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Effect of Fadama III Programme on Food Crop Production Among Rural Women Farmers in Akoko South-West Local Government Area

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Abstract

This study looked at the effect of FADAMA III program on food crop production among rural women farmers in Akoko South-West Local. Government area of Ondo State, Nigeria. A structured questionnaire was used to collect data from 120 respondents, including sixty (60) participating and sixty (60) non-participating rural women farmers. The study data were analyzed using descriptive statistics, net farm income models, logit regression models, and Ordinary Least Square regression (OLS). The study found that participating and non-participating rural women farmers had mean ages of 46 and 49 years, respectively, and had completed secondary education. At 1% and 5% levels of likelihood, age, farm size, times of extension visit, and farming experience were all significant in the logistic regression results. FADAMA III participants and non-participants had net farm income (NFI) of ₦189,691.82 /Ha and ₦108,417.73 /Ha, respectively. The cost-benefit ratios for participants and non-participants were 12.82 and 8.40, respectively. According to the OLS regression, farm size (2515.581) is the only variable that is significant at 5% for non-participants, although educational status (59846.796) and farming experience (167547.42) are significant at 1% and 5% for participants as factors determining their net income. Inadequate extension agent output, poor leadership, a negative attitude toward the program, and a lack of knowledge of the program were the major constraints. The study revealed that Agricultural programs such as FADAMA III programs and other empowerment programs are essential to the agricultural sector, most especially the rural dwellers in most of the developing countries.

Keywords:
Fadama III, food crops, program, Akoko South-west, Ondo State, Nigeria

1. Introduction

Agriculture is the main source of income for the majority of Nigerian households (Udoh,2000) especially in rural areas and is a significant sector in Nigeria's economy (Amaza,2000) which has women as major key players in most developing countries. Due to their high participation in agriculture, rural women need to be empowered in order to turn their crucial into reality, which will lead to increased output. Rural women are critical agents for attaining the transformational economic, environmental, and social changes needed for long-term development, and they represent a huge social and economic force in agriculture around the world. Women involvement in food production still lack the dependent right to own land, manage property, conduct business, or even travel without their husbands' approval, according to Edoka (2008). Farm women are vital in all aspects of agricultural production in Nigeria. In reality, previous research has shown that rural women play an important role in agriculture, with a substantial number of them engaging in crop cultivation, harvesting, transportation, processing, and decision-making (Famoriyo and Ewuola, 1990; Federal Office of Statistics, 1972; Boserup, 1970).

FADAMA is a Hausa name for low-lying alluvial fields that are partially or entirely flooded during the rainy season, and where legumes, cereals, and vegetables are primarily farmed (Achoja, 2014). Throughout the rainy season, FADAMA regions become flooded, yet during the dry season, they retain moisture. FADAMA areas are

thought to have a great potential for economic development if proper investments in producing assets, rural infrastructure, and technical aid are made. The ambition to realize FADAMA's full potential in Nigeria resulted in the creation of the National Fadama Development Projects I, II, and III. During the years 1993-1999, FADAMA I (Phase I of the National Fadama Development Project) was implemented. While FADAMA I was primarily concerned with crop production, downstream operations such as processing, preservation, and marketing were mostly ignored (Isah and Muhammad,2021)

The need for spatial integration of markets (creation of physical and market infrastructure) was not considered in the design. Other FADAMA resource users, including as livestock farmers, fishermen, pastoralists, and hunters, were also overlooked. According to Momoh et al., (2007), the initiative did not promote post-harvest technology, which resulted in lower crop prices and increased storage losses over the period. FADAMA II was born out of some of the lessons learned in FADAMA I.

FADAMA II focused on agro-processing, preservation, and commercialization for dry-season farming. It also enabled the purchase of economic assets, the construction of rural infrastructure, efficient delivery of farm products to markets and marketing operations. The project's goal was to enhance recipients' earnings in a sustainable way by allowing communities to take charge of their own development agenda using a Community Driven Development (CDD) approach to project execution that was socially inclusive. The FADAMA III project is a follow-up to the FADAMA II initiative, which was shown to have improved the lives of rural farmers by 63 percent by improving their incomes. (Abdul, 2012).

Meanwhile, the FADAMA III project provides rural finance through the Nigerian Agricultural Co-operative and Rural Development Bank, as well as develops the private sector's interests in the project. In addition to their traditional reproductive, family, and community management activities, women account for approximately 46.6 percent of the overall population and produce 60-80 percent of the food produced in the country(Adekanye,1998). They have borne a significant portion of their countries' economic burdens through their labour in agriculture, marketing, and family care.

Despite their active participation in agriculture, women have been marginalized and their contributions are rarely recognized, which may be due to the fact that they are mostly engaged in what is referred to as family farming, which is not considered an economic activity. Furthermore, they do not receive as much support from extension workers and have largely resorted to subsistence farming (Raney,2011).

Empowering rural women farmers has been shown to have a major influence on household, community, and national livelihoods (Ogato,2013. Women's empowerment will expand their access to resources since it is believed that empowering women will reduce poverty, boost work possibilities, and household income, all of which will lead to long-term economic development (Adeleke, Adeoye and Odedeji, 2016).

Nigeria's Federal Government have made significant efforts to modernize agriculture, transforming ancient agricultural practices into modern food production systems. The FADAMA III project is a follow-up to the successful FADAMA II initiative, with the development goal of increasing FADAMA users' wages by around 60% over time while also focusing on the poor and vulnerable. Meanwhile, FADAMA III was designed to address the inadequacies of previous FADAMA programs. FADAMA III included provisions to address the deficiencies of FADAMA II. The initiative now includes new components such as the FADAMA user equity fund, adaptive research assistance, and mainstreaming of sustainable land management.

Women are rarely involved in this new development, and their involvement was not requested. Despite their active participation in agriculture, women have been marginalized and their contributions are rarely recognized, which may be due to the fact that they are mostly engaged in what is referred to as family farming, which is not considered an economic activity. Furthermore, they do not receive as much support from extension workers and have largely resorted to subsistence farming (Raney,2011) They are denied these opportunities in the majority of cases, particularly in Akoko South West Local Government, resulting in low productivity and a lack of food supplies. As a result, it is necessary to examine rural women farmers' engagement in the FADAMA III program and identify how this participation has contributed significantly to food production in Akoko South-West, Ondo State. It was against this background that the study sought answers

to the following questions:

i. What are the socio-economic characteristics of the respondents in the study area?

ii. What is FADAMA III empowerment status of the respondents in the study area?

iii. What are the factors influencing participation in FADAMA III program in the study area?

iv. What are the net farm income of the respondents in the study area

v. What are the factors affecting the net farm income of participants and non-participants of FADAMA III program in the study area?

vi. What are the constraints to the participation of rural women farmers in FADAMA III program?

The main objective of this research work was to assess the effect of FADAMA III program on food crop production among rural women farmers in Akoko South-West, Ondo State, Nigeria.

The specific objectives were to:

i. describe the socio-economic characteristics of rural women farmer in the study area;

ii. analyze FADAMA III empowerment status of respondents in the study area;

iii. evaluate the factors influencing participation in FADAMA III program in the study area;

iv. estimate the net farm income of the respondents in the study area

v. evaluate the factors affecting the net farm income of participants and non-participants of FADAMA III program in the study area; and

vi. identify the constraints to participation of rural women farmers in FADAMA III program in the study area.

One of the justifications for this study is that an economic analysis of the impact of the FADAMA III program on food crop production among rural women farmers will assist us in critically and objectively bringing to the forefront the urgent need to support and replicate this program in other parts of the country.

It will show that rural women farmers play a significant role in agriculture in numerous countries, and that empowering them will benefit the country's economic development (Nigeria).

The study will help rural women farmers understand their role in agricultural development through effective involvement, particularly in Ondo State, and examine structural barriers that may prevent them from participating in the agricultural industry.

Furthermore, it will add to the existing literature on the impact of economic empowerment on rural women farmers in terms of increasing food crop output and economic development. As a result, this study is critical in bridging the knowledge gaps identified above for rural women farmers in Ondo State's Akoko South-west Local Government Area.

2. Methodology

2.1 The Study Area

The study was conducted in Akoko South West Local Government Area, Ondo State. The choice of Akoko South West area for this study was deemed to be appropriate given its antecedent in agriculture and women participation in agricultural activities. Generally, Akoko is a large Yoruba cultural sub-group in the North Eastern part of Yoruba land and it extends from Ondo State to Edo state. It has a population of about 815,360 people (Federal Government of Nigeria, 2007) with a land area of 1,283,443 km2 and with the coordinates of 7°23'51.58" N 5°41'40.67" E. It takes 4 out of the 18 local government areas in the state. The local government areas include Akoko North East, Akoko South West, Akoko North West, and Akoko South East. The major occupation there is farming and most of the people in the district are engaged in small- and large-scale farming with major arable crops cultivated. Some of the crops grown include groundnut, tomatoes, maize, cocoa, cassava, yam, plantain etc.

2.2 Sampling Technique

The Akoko South West LGA was chosen because of the heavy concentration of food crops in the area. Multi-stage sampling was used to select samples for the study. The first stage involved the purposive selection of one local government from the four local government areas that make up the entire Akoko districts while the second stage involved a simple random selection of twelve (12) communities in the local government out of which six (6) communities were selected for participants and the other six (6) communities were selected for non partcipants . The last stage involved a random selection of ten (10) rural women from each community, which totalled one hundred and ten (120) rural women in all thereby making sixty (60) from participating and sixty (60) from non-participating communities respectively.

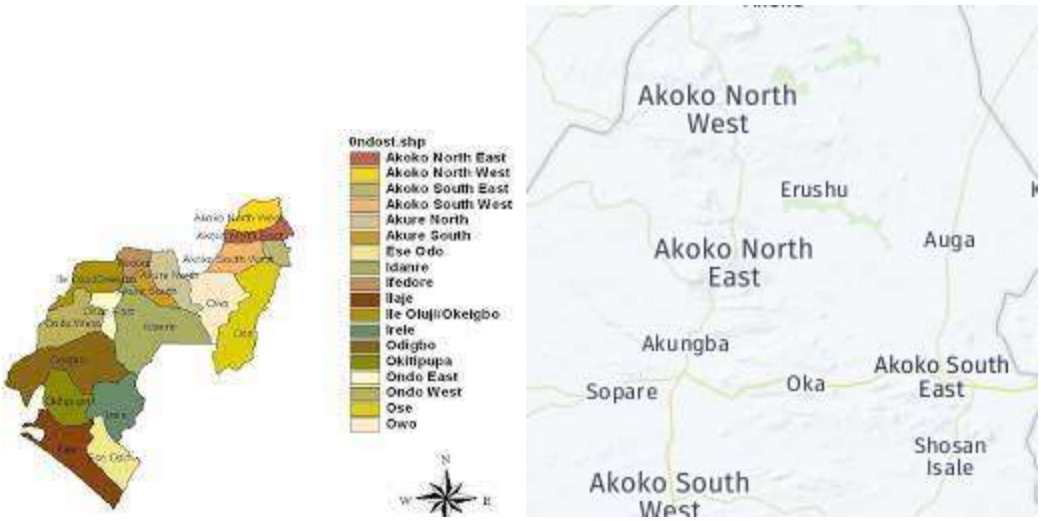

Figure 1. Map of Akoko Districts ,Ondo State

2.3 Data Analysis

Data for analysis were generated primarily using interview scheduled and structured questionnaires administered to one hundred and twenty (120) respondents selected for the study.

2.4 Analytical Technique

Data for the study were analyzed using both descriptive and inferential statistics. Objective i, ii and vi were analyzed using descriptive statistics such as mean, percentages and frequency distribution. Objective iii was analyzed using a logistic regression. Objective iv was analyzed using Net Farm Income model, while objective v was achieved using Ordinary Least Square(OLS)

2.5 Model Specification

The study employed the logit regression analysis to determine the significance of the number of factors which contribute to the participation and non-participation of FADAMA III (Eastwood and Brooker1987). Variables included in the model were age of the household, farm size, times of extension visit, farming experience etc.

$Y= \beta_0 +\beta_1X_1+\beta_2X_2+\beta_3X_3\ldots\ldots\ldots+\beta_{11}X_{11} + \mu$ …….……. (1)

where:

Y = FADAMA III programme (1= participants; 0= non-participants)

β_0 = constant

βi = vector of the parameter estimates

Xi= vector of explanatory variables

μ = error term which is normally distributed with zero mean and constant variance

Thus, the explanatory variables used in the analysis are:

x_1 = Age (years)

X_2 = Household size (number of persons in the household)

X_3 = Educational status (educated = 1, not educated = 0)

X_4 = Farm size (hectares)

X_5= Farming experience (years)

X_6 = Times of extension visit (years)

X_7 = Membership of cooperative (Yes = 1, No = 0)

X_8 = Access to credit (Yes = 1, No = 0)

X_9 = Awareness of FADAMA III (aware = 1, not aware = 0)

X_{10} = Distance to FADAMA III training center

X_{11} = Marital Status (Married=1; Otherwise = 0)

2.6 Ordinary Least Square Regression Model (OLS)

Factors affecting net farm income of participants and non-participants was analyzed using OLS regression model

The model is specified as:

$Y = f(\beta X + \mu i)$ … … . . (2)

Where:

Yi = Total farm output in kilogram

β = a vector of estimated coefficient of the explanatory variables

X = a vector of explanatory variables

e = error term

The model is specified as:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \mu i$ … … … … . . (3)

where:

Y= Total farm output in kilograms

The explanatory variables used in the analysis are:

X_1 = Age (years)

X_2 = Marital status

X_3 = Household size (number of persons in the household)

X_4= Educational status

X_5 = Farm size (hectares)

X_6 = Farming experience (years)

2.7 Budgetary Analysis

This model was used to access the net farm income of participants and non-participants through measure of productivity such as Gross margin/ha, Net income per hectare, gross income per hectare.

The net income model is expressed as below:

TC= TFC+ TVC

NI= TR-TC

Cost Benefit Ratio = TR/TC

Where;

NI=Income in Naira/ha

TR=Total Revenue in Naira/ha

TC= Total Cost

TFC= Total Fixed Cost in Naira/ha TVC=Total variable cost in Naira/ha

TVC=Gross Margin in Naira/ha

NI=TR –TC

Therefore, NI =GM –TFC.

3. Results and discussion

3.1 Socio-economic characteristics

The results revealed the minimum age of the farmers participating in FADAMA III program was made up of 30 years and 39 years while the maximum age was 70 years and 79 years and the mean age were 46 years and 49 years for both participants and non-participants respectively (Table 1). The study revealed that 58.3% of the participating women farmers were between the ages of 40 and -49 years, while the same age bracket was 48.3% for the non-participating women farmers. The result implies that most of the respondents were of middle age; signifying that both the categories of the respondents were within the agricultural productive age range of 30- 50 years quoted by Food and Agriculture Organization (FAO, 2002).

The results revealed that both 80% and 76.7% of the participants and the non-participants of FADAMA III program respectively were married, 8.3% were divorced for both participants and non-participants and about 11.7% and 15% of the participants and non-participants respectively were widow. The result revealed that the larger percentage of the respondents were married. This is an indication that farming activities were dominated by married women in the study area. The results revealed that 46.7% of the participants have a greater percentage of secondary education while 45% of the non-participants have a greater percentage of primary education. This implies that majority of the respondents were marginally educated, thus, the possibility of participation and efficiency in the Fadama III program among the respondents that are educated. The level of education attained by a farmer does not

only increase his/her farm productivity but also enhances ability to understand and evaluate new production technologies (Ajibefun and Aderemola, 2004). The ability to read and write would enable both groups of farm women to better utilize effectively and efficiently whatever resources exist in the area.

The farm size distribution of the respondents showed that 98.3% and 93.3% of the participants and non-participants respectively had less than 3 hectares' farm size while 1.7% and 6.7% of the participants and non-participants respectively had between 4-6 hectares' farm size. This is agreeing with Awoyemi (1999) that rural women in Nigeria are predominantly smallholder farmers with average farm size of between 1 and 2 hectares. Since the majority of respondents have farm holdings of less than 3 hectares, it means that these farmers cannot achieve economies of large-scale production. Small farm size is an impediment to agricultural mechanization because using farm machineries like tractors to control weeds will be difficult.

The distribution of respondents by years of farming experience revealed that 26.7% of the participants had farming experience of 18-23 years while 35% of the non-participants have farming experience of 6-11 years. According to Adebayo (2006), the longer a person stays on a particular job, the better the job performance tends to be. This implies that the farmers in FADAMA III program in the study area have been into farming for several years and may be considered quite experienced.

The distribution of respondents by membership of cooperative showed that 91.7% and 90% of the participants and non-participants respectively were member of cooperative while 8.3% and 10% of the participants and non-participants respectively were non-member of cooperative. Gashaw et al (2013) found that membership of cooperatives enhances members 'efficiency by easing access to productive inputs and facilitating extension linkage compared to those who were not members.

Table 1. The Socio-economic Characteristics of the Respondents (n =120)

Variables	Participants	Percentage	Mean	Non-participants	Percentage	Mean
Age(Years)						
30 – 39	1	1.7		4	6.7	
40 – 49	29	48.3	46	35	58.3	49
50 – 59	18	30		17	28.3	
60 – 69	12	20		4	6.7	
Marital status						
Married	46	76.7		48	80	
Divorced	5	8.3		5	8.3	
Widow	9	15		7	11.7	
Level of Education						
No formal	5	8.3		8	13.3	
Primary school	27	45		16	26.7	
Secondary	24	40		28	46.7	
Tertiary	4	6.7		8	13.3	
Farm size(ha)						
< 3	56	93.3		59	93.3	
4 – 6	4	6.7		8	13.3	
Farming Experience						
1 - 10	26	43.3		15	25	
11- 20	10	6.7		14	23.3	
21- 30	16	26.7		18	30	
> 30	8	3.3		13	27.3	
Membership of cooperative						
Yes	54	90		55	91.7	
No	6	10		5	8.3	

3.2 Fadama III Empowerment Status

The results showed that 100% of the participants were aware of FADAMA III program and at the same time participating while 66.7 % of the non-participants were not aware, 33.3% of the non-participants were aware but not participating due to some reasons like "they are not interested" in the program.

Table 2. Distribution of Fadama III Empowerment status

Variables	Participants	Percentage	Non-participants	Percentage
Awareness of FADAMA III	60	100	20	33.3
No	0	0	40	66.7
Total	60	100	60	100

Source: Field survey, 2019.

3.3 Factors Influencing Participation of Rural Women Farmers in Fadama Iii Program

Multicollinearity test was conducted. The result of logit regression model (Table 3) showed that age had a negative coefficient (-0.248) and was statistically significant at 1% of probability. It therefore shows that a unit increase in age will bring about 0.248% decrease in the probability on farmers' participation in the program activities which implies that as the age of the rural women farmer's increase, the lower the probability of participation. Educational status had a negative coefficient (-4.437) and is not significant at 1% or 5% level of probability. It therefore shows that educational status of the farmer has no significant on rural women farmers' participation in FADAMA III program. Farm size had a negative coefficient (-2.076) and was significant at 1% level of probability. It shows that a unit increase in farm size will bring about 2.076% decrease in the probability of farmer's participation in the program. This implies that the higher the farm size of the respondents, the less the probability of farmer's participation in FADAMA III program. Farming experience had a positive coefficient (0.175) and was significant at 5% level of probability, it shows that a unit increase in farming experience will bring about 0.175% increase in the probability of farmer's participation in the program. This implies that farming experience has influence on rural women participation in FADAMA III program. Time of Extension visit had a positive coefficient (2.594) and was statistically significant at 1% level of probability, this shows that a unit increase in extension visit will bring about 2.594% increase in probability of farmer's participation in the program. This implies that the higher the number or frequency of the visit of extension agent to the farmers, the higher the probability level of participation and the adoption of recommended practices. Membership of cooperative had a positive coefficient (0.623) and was not statistically significant at 1% or 5% level of probability. This implies that membership of cooperative has no effect on participation in FADAMA program. Access to credit also had a positive coefficient (0.102) and was not statistically significant at 1% or 5% level of probability. It implies that access to credit of the individual's does not increase their probability of participation in the program. Awareness of FADAMA III program had a positive coefficient (25.147) and was not statistically significant at 1% or 5% level of probability. This implies that awareness of the program has no effect on participation. Distance to the training center had a negative coefficient (-1.745) and was not statistically significant at 1% or 5% level of probability. This implies that distance to the training center has no effect on participation. The finding showed that age with coefficient value of (-0.248), farm size (-2.076), and time of extension visit (2.594) had significant influence on farmers' participation at 1% level of probability, while farming experience (0.175) had significantly influenced rural women participants at 5% level of probability. This implies that these factors are good predictors that influenced the participation of women in Fadama III program in the study area.

3.4 Analysis of Net Farm Income of Both Participants and Non-Participants of Fadama Iii Programme.

The net farm income statement is a summary of revenue and expenses for a given accounting period. The purpose of Net Farm Income (NFI) in this study is to measure the difference between revenue and expenditure of both participants and non-participants. A Positive difference indicates a profit or a positive Net Farm Income, and a negative value indicates a loss or a negative Net Farm Income for the accounting period. The average costs incurred and the output in monetary value obtained per hectare by the FADAMA III participants and nonparticipants was estimated for determining the net farm income of food crop in the study area. The Total costs incurred and the output in monetary value obtained per hectare by FADAMA III participants and non-Participants was estimated for determining their Net Farm Income of food crop production. As shown in Table 4, the Total Cost of production per hectare of participants and nonparticipants was ₦131,119.86 and ₦79,854 respectively. The Total Cost incurred by the participants was higher than that of the non-participants.

The Total Revenue was ₦205,737.70 and ₦123,050.84 for participants and non-participants respectively. The total revenue of participants was higher than that of the non-participants. The Net Farm Income (NFI) was ₦190,654.18/Ha and ₦109,276.83/Ha for participants and non-participants respectively. The result indicates that food crop production is profitable in the study area. The higher difference in Net Farm Income of participants over that of non-participants may be attributed to the increase in farm output realized by the participants after the FADAMA III program. The cost benefit ratio is 12.81 and 7.93 for participants and non-participants respectively, indicating that for every ₦100 spent on the farming business, a return of ₦1,281 and ₦793 will be by participants

and non-participants respectively. Participants' cost benefit ratio is higher than that of the non-participants because they may have been taught better farming techniques which had impacted on their yield and revenue.

Table 3. Logit regression of Socio-economic Factors Influencing Rural Women Participation in Fadama III

Variables	Coefficients	Standard error	Sig.
Age	-0.248	-0.248	0.002*
Sex of household head	2.11	1.131	0.062
Household size	0.137	0.275	0.619
Educational status	-4.437	3.06	0.147
Farm size	-2.076	0.628	0.001*
Farming experience	0.175	0.175	0.026*
Extension contact visit	2.594	1.014	0.011*
Cooperative membership	0.623	1.756	0.723
Access to credit	0.102	0.556	0.854
Awareness of Fadama III	25.147	5376.583	0.996
Distance to Training center	-1.745	1.555	0.262
Constant	-14.902	-5795377	0.998
Pseudo R^2	0.579		

Dependent variable: Participants and Non-participants (1 and 0)
Significant: * represents 1% significant level, ** represents 5% significant level.

Table 4.Net Farm Income of Respondents

	Participants	Non-participants
Fixed cost	₦	₦
Land	77,619.05	66,080
Machinery	28,200	1000
Tools	6,665.57	5,203.38
Others	3,751.72	4626.92
Total Fixed Cost	116,236.34	85,910.31
Cost Depreciation (% of Fixed Cost)	1,162.36	859.1
Variable Cost		
Seeds	1,006	300
Fertilizer	3,530.30	3,107.14
Transportation	2,096.55	2,663.63
Herbicides/pesticides	1.988.37	2,872.73
Labour	6,262.29	4,830.51
Total Variable Cost	14,883.52	13,774.01
Total Cost	131,119.86	79,854
Total Revenue	205,537.70	123,050.84
Net Farm Income	190,654.18	109,276.83
Benefit Cost Ratio	12.81	7.93

Total cost = Total Fixed Cost + Total Variable Cost
Net Farm Income = Total Revenue – Total Variable Cost
Cost Benefit Ratio = total revenue / total cost

3.5 Factors Affecting Net Farm Income of Participants and Non-Participants of Fadama Iii Programme

The result of the regression in Table 5 showed that farm Size had a positive coefficient (2515.581) and was statistically significant at 5%. It therefore shows that farm size is a significant factor that affected net farm income of the non-participants of FADAMA III program in the study area, which implies that as the farm size increases so also their net farm income increases. This shows that there is a positive relationship between farm size and net farm income of the rural women farmers. Other variables like age, Marital status, sex of household head etc. are not statistically significant at either 1% or 5% level of probability significant. The result of the regression in Table 5 for the participants shows that educational status had a positive coefficient (59846.796) and was statistically significant at 1% level of significant. The significant shows that educational status helps rural women farmers to adopt new

ideas and innovation which will enable them to be more productive and this will help to increase their net farm income. The Table 5 also shows that farming experience had a positive coefficient (167547.428) and was statistically significant at 5% level of significant for participants. This implies that farming experience is a significant factor that affected net farm income of participants of FADAMA III program in the study area, which implies that as their farming experience increases, their net farm income will also increase based on the knowledge that has been acquired over the years.

Table 5. Factors Affecting the Net Income of both participants

	Variables	Coefficients	Standard error	T-value	Sig.
Non-participants	(Constant)	100842.603	72327	1.394	0.169
	Age	-1042.508	996.45	-1.046	0.3
	Marital status	-20826.799	29173	-0.714	0.479
	Sex of HH	36725.551	49531	0.741	0.462
	Household size	1913.363	4658.1	0.411	0.683
	Educational status	-3710.216	7831.5	-0.474	0.638
	Farm size	2515.581	1100.4	2.286	0.026**
	Farm experience	100842.603	72327	1.394	0.169
R^2 0.895					
F value 105.98					
Participants	(Constant)	16757.428	82677	2.027	0.048
	Age	826.077	1525	0.542	0.59
	Marital status	-9271.305	41342	-0.224	0.823
	Sex of HH	-871.32	700971	-0.012	0.99
	Household size	-997.198	5068.1	-0.197	0.845
	Educational status	59846.796	13175	4.542	0.000*
	Farm size	-1337.185	1358.7	-0.984	0.33
	Farming experience	167547.428	82677	2.027	0.048**
R^2 0.863					
F value 102.76					

Dependent variable: Net Farm Income
Significant: * represents 1% significant level, ** represents 5% significant level.

3.6 Constraints to Participation for Participants

From the result of the analysis below, about 14.2% strongly agreed that inadequate capital is a constraint to participation, 23.3% agreed, 2.5% undefined, 51.7% disagreed and 8.3% strongly disagreed, a greater percentage of the respondent disagreed with the mean value of 3.16. This implies that inadequate capital is not a constraint to participation. For inadequate storage facilities, 15.8% strongly agreed, 25% agreed, 5.8% undefined, 45% disagreed and 8.3% strongly disagreed, a greater percentage disagreed with the mean value of 3.05. This implies that inadequate storage is not a major constraint to participation. For limited market information, 15.8% strongly agreed, 35.8% agreed, 10.8% undefined, 32.5% disagreed and 5.0% strongly disagreed, a greater percentage agreed with the mean value 2.75. This implies that limited market information is one of the constraints to participation in the study area. For poor extension agent output, 55.8% strongly agreed, 22.5% agreed, 11.7% undefined, 9.2% disagreed and 0.8% strongly disagreed, a greater percentage strongly agreed with the mean value 1.76. This implies that poor extension agent output is one of the constraints to participation in the study area. For poor leadership, 60.8% strongly agreed, 15% agreed, 17.5% undefined, 5% disagreed, 1.7% strongly disagreed with the mean value 1.71, a larger percentage strongly agreed and this implies that poor leadership is one of the constraints to participation. For socio cultural barriers, 20% strongly agreed, 25.8% agree, 31.7% undefined, 22.5% disagree and none of the respondent strongly disagree with the mean value 2.81, a larger percentage undefined i.e. they are neutral. This implies that in the study area, it is possible for socio cultural barrier to affect and its possible for it not to affect. For age, 4.2% strongly agreed, 20.8% agreed, 24.2% undefined, 49.2% disagreed and 1.7% strongly disagreed, a greater percentage of disagreed with the mean value 3.23. This implies that age is not a constraint to participation. For negative attitude to the program 49 69.2% strongly agreed, 18.3% agreed, 10% undefined, 2.5% disagreed and none of the respondent strongly disagreed, a greater percentage strongly agreed with the mean value 1.45. This implies that negative attitude to the program is a constraint to participation in the study area. For poor knowledge of the program 65% strongly agreed, 19.2% agreed, 10.8% undefined, 4.2% disagreed and none of the respondent strongly disagreed, a greater percentage

strongly agreed with the mean value 1.56. This implies that poor knowledge of the program is a constraint to participation in the study area.

Table 6. Constraints to Participation for Participants

Variables	SA		A		U		D		DS		Mean
	F	%	F	%	F	%	F	%	F	%	
Inadequate capital	17	14.2	28	23.3	3	2.5	62	51.7	10	8.3	3.2
Inadequate storage facilities	19	15.8	30	25	7	5.8	54	45	10	8.3	3.1
Limited market Information	19	15.8	43	35.8	13	10.8	39	32.5	6	5	2.8
Poor extension agent output	67	55.8	27	22.5	14	11.7	11	9.2	1	0.8	1.76*
Poor leadership	73	60.8	18	15	21	17.5	6	5	2	1.7	1.71*
Socio-cultural barriers	24	20	31	25.8	38	31.7	27	22.5	0	0	2.8
Age	5	4.2	25	20.8	29	24.2	59	49.2	2	1.7	3.2
Negative attitude to the Program	83	69.2	22	18.3	12	10	3	2.5	0	0	1.45*
Poor knowledge of the Program	78	65	23	19	13	11	5	4.2	0	0	1.56*

SA: strongly agree, A: agree, U: undecided, D: disagree, SD: strongly disagree
*F: frequency, %: percentage, *: major constraint*

4. Conclusion and Recommendation

The study investigated the effect of FADAMA III program on food crop production among rural women farmers in Akoko South-West Local Government area of Ondo State, Nigeria. The result shows that majority of women participants together with non-participants of the program were in their active age. The program was dominated by married women that are both participants and non-participants. The results showed that 100% of the participants were aware of FADAMA III program and at the same time participated while 66.7 % of the non-participants were not aware, 33.3% of the non- participants were aware but not participated due to some reasons like "they are not interested" in the program. The result of regression shows a combined influence of socio-economic variables (membership of cooperative, awareness of FADAMA III program, farm size, times of extension visit and farming experience) have significantly contributed to farmer's participation in FADAMA III program. The women participants had an average Net farm income of ₦190,654.18/Ha, and ₦109,276.83/Ha for non-participants. The results of OLS regression shows that factors such as educational status and farming experience increased the net returns of the women participants while variable such as farm size increased the net returns of the non-participants. Among the major constraints identified in the study area were poor extension agent output, poor leadership, negative attitude to the program and poor knowledge of the program. The study therefore recommends that the government and non-governmental organizations dealing with extension agents should motivate rural women farmers so as to enhance greater participation of women in the project and increase food crop production output. Women farmers with higher experience in farming should be encouraged to participate in rural development programs as this will enhance or boost food production which invariably increase their income in the study area .Extension training personnel should frequently visit farmers to know their immediate challenges time to time and to make aware of the new programs available for their participation, this will always motivate participants to be more focused while participating and will make them adopt any new technology easily being made available for them and also encourage non-participants to participate.. Availability and allocation of large farm size should be encouraged among women so as to enhance their participation in any agricultural production activities in order to boost food production in the study area. Education should also be encouraged among women in the study area since the study revealed that education will enable them to adopt new technologies that will make them more productive and efficient.

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