$$

Constraints with rating score of 2.0 and above were regarded as having serious constraints, while respondents with rating score less than 2.0 were regarded as not being serious constraints.

The probit regression model used to estimate the determinants of probability of involvement in cocoyam production is specified as:

$$Y_{=0,1} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + e .... (4)$$

Where;
Y = Probability of involvement in cocoyam production (1=Respondents with rating score of 3.0 and above were regarded as having being involved in cocoyam production, 0= while respondents with rating score less than 3.0 were regarded as not being involved in cocoyam production)
X_1 = Marital status (married = 1, otherwise = 0)
X_2 = Age of respondents (years)
X_3 = Level of education (years)
X_4 = Household size (numbers)
X_5 = Farm size (ha)
X_6 = Farm Income (N)
X_7 = Quantity produced (kg)
X_8 = Farming experience (years)
β_0 = Intercept
$\beta_1 - \beta_8$ = Estimated parameters
e = Error term.

Results and Discussion
Socio Economic Characteristics of the Respondents
Age distribution of respondents is presented in Table 1. It is evident from the table that 41.67.0% of the respondents in the study area were within the ages of 41 and 50 years, while 30.00% were within the age of 31 and 40 years. The age of the respondents in table 1 has a mean of 43.82years. This suggests that cocoyam production is an enterprise that demanded commitment in management which was provided mainly by able-bodied individuals within the workforce age bracket. This is in agreement with the findings of Onyemauwa *et al.* (2007) that women in their 30s, 40s and early 50s take active part in food crop production. The finding also consolidates Ezeh *et al.* (2012) that young farmers who are physically and mentally alert would be able to learn new concepts about better and improved technologies of agricultural production. Table 1 also revealed that 50.00% of the respondents attained secondary school education, while 30.00% had primary school education. In summary, 93.33% of the respondents were literate, possessing diverse formal educational levels ranging from primary school to tertiary school education. These may enhance their efficiency in their production. Level of education is known to contribute positively to agricultural production efficiency (Onyenweaku and Nwaru, 2005), because the level of education attained by a producer not only increases his/her income, also ability to understanding and evaluate new production techniques (Obasi, 1991). Possession of literacy (ability to read and write) would enable farmers to better utilize effectively whatever available resources in the area. The result also revealed that 55.00% of the respondents in the study area had household size of between 4 and 6 persons, while 25.00% had household sizes between 1 and 3 persons, with mean household size of about 4 persons. The implication of this is that, there is provision of labour for farm work (Okolo, 2007). This also implies that cocoyam producers in the study area could hire labour to augment family labour. In the absence of well-functioning labour markets, larger households face little labour bottlenecks at critical points in the farming cycle (Ezeh *et al.*, 2012). The distribution of the respondents according to farm size showed that 30.00% had between 0.1 and 0.5 ha of farm land, while 50.00% had between 0.6-1.0 ha of farm land with average farm size of 0.79 hectare. This is a clear indication that the women cassava farmers in this area were mostly subsistence and resource poor farmers. This result merely confirmed the observation of Onumadu (2009) that rural farmers generally have small holdings.

Rural Women Involvement in Cocoyam Production
Table 2 shows the rating scale analysis of level of involvement of female farm households in cocoyam production among the farmers in Okigwe LGA of Imo State. The results show that the respondents participated in weeding with mean value of 4.43 which ranked highest, followed by planting with a mean value of 4.23, fertilizer application (4.12), cutting of cocoyam corm (4.10) and harvesting (3.30), in that order. The Table also shows that the women farmers are not involved in land clearing (1.5), and ridge preparation (1.57). This is because this segment cannot withstand the drudgery involved in land clearing.

Factors Influencing Rural Farm Women's Involvement in Cocoyam Production
The probit regression estimate of factors that influenced rural farm women's involvement in the cocoyam

production in Okigwe LGA of Imo State is shown in Table 3. Overall, the model posted a log likelihood value of -22.892, a pseudo R^2 value of 0.4194 and a goodness of fit chi-square value of 33.08 which is statistically significant at 1.0% level. In the model, six out of eight explanatory variables were statistically significant at given levels and these include; marital status, age, household size, farming experience, income and farm size. In this table, a positive sign on the variable's coefficient indicates that higher values of the variable increase rural farm women involvement in cocoyam production. Specifically, the coefficient of age was negatively related with involvement in cocoyam production and significant at 5.0% level. This implies that as the age of farmers increased, their probability of involvement in cocoyam production decreases. This is tandem with *a priori* expectation and agrees with the findings of Ezeh *et al.* (2012), Onyenweaku and Nwaru (2005), and Ajibefun and Daramola (2003) that increasing age would lead to decrease in crop production since ageing farmers would be less energetic to work in the farm. The coefficient of household size was positive and significant at 5%. This implies that as household size increased, probability of involvement in cocoyam production increases. This agrees with the findings of Chukwu, *et al*. (2009) but was very possible since cocoyam provides food security to a household. Large household sizes provide enough required labour that met the demand of cocoyam production (Anyiro *et al*., 2013). The coefficient of farm size was positive and significant at 5.0% level. It indicates that as the farm size increases, farmers' probability of involvement in different crop production increases. This in line with *a priori* expectation and also agrees with Chukwu *et al*. (2009) who found that increased farm size had a positive effect on the involvement in different crop production by farmers. The coefficient of farming experience was negative and significant at 10.0%, implying that as the experience of a farmer increases, his/her probability of involvement in cocoyam production reduces. This result is not in conformity with *a priori* expectation but lend credence to findings of Onyenweaku and Nwaru (2005) that as farming experiences increase, the age of the household head also increases. Thus, because of drudgery in farm operation, the energy available for work decreases with increase in experience. The coefficient of marital status was positive and significant at 10%, implying that married women are more involved in cocoyam production. This result is in conformity with *a priori* expectation and lends credence to findings of (Anyiro *et al*., 2013) who noted that married respondents will have access to extra financial, moral and physical supports from their spouse and this could go a long way in improving their involvement in agricultural production activities. The coefficient of farm income was positive and significant at 5%, implying that as the farm income of a farmer increases, his/her involvement in cocoyam production increases. This result is in conformity with *a priori* expectations. It could be inferred therefore that the moderate farm income obtained in the study reflected in this result. Increase in farm income is expected to boost

involvement level of crop production because a farmer may not be readily involved in cultivation of certain crop that is too expensive. Also the higher the costs incurred in production, the lower the profit realized which will reduce the level of participation.

Constraints militating against Cocoyam Production in the study area

Table 4 revealed the constraints militating against cocoyam production by women in Okigwe LGA of Imo State, Nigeria. The result showed that all the variables considered were serious constraints to cocoyam production. Lack of access to credit (2.92), Unavailability of improved cocoyam minisett (2.72), Inadequate farm land (2.67) and Difficulties in procurement of fertilizer (2.58) were the most serious constraints to cocoyam production by women in the study area. The finding is in agreement with the study of Chukwu *et al*. (2009) who observed the following as the developmental challenges facing cocoyam in Nigeria: apathy (neglect and lack of interest by scientists and the public for cocoyam), scarcity of high quality planting material, ineffective extension in dissemination of available technologies and low multiplication ratio. Ezeh and Okorji (2003) reported that major constraints to cocoyam production and processing were high cost of inorganic fertilizer, high cost of hired labour, scarcity of planting materials, lack of finance, low soil fertility, poor extension agent-farmers contact, scarcity of farmland, weed problem and unavailability of organic fertilizer.

Conclusion

Involvement in cocoyam production by female headed farm households was influenced by marital status, age, farm size, farm income, household size and farming experience. Lack of access to credit, Unavailability of improved cocoyam minisett, inadequate farm land and difficulties in procurement of fertilizer were the most serious constraints to cocoyam production in the study area. The results therefore call for policies aimed at encouraging the younger female farmers to get more involved in cocoyam production by giving them access to land to increase production. Policies that will also mitigate the constraints militating against production are also advocated for.

References

Ajagbe, F.A., Adewoye, J. O. and Ajetomobi, J. O. (2007). An Evaluation of Financial Performance of Community Banks in Ogbomoso Area of Oyo State, Nigeria. *International Business Management*, 1 (4): 65-69.

Amadi, C.O., Mbanaso, E.N.A. and Chukwu, G.O. (2011). A Review; Cocoyam Breeding in Nigeria, Achievements, Challenges and Prospects. A review paper at National Root Crops Research Institute Umudike unpublished.

Aniedu, C. (2006). Gender Factors in Access and Use of Improved yam Technologies by Farmers in South Eastern Nigeria Ph.D Dissertation Presented at the Department of Rural Sociology and Extension

Michael Okpara University of Agriculture Umudike.

Anyiro, C.O. and Oriaku, B. N. (2011). Access to and Investment of Formal Micro Credit by small Holder Farmers in Abia State, Nigeria. A case study of ABSU Micro Finance Bank, Uturu. *The Journal of Agricultural Sciences*, 6(2): 69-76.

Anyiro, C.O., Osondu, C.K., Ezeh, C.I. and Akabueze, I.C. (2013). Resource-use and Efficiency of Rural Women Smallholder Cocoyam Farmers in Onitsha Agricultural Zone of Anambra State, Nigeria. *Research WebPub.*,1(2): 12-17.

Asadu, A.N. (2006). Causes of Decline in Cocoyam Production Among Farmers in Enugu State. Department of Agricultural Extension University of Nigeria Nsukka.

Chukwu, G.O., Nwosu, K.I., Mbanasor, E.N.A., Onwubiko, O., Okoye, B.C., Madu, T.U., Ogbonye, P. and Nwoko, S.U. (2009). Development of Rapid multiplication Technique for cocoyam production. The Proceedings of Annual Conference of ASN, Abuja 2009. Pp. 81-83.

Chukwu, G.O., Nwosu, K.I., Onyeka, J. and Asiedu, R. (2008). Cocoyam rebirth in Nigeria, Paper presented at the *1st International Workshop on Cocoyam,* RAD, Ekonna, Cameroon, 29- 31 October, 2008.

Dimelu, M. U., Okoye, A. C., Okoye, B. C, Agwu, A. E., Aniedu O. C. and Akinpelu, A. O. (2009). Determinants of gender efficiency of small-holder cocoyam farmers in Nsukka agricultural zone of Enugu State Nigeria. *Scientific Research and Essay*, 4 (1):28-32.

DSBA (2005). Development Bank of South Africa. Development Report 2005, Agriculture in South Africa's Second Economy. *www.dbsa.org/document/developmentreport/dev.* Accessed 12/11/09.

Durno, J. and Stuart, R. (2005). Gender issues in sustainable agriculture. In Overholt C. (ed.). Gender roles in development projects. New Delhi Fox Publisher, New Delhi, India. Pp.24-37.

Ekpe, E. and Obeten, E.O. (2002). Factors affecting adoption behavior of maize and cassava farmers in Yakurr Agricultural sub – zone of Cross River State.

Eze, C.I. and Okorji, E.E. (2003). Cocoyam production by Women Farmers under Improved and Local Technologist in Imo State, Nigeria. *African Journal of Sci.* 5(1): 113-116.

Ezedinma, C.I., Okafor, C., Asumugha, G.N. and Nweke, F.I. (2006). Trends in farm labour productivity and implications for cassava industrialization in Nigeria. Proceedings of the 40th Annual Conference of the ASN held at NRCRI Umuahia, Abia State, October, 16th – 20th. Pp. 109-115.

Ezeh, C. I., Anyiro, C.O. and Chukwu, J. A. (2012). Technical Efficiency in Poultry Broiler Production in Umuahia Capital Territory of Abia State, Nigeria. *Greener Journal of Agricultural Sciences,* 2 (1): 001-007.

FAO (2005). Food and Agricultural Organization.

Agricultural Technology Development FAO, repository documents Statistics.

FMWA (2006). Federal Ministry of Women Affairs. Women and cassava production and processing in Nigeria. Contribution of labor in food production. Federal secretariat complex, Maitama. Pp. 4-6.

NBS (2006). National Bureau of Statistics. *Annual abstract of statistics*, NBS, Federal Republic of Nigeria, Abuja. 491pp.

NPC (2006). Census Report. National Population Commission (NPC). Abuja, Nigeria.

NRCRI (2011). Annual reports, National Root crops Research Institute, Umudike, Abia State.

Nweke, F. (2004). New Challenges in the Cassava Transformation in Nigeria and Ghana. Environmental and Technology Division. Discussion paper, No 118. IFPRI Washington DC.

Nweke, F. and Tollens, E, (2002). Contributions of man and women to food crop production labour in Africa: Information from COSCA. *Outlook on Agriculture*, 31(4):259-265.

Nweke, F.I., Spencer, D. S. and Lynam J, K. (2001). The Cassava Transformation: Africa's best kept secret. Michigan State University Press, East Lansing.

Nwosu, A.C. and Nwachukwu, I. (2005). Agricultural Technology Generation and Extension in Nigeria. Agricultural Extension and Rural Sociology Text book. Snaap press Limited. Pp. 269 – 283. ISBN 978-049-521-5

Obasi, P. C. (1991). Resource use Efficiency in Food Crop Production: A case of the Owerri Agricultural Zone of Imo State. MSc. Thesis University of Ibadan, Ibadan, Nigeria**.**

Okolo, O.E. (2007). Economic analysis of broiler production in Jos Plateau State. B.Sc. Project. Department of Agricultural Economics, ATBU Bauchi, Bauchi State, Nigeria.

Okoye, B.C., Onyenwaku, C.E. and Asumugha, G.N. (2008). Technical Efficiency of Small Holder Cocoyam Production in Anambra State, Nigeria. A Cobb –Douglas Stochastic Frontier Production Approach. *Nigeria Journal of Agricultural Research and Policies,* 2 (2): 27-31.

Okoye, B.C., Onyenwaku, C.E. and Asumugha,G.N. (2007). Technical Efficiency Small Holder Cocoyam Production in Anambra State, Nigeria. A Cobb –Douglas StochasticFrontier Production Approach. *Nigeria Journal of Agricultural Research and Policies,* 2 (2): 27-31.

Oladipo, F.O., Aderati, F.O., Adefalu, L.L., Kareem, O.W., Olaleye, S.R. and Ibitunde I.O. (2011). Women Farmers Assessment of Fadama II programme in Kwara State, Nigeria. *Benin International Journal of Agricultural Economics and Extension Services, Nigeria*,1(2):124-130.

Onumadu, F.N. (2009). Analysis of factors affecting Cocoyam production in Umuahia North L.G.A Abia State Nigeria. *Journal of Agriculture and Social Research* (JASR). 9(1): 149-155.

Onwubuya, E.A. and Ajani, E.N. (2012). Strategies for Improving Production and Processing of Cocoyam among Wome Farmers in Anambra State, Nigeria.

Universal Journal of Education and General Studies, 1(6):169‑173.

Onyemauwa, C. S., Eze C. C., Oguoma N. N. O., Ehirim N. C. and I.I. Osugiri (2007). Allocative Efficiency and Output Elasticity of Crop Mixture Farmers by Gender in Nwangele, Imo State, Nigeria. *International Journal of Agriculture and Rural Development*, 10(2): 50-55.

Onyenweaku, C.E. and Nwaru, J.C. (2005). Application of the Stochastic Frontier Production Function to the Measurement of Technical Efficiency in food production in Imo State, Nigeria. *Nigeria Agricultural journal.*

Table 1: Socio-Economic Characteristics of the Respondents

Variable	Frequency	Percentage
Age (years)		
20 – 30	8	13.33
31 – 40	18	30.00
41 – 50	25	41.67
51 – 60	7	11.67
61 and above	2	3.33
Mean 44		
Educational level		
No education	4	6.67
Primary education	18	30.00
Secondary education	30	50.00
Tertiary education	8	13.33
Family size		
1-3	15	25.00
4-6	33	55.00
7 and above	12	20.00
Mean 4		
Farm Size (ha)		
0.1-0.5	18	30.00
0.6-1.0	30	50.00
1.1-1.5	12	20.00
Total	**60**	**100.00**

Table 2: Distribution of Respondents According to Level of Involvement in cocoyam Production

Cultivation practices	Always	Often	Occasionally	Seldom	Never	Total	Mean
Land clearing	-	3(12)	7(21)	7(14)	43(43)	90	1.50
Preparation of ridges	-	7 (28)	3 (9)	7(14)	43(43)	94	1.57
Cutting of Cocoyam corm	30(150)	12(48)	12(36)	6(12)	-	246	4.10
Planting	33(165)	15(60)	5(15)	7(14)	-	254	4.23
Weeding	38(190)	12(48)	8(24)	2(4)	-	266	4.43
Fertilizer application	30(150)	13(52)	11(33)	6(12)	-	247	4.12
Harvesting	18(90)	10(40)	10(30)	12(24)	10(10)	198	3.23

Source: Field Survey Data, 2017
3.0 and above = Involvement, <3.0 = non involvement, Figures in parenthesis are percentages
Always 5, Often 4, Occasionally 3, Seldom 2, Never 1

Table 3: Probit Regression Estimates of Factors Influencing Women Involvement in Cocoyam Production in Okigwe LGA of Imo State, Nigeria

Variable	Estimated coefficient	Standard error	Z-ratio	P>|z|
Constant	0.541	1.452	0.37	0.709
Marital status	0.609*	0.283	2.15	0.032
Age	-0.051**	0.021	-2.44	0.005
Education level	0.273	0.234	1.17	0.242
Household size	0.595**	0.215	2.76	0.006
Farm size	2.016**	0.769	2.62	0.009
Annual farm income	0.000019**	7.08e-06	2.69	0.007
Quantity produced	-0.0009	0.000801	-1.24	0.215
Farming experience	-0.088*	0.050	-1.75	0.081
Pseudo R^2	0.4194			
Log likelihood:	-22.891			
$Chi^2(9)$	33.08***			

Source: Field Survey data, 2017
***, **, * is significant at 1%, 5% and 10% level

Table 4: Distribution of Respondents According to their Perceived Constraints to Cocoyam Production

Constraints	Serious	Less serious	Not constraint	Total	Mean
Unavailability of improved cocoyam minisett/ Inadequate of planting material	45(135)	13(26)	2(2)	163	2.72
Difficulties in procurement of fertilizer	40(120)	15(30)	5(5)	155	2.58
Lack of chemicals for diseases	38(114)	15(30)	7(7)	151	2.52
Lack of access to credit	55(165)	5(10)	-	175	2.92
Poor yield of cocoyam	30(90)	25(50)	5(5)	145	2.42
High cost of labour	33(99)	17(34)	10(10)	143	2.38
Poor extension contact	28(84)	17(34)	15(15)	133	2.22
Crude implements	30(90)	17(34)	13(13)	137	2.28
Inadequate farm land	45(135)	10(20)	5(5)	160	2.67
High incidence of disease	33(99)	17(34)	10(10)	143	2.38
Poor marketability of cocoyam	37(111)	14(28)	9(9)	148	2.47
Poor income from cocoyam	34(102)	18(36)	8(8)	146	2.43

Source: Field Survey, 2017   ** Mean ³ 2.0 = agreement*