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Full Length Research Paper

Analysis of the Constraint Facing Gender Participation in Agricultural Transformation Agenda (ATA) For Increased Agricultural Production in Orlu Agricultural Zone of Imo State, Nigeria

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Abstract

Agricultural Transformation Agenda (ATA) was established in 2011, with the aim of increasing farmers' productive capacity and aggregate food production in Nigeria. However, the constraints facing gender participation in the project is relatively unknown. It is on these backdrops that the study analyzed the constraints facing gender participation in agricultural transformation agenda (ATA) to increase agricultural production in Orlu Agricultural Zone of Imo State. Specifically, the study described the socio-economic characteristics of the respondents; determine respondents perceived effects of ATA programme and identify the constraints to gender participation in ATA programs. Sample size comprised forty of male and female beneficiaries respectively. A simple random sampling technique was used in the selection of respondents. Well-structured questionnaire was the main tool for data collection. Data collected were analyzed using descriptive statistical tools and multiple regression analysis. Mean age was 45.31 and 53.10years for female and male respectively. Majority (70.00% and 52.50%) of female and male were married respectively. A sizeable proportion (50.00% and 45.00%) of male and female had secondary education respectively. Beneficiaries cultivated on an average farm size of 1.28ha and 1.23ha for male and female respectively. Based on their ratings, the respondents strongly agreed that there is increased access to fertilizers ($\bar{x}$=3.50 for male and $\bar{x}$=4.06 for female),there is improved education and experience on new planting activities ($\bar{x}$=3.45 for male and$\bar{x}$=3.50 for female). Generally, the females perceived the effects more than the male. The most pressing constraint according to the finding is lack fund (male 95.00 and female 97.50) and poor communication (male 90.00 and female 92.25). Estimated multiple regression analysis revealed that there was significant relationship between male and female socio-economic characteristic and participation in ATA project in the area. The F-ratio was (4.091 and 32.892), for male and female beneficiaries indicating the overall significant of the regression model at 1% level of probability. Beneficiaries complained of lack of funds and poor communication. It was therefore recommended that the Government should provide funds for farmers, electricity and good communication networks in rural areas so that the farmers can receive adequate information which will eventually reduce the constraints to increase in agricultural production

Keywords: Agricultural Transformation Agenda (ATA), gender, constraints, analysis

Introduction

The Agricultural Transformation Agenda was launched in 2011 after the present administration took over the rein of power. It is aimed at a proactive change in the practice of Agriculture and its perception in the country in several ways. For the first time in post-civil war, agriculture is being treated as a purely business oriented economic activity rather than a development programme (Osinowo, 2012). In the past times, interventions in agriculture have been largely dominated by access to credit, robust extension effort and provision of basic farm inputs, but these have steadily and drastically reduced with the end of World Bank financing of the State Agricultural

Development Programmes (Tiri *et al.,* 2014). It is still believed that agriculture is the life wire of Nigerian economy, contributing between 30-40% to the gross domestic product and providing employment for the majority of the population especially those in the rural area.

However, a policy framework for increasing the strength to release its vast potential for employment, economic development, food security and poverty alleviation was elusive (Osinowo, 2012). However, the Agricultural Transformation Agenda (ATA) with its core critical objectives of a value chain approach and its linkages with key changes in food and trade policies appear to be making impact since its inception (Osinowo, 2012).

It is an innovative scheme which seeks to remove the difficulties usually associated with the distribution of fertilizer and hybrid seeds in the country. In the past, there were complains of diversion, exorbitant cost and adulteration of various inputs, which ultimately led to low productivity, increased poverty, unemployment and lack of interest in farming (GAIN, 2012).

The word gender refers not to women and men per se, but to the relationship between them, both perceptual and material (FAO, 2006). Gender is not sexual characteristic of either male or female farmers, but it is constructed socially. It is a central organizing principle of societies and often governs the process of production and reproduction, consumption and distribution. Gender seems not just a single factor but a collection of other factors acting collectively and undependably. These factors can be biological, social or cultural, and they include sex, socio economic and socio- cultural status of farmers.

According to Angya (2008), agriculture is the key sector for development and meeting the Millennium Development Goals. Quadri (2009) stated that in Nigeria, the agricultural sector had not thrived the way it should have done. He reported that presently the nation is importing rice in a country that is well endowed with good climate, soil and expanse of land to engage in farming that would not only meet the society's needs but also be a foreign exchange earner. Countries far less endowed with the natural environment than the nation Nigeria are not only self-sufficient in provision of food, goods and services but are exploiting their few assets to ensure stability and food growth for their economies. Countries such as Singapore thrive only on providing the good environment for market forces to operate (Angya, 2008).

Though recent decades have witnessed substantial gains in agricultural productivity and rapid advances in agricultural technology, these advances have often by-passed women and reduced their productivity. This is mainly because of the notion that women were underperformers in agricultural production. Women have more difficulties than male farmers in gaining access to land, credit, extension services and glaring discrimination under the guise of culture and tradition, which impede their effectiveness (Ejimbi *et al.,* 2008). Despite increased awareness, well-documented research findings and the availability of more information on women's roles in agriculture at the country level, gender is not yet mainstreamed in the national agriculture production.

Objectives of the Study

The broad objective of the study is to analyze the constraints facing gender participation in agricultural transformation agenda (ATA) for increased agricultural production.

The specific objectives are to:

i. describe the socio-economic characteristics of the household
ii. determine respondents' perceived effects of ATA programme
iii. identify the constraints to gender participation in ATA programme in the study area

Hypothesis of the Study

- The study hypothesized that there is no significant relationship in socio-economic characteristics of the respondents' and the level of participation in ATA programme.

Methodology

This study was carried out in Orlu Agricultural Zone of Imo State. The zone consists of seven communities. The dormant vegetation is tropical with mean annual rainfall of 2,443mm (NRCIR, 2004). The area is characterized by a tropical wet climate (April to October), and dry climate (November to March). The major occupation of the people is farming. The major food crops of the area include cassava, maize and yam intercropped while oil palm is the major tree crop with raffles palm in some locations. The farmers are mostly subsistent.The simple random sampling technique was adopted for the survey. The list of beneficiaries of ATA programme in the zone was collected from the zonal ADP office. From the list, 80 beneficiaries were randomly selected for the study.

Data was analyzed using simple descriptive statistics such as mean, percentage and frequency distribution.

The null hypothesis was tested using multiple linear regression models. The implicit model is given as follows:
$Y = f(X_1,X_2,X_3,X_4,X_5,X_6,X_7,X_8,+ei)$.

Where Y = Level of Participation in ATA (4-point Likert Rating) for male and female respondent respectively.

X_1 = Age (years)
X_2 = Farm size (Hectare)
X_3 = Educational level (years)
X_4 = Farming experience (years).
X_5 = Household size (Number of persons) Farm size (Hectare)
X_6 = Farm income (₦)

X_7 = Membership of Social Organisation (Member = 1, otherwise = 0)
X_8 = Extension Contact (Number of Visit per month)
e_i = error term

Results and Discussion

Socio-economic Characteristics of the Respondents

The result of male and female respondent distribution based on age is presented in Table 1. It revealed that greater proportion (60.00% and 52.50%) of female and male respondents fell within the age bracket of 41-50 years and 51-60 years respectively. The mean age was 45.31 and 53.10years for female and male respectively. The finding implies that the women are young, active and are more likely to participate actively in agricultural transformation agenda than male in the area.

The respondent distribution based on educational level is compiled as shown in Table 1. It revealed that sizeable proportion (50.00% and 45.00%) of male and female respondents had both secondary educations with mean educational level of 13.43years for male and 11.51years for female. The result shows that male had higher education than female. This could be as a result of socio-cultural factors that hinder women from attending school such are early marriage, household chores, and poverty. It is also expected that the higher level of education will contribute significantly to decision making and in understanding the importance of agricultural transformation agenda on their livelihood activities. Education will also enhance their active participation in the programme.

The distribution based on marital status of the respondents is presented in the Table. It shows that majority (70.00% and 52.50%) of the female and male respondents were married. The finding implies that agricultural transformation agenda is a project of married individuals who are seen to be responsible according to family and societal standards. The studies of Lawanson (2010) asserted that married individual tends to have easy significant access to land and large family size which are traditionally owned and which will increase their access in participation in rural development effort.

The Table showed that majority (68.75%) of the women and men (57.50%) had been farming for 10-19years. The mean experience in farming activities was 21.10 and 18.31 years for male and female respondents respectively. In a similar way Nwaiwu (2013) reported that higher farming experience improves access in decision making and active participation in community development project.

The distribution based on household size indicates that greater proportion (72.50% and 62.50%) of the male and female respondent had household size of 6-10 persons respectively. The mean household size was 5.0 persons for male and female respectively.

On membership of social organization, the greater proportion (77.50% and 62.50%) of the female and male respondent in the area belongs to one form of social organization or the other. The studies of Ephraim (2013) reported that membership of social organization affords beneficiaries the opportunity of sharing information, project a collective demand and network together about different rural community development project in their area.

A reasonable proportion (92.50 and 90.00%) of the female and male received 1-2 extension visits per month. The mean number of visits for both male and female farmers per month was 2.0 times respectively.

The average monthly farm income as presented in the Table shows that the mean monthly farm income was ₦65, 500.00 and ₦53, 650 for male and female respectively. The result implies that both male and female in the area have a relatively high farm income which would increase their access in participation in agricultural transformation agenda in the area. It is expected that farmers who have a high farm income is expected to participate actively in agricultural transformation agenda than farmers with a low farm income.

The finding implies that the male and female respondent in the study area are mainly smallholder farmers operating on less than or equal to 1.5 hectares of farmland. It is expected that women with a reasonable farm size will participate actively in agricultural transformation agenda than women with smaller farm size.

The result of the respondent distribution based on occupation shows that majority (62.50% and 45.00%) of the female and male respondents in the study area had farming activities as their major occupation respectively. The finding implies that both genders have other income generating which is expected to increase their access to participation in agricultural transformation agenda in the area.

Table 1: Descriptive statistics of the households' socio-economic characterization

	Male		Female	
Age (Years)	Frequency	Percentage (%)	Frequency	Percentage (%)
Less than 30	1	2.5	4	10.00
31-40	7	17.50	10	25.00
41-50	11	27.50	24	60.00
51-60	21	52.50	2	5.00
Average age		53.10		45.31
Educational Level				
No formal education	2	5.00	4	10.00
Primary	13	32.50	14	35.00
Secondary	20	50.00	18	45.00
High education level	5	12.50	4	10.00
Marital Status				
Married	21	52.50	28	70.00
Single	13	32.50	5	12.50
Widowed	6	15.00	7	17.50
Farming Experience				
01-10	6	15.00	4	10.00
10-19	23	57.50	28	70.00
20-30	11	27.50	16	40.00
Average		21.10		18.31
Household size				
1-5	15	37.50	11	28.75
6-10	25	62.50	29	72.50
Total Mean		5.0		5.0
Social Organization				
Member	25	62.50	31	77.50
Non-member	15	37.50	9	22.50
Number of Visit (Per month)				
1-2	36	90.00	37	92.50
3-5	4	10.00	3	7.50
Total Mean		**2.0**		**2.0**
Monthly Farm unit				
Less than 20,000	3	7.50	2	5.00
21,000-40,000	9	22.50	12	30.00
41,000-60,000	13	32.50	20	50.00
80,000-100,000	15	37.50	6	15.00
Total Mean	₦53,650		₦65,500	
Farm Size (unit)				
Less than 1.0	4	10.00	5	12.50
1.0-1.5	30	75.00	32	80.00
1.6-2.0	6	15.00	3	7.50
Total Mean	1.28ha		1.23ha	
Occupation				

Farming	18	45.00	25	62.50
Civil service	5	12.50	3	7.50
Trading	9	22.50	7	17.50
Artisan	8	20.00	5	12.50

Source: Field Survey, 2016

Respondents Perceived effects of ATA Programme

The result of the respondent distribution based on perceived effects on agricultural transformation agenda is displayed in Table 2. Using a discriminating index of ≥ 2.5 for acceptance and < 2.5 for rejection, the respondents strongly agreed that they perceived a positive effect on improved access to fertilizer, increased maize production, access to improved cassava varieties, improved education and experience on new planting activities and increased vegetable production but they disagreed that ATA program has effect on increased snail production. The satisfactory high perceived effect of ATA programme recorded in the area may be connected to the relatively high level of education and efficient information system in the area.

Table 2: Distribution of Respondent by Perceived Effect of ATA (Mean= 80)

Gender	Perceived Effects on:	Rating					
Male		SA (4)	A(3)	SD (2)	D (1)	GM	Remark
	Improved access to fertilizer	22 (55.00)	13 (32.50)	4 (10.00)	1 (2.50)	3.50	Accepted
	Increased maize production	21 (52.50)	15 (37.50)	3 (7.5)	1 (2.50)	3.40	Accepted
	Access to improved cassava varieties	19 (47.50)	10 (25.00)	9 (22.50)	2 (5.00)	3.11	Accepted
	Improved education and experience of farmers on new planting activities	23 (57.50)	14 (35.00)	2 (5.00)	1 (2.50)	3.45	Accepted
	Increased vegetable production	25 (62.50)	6(15.00)	5 (12.50)	4(10.00)	3.31	Accepted
	Increased snail production	6 (15.00)	17 (42.50)	9 (22.50)	2(5.00)	2.41	Rejected
Female	Improved access to fertilizer	34 (85.00)	6 (15.00)	4(10.00)	1 (2.50)	4.06	Accepted
	Increased maize production	21 (52.50)	11 (27.50)	5 (12.50)	3(7.50)	3.33	Accepted
	Access to improved cassava varieties	25 (62.50)	7 (17.50)	5 (12.50)	3 (7.50)	3.35	Accepted
	Improved education and experience of farmers on new planting activities	27 (67.50)	8 (20.00)	3(7.50)	2(5.00)	3.50	Accepted
	Increased vegetable production	25 (65.20)	10 (25.00)	4 (10.00)	1 (2.50)	3.47	Accepted
	Increased snail production	9 (22.50)	15 (37.50)	6 (15.00)	10 (25.00)	2.43	Rejected

Keys; SA: Strongly Agreed: A: Agreed; SD: Strongly Disagreed; D: Disagreed GM: Grand Mean: Cut off point ≥ 2.5 Accepted; *Figures in parenthesis are percentage; *Field Survey Data, 2016*

Constraints to Gender Participation in ATA Programme

The results of male and female respondents' distributions based on constraints in participating in ATA are presented in Table 3. It revealed that greater proportion (97.50% and 95.00%) of female and male respondents complained of lack of fund. Others (92.25% and 90.00%) identified poor communication gap in ATA programme. Approximately, 82.25% of the respondents reported that ATA officials are corrupt. From the finding, it implies that both gender faces similar problem in participating in ATA programme. However, there is no doubt that this problem is responsible for poor participation in ATA programme, addressing this problem will be vital in building the capacity of the beneficiaries in the area.

Table 3: Distribution of the Respondents by Constraints

	Male		Female	
Constraints	Frequency	Percentage (%)	Frequency	Percentage (%)

Lack of fund	38	95.00	39	97.50
Poor communication	36	90.00	37	92.25
Corrupt ATA officials	33	82.50	33	82.50
Inadequate training of farmers	30	75.00	30	75.00
Lack of extension personnel	28	70.00	30	75.00
Difficulties in collecting inputs	27	67.50	25	62.50
Poor fingering species for fish production	26	65.00	22	55.00
Inadequate seed supply	25	62.50	21	52.50
Farmers not being aware of the programme	21	52.50	18	45.00

Source: Field Survey Data, 2016

Test of Hypothesis

Estimated effect of male and female Socio-economic characteristic on their Participation to ATA

The tests of the hypothesis were presented in Table 4 and 5. The result of the male and female distribution based on estimation of socio-economic characteristics and their participation in ATA project in the study area is presented in the Tables. A multiple regression analysis was estimated in four functional forms (linear, semi log, double log, and exponential forms).Based on the statistical significance of the coefficients, goodness of fit and the economic theory that supports socio-economic model, the exponential regression function was chosen as the lead equation. Based on the value of R^2 (0.758), F-Ratio value (6.591) for male and R^2 (0.621) and F-Ratio value (32.892) for female, (conformity of the signs with *apriori* expectations of the model and has the highest number of significant explanatory variables. The coefficient of multiple determinations (R^2) was found to be 75.80% for male and 68.10% for female and was statistically significant at 1% level of probability. This implies that the male and female socio-economic characteristic had a significant influence on their participation in ATA project and that the regression model has a very high explanatory power. This is an indication that 75.80% and 68.10% of the variation in participation of male and female was explained by the explanatory variables. The marginal effect is presented as follows:

Table 4: Estimated Influence of Male Socio-economic Characteristic on their Participation in Agricultural Transformation Agenda (ATA)

Explanatory Variables	Exponential	Semi-Log	Linear	Double-Log
Constant	52.947	2.337	3.294	15.908
	(5.909)***	(3.823)***	(2.555)***	(6.662)***
Age (X_1)	-1.000E-013	0.053	0.001	0.015
	(-2.440)**	(0.195)	(0.083)	(0.195)
Farm Size(X_2)	0.125	0.161	0.100	0.046
	(2.539)***	(2.555)***	(3.711)***	(2.555)***
Educational Level (X_3)	5.407E-007	0.263	0.015	0.076
	(1.643)*	(1.728)**	(1.509)*	(6.728)***
Farming Experience (X_4)	4.478E-010	0.169	0.014	0.049
	(0.586)	(1.218)*	(4.470)***	(2.218)**
Household Size (X_5)	0.001	0.096	0.017	0.027
	(0.527)	(0.411)	(0.482)	(4.411)***
Farm Income (X_6)	-7.946E-007	-1.094E-006	-8.463E-007	3.147E-007
	(-2.009)**	(-0.378)	(-0.316)	(2.578)***
Membership of Social Organization (X_7)	-0.318	0.228	-0.165	0.066
	(-0.874)	(3.300)***	(-1.217)*	(3.400)***
Extension Contact (X_8)	0.160	0.116	0.071	0.033
	(1.984)*	(0.978)	(1.166)*	(5.978)***
R^2	61.80	70.10	65.00	75.80
F-Ratio	2.580***	4.091***	2.945***	6.591***

Source: Computer Printout of SPSS (2016); values in Parenthesis are t-values *Statistically Significant at 10%; **Statistically Significant at 5%; *** Statistically Significant at 1%

Table 5: Estimated Influence of Female Socio-economic Characteristic on their Participation in Agricultural Transformation Agenda (ATA)

Explanatory Variables	Exponential	Semi-Log	Linear	Double-Log
Constant	53.125	2.842	3.521	1.053
	(4.353)***	(5.602)	(7.481)***	(3.352)***
Age (X_1)	1.000E-013	0.151	0.004	0.044
	(1.880)**	(0.640)	(2.678)***	(0.640)
Farm Size(X_2)	0.082	0.128	0.046	0.037
	(2.787)***	(3.748)***	(1.738)**	(2.748)***
Educational Level (X_3)	6.678E-007	0.011	0.006	-0.003
	(2.106)**	(5.094)***	(0.369)	(0.094)
Farming Experience (X_4)	1.465E-011	0.117	0.004	0.034
	(0.660)	(4.900)***	(0.518)	(2.900)***
Household Size (X_5)	0.032	0.046	7.877E-005	0.013
	(0.906)	(2.306)**	(3.200)***	(3.306)***
Farm Income (X_6)	2.328E-005	3.834E-007	7.742E-007	1.103E-007
	(0.197)	(4.122)****	(0.237)	(1.122)***
Membership of Social Organization (X_7)	2.761	0.106	-0.157	0.031
	(4.630)***	(6.508)***	(-0.745)	(1.508)**
Extension Contact (X_8)	0.002	0.039	0.008	-0.011
	(0.444)	(2.550)***	(1.220)*	(-0.350)
R^2	59.10	68.10	56.40	63.10
F-Ratio	9.434***	32.892***	12.405***	10.892***

Source: Computer Printout of SPSS (2016); values in Parenthesis are t-values *Statistically Significant at 10%; **Statistically Significant at 5%; *** Statistically Significant at 1%

Conclusion and Recommendation

Agricultural Transformation Agenda (ATA) project have been very helpful to beneficiaries in the area. Findings show that both gender faced similar problem in participating in the project. Beneficiaries complained of lack of funds and poor communication. It was therefore necessary that the government at all levels should intensify effort on information dissemination through strengthened rural development extension service system.

The study therefore recommends that

i. Government should provide funds for farmers, electricity and good communication networks in rural areas so that the farmers can receive adequate information which will eventually reduce the constraints to increase in agricultural production.
ii. More extension personnel should be employed to give a helping hand to the available few. This can be done if the barn on employment is removed by the Government.
iii. The government should encourage men and women to participate equally in agriculture in order to increase agricultural production.

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