

Role of Indigenous Social Organizations in Enhancing Food Security: A Case Study of Some Selected States in Niger Delta Region, Nigeria

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Abstract

The study examined role of indigenous social organizations in enhancing food security in selected states of in the Niger Delta region of Nigeria. It examined the farmers' characteristics, years of experience and roles carried out by indigenous social organizations, ascertained perceived benefits of participating farmers, and; identified the factors that limit farmers from effectively participating in these organizations. Primary data used were obtained through the use of reliable and validated question instrument. The respondents numbering 224 were selected through multi-stage sampling technique. The generated data were analyzed with the use of descriptive and inferential statistics. Results showed that most (58.48%) of the farmers were also civil servants and they (73.66%) were into part-time farming. Participants of indigenous social organizations (ISO) average farm size, farm experience, and farm income were 3.01 ha., 11.4 years and ₦280,750.00 respectively. The regular activities carried out by the respondents were savings and loans, provision of credits to members, crop farming, supply of farm inputs and processing of farm products (they had means ≥ 2.00). Perceived benefits achieved from participating in their groups include improvement of farm output, farm income, standard of living and farming skills. The difference in mean farm income between participants and non – participants was ₦116,964.29 (significant at the 5% level) and it was in favour of group participants. In addition, Logistic regression showed that farm size ($b = 1.758$), farming status ($b = 0.839$), farming experience ($b = 0.259$) and participation index ($b = 0.243$) were significant to respondents farm income. Based on findings the study recommends the need for the indigenous group leaders to seek and incorporate members' views in times of designing activities for the group. Also, leaders of the groups should ensure that benefits accruing to the groups are equitably distributed among members.

Keywords: farmers, farm income, participation, indigenous organization, participants, enhance, output

INTRODUCTION

The importance of the agricultural sector can never be over emphasized especially in where provision of food is concerned. This is because it is one of the indispensable needs of man, hence according to Olaolu *et al.*, (2013) lack of food is the most critical dimension of poverty. Stating further, Olaolu *et al.*, (2013) noted that “when hunger is excised from poverty, the burden of poverty is light”. It therefore implies that any policy of the government addressing poverty is meant to address food security for her populace and this involves making food available in adequate quality and quantity.

Sadly, the contribution of the agricultural sector to food provision and its associated activities seemed to be declining due to explosion in population which rose from 68.45 million in 1980 through 145.03 million in 2010 to 206,139,589 in 2020 (Nigeria Population, 2020). The steady decline of the agricultural sector has remained a source of worry to successive governments of the country, Nigeria. This accounts for why they have always advanced different policies to see how the sector could be revamped. Anyaoga and Anyaoga (2009) identified some of these policies and programmes since 1980 to include; Green Revolution Programme (1980), Directorate for Food, Roads and Rural Infrastructure (1988), National Agricultural Land Development Authority (1995), Community Based Agricultural and Rural Development Project (1995), Root and Tuber Expansion Programme (1997), Special Rice Programme (1998), Agricultural Component of President Yar Adua’s Seven Point Agenda (2007), and Growth Enlightenment Scheme (GEES) of President Good Luck Jonathan regime, just to mention a few.

An assessment of most of the aforementioned programmes revealed that they did not lack brilliant ideas or packaging, but implementation led to unsatisfactory or intended results (Tiri, *et al.*, 2014). Conscious of the fact that poor implementation was the bane of past programmes there is the need to incorporate lessons learnt in those programmes in formulating new ones that would permit the provision of adequate food and the use of food system to empower people. Such lofty programmes would call for a paradigm shift to small-holder farmers’ participation in indigenous social groups, a panacea for improved agricultural production and increased farm income.

The focus on the small-scale farmers is premised on the fact that agricultural production landscape is dominated by small-holder farmers (Adebayo and Sorungbe, 2002). Adebayo and Sorungbe, (2002) stated that these small-holder farmers produce as much as 85% of the total production. Going by this fact, Adebayo and Sorungbe, (2002) therefore argued that if the country (Nigeria) actually hopes to achieve food sufficiency and food security, the small-holder farmers should be targeted to achieving the goal. Although, Eze, *et al.*, (2006) cleared that the adoption of recommended scientific farming techniques in place of traditional practice is a sure must for the small-holder farmers to realize the aforementioned goal.

The small-holder farmers are most times clouded by myriads of problems like little or no form of savings, no storage facilities, strong dependence on agricultural labour market and the adoption of high labour intensive cultural practices (Adebayo and Okuneye, 2005). Okwuokenye (2014) advanced that these shortcomings make it difficult for these farmers to break away from the vicious cycle of poverty and dependence. Although same author (Okwuokenye, 2014) advanced

that the same farmers can overcome their poverty status by simply participating in social groups targeted at improving farmers' welfare.

Bellemare and Barrett (2004) defined participation as a means to educate citizens and to increase their competences. In this regard, participation is seen as a vehicle for influencing decisions that affect the lives of citizens and an avenue for transferring power.

Some of the common objectives of social groups according to Ekong (2003) are to; increase the productive efficiency of members, institute innovations in terms of making new and improved farm inputs available to farmers, develop leadership qualities among members, establish an organized and significant local group through which government rural development programmes can be transmitted readily to reach a large number of people, encourage savings and the accumulation of capital among rural people and establish a wide range of credit facilities for members thereby enhancing more investments on the farms. FAO (2009) reported that participation in groups would be able to provide first hand information as regards issues affecting them and be able to contribute appropriately to the solutions of the problems.

Shamala and Shingi (2006) identified six critical factors influencing farmers' participation in social organizations they are; the degree of farmer's dependence on the outputs of the organized activity, the degree of certainty of the availability of the outputs, the extent to which the outputs will be available only as a result of collective action, the extent to which the rewards associated with the collective action will be distributed equitably, the extent of availability of rewards within a reasonable time frame and the extent to which the rewards are commensurate with the costs associated with continued participation.

Fung (2006) classified participation in groups as informal, semi-formal and formal. Farinde and Adisa (2005) identified twelve types of community based organizations according to their composition and functions as follows; Community development associations, Cooperative societies, Town/village improvement/development unions, Occupational/professional associations, Age grade/groups/associations, Youth associations, Trade and commercial associations, Religious organizations, Gender groups, Indigene clubs/societies, Tribal or ethnic groups/associations and Other local group

In the advocacy of encouraging farmers into groups, Taiye *et al.*, (2006) identified farmers participation in groups (indigenous social organizations) as a major factor worthy of fast tracking on their level of adoption of improved farm practices and consequently their farm income and therefore engendering development. In a similar manner, participation of farmers in social organizations was also acknowledged by Mgbada (2006) as a primary tool that can necessitate agricultural development. Mgbada (2006) therefore advised that farmers should beyond all odds try to and be adequately encouraged to join indigenous social groups like cooperative associations and agricultural / farm organizations. In supporting the above advocacy, Dresrusse (2006) strongly stated that human resource development (which can be most acquired through participation in social groups) is the key factor behind all progress in increasing farm yield. Another scholar,

Sherry (2006) in his study concluded that it is crucial to work through social groups because it has been identified as an essential ingredient for project success. It is against this background that this study advocates for the small-scale farmers collective efforts through participation in indigenous social groups to help themselves overcome the litany of problems plaguing them and then initiate a course of self-reliant development.

Objectives of the Study

- i. Examine the farm characteristics of the respondents in Delta and Edo States
- ii. Examine the years of experience and roles carried out by indigenous social organizations in the study area.
- iii. Ascertain the perceived benefits of farmers participating in indigenous social organizations in the states, and;
- iv. Identify the factors that limit the farmers from effectively participating in indigenous social organizations in the study area.

Hypotheses of the Study

- i. There is no significant relationship between farm income of farmers and non-farmers of indigenous social organizations
- ii. Indigenous social organizations (ISO) members' farm characteristics and their participation in indigenous social organizations have no significant influence on their farm income.

A conceptual framework for the study

The conceptual framework for the study is aligned with small-scale farmers participation in farming activities in indigenous social organization thereby deriving some level of benefits in terms of achieving increased farm output and income as well as been able to access to credit facilities and obtaining loan facilities for their farming activities among others. Through these derived benefits the farmers are able to attain food security for the nation. (see Figure 1). Models expressed as conceptual frameworks help in the understanding and implementation of agricultural projects (Ovharhe, 2019) Farmers' levels of participation in their organizations are noticeable in registration, level of: payment of monthly dues, repayment of revolving loans with interests, and other necessary contributions, abiding by rules of their groups, attendance of human capacity development programs and meetings. Through high level of farmers participation in social groups there is the likelihood of attaining increased farm output, increased income and improved standard of living, altogether would perhaps result to the product of food sufficiency and security in the area of study in particular and nation in general.

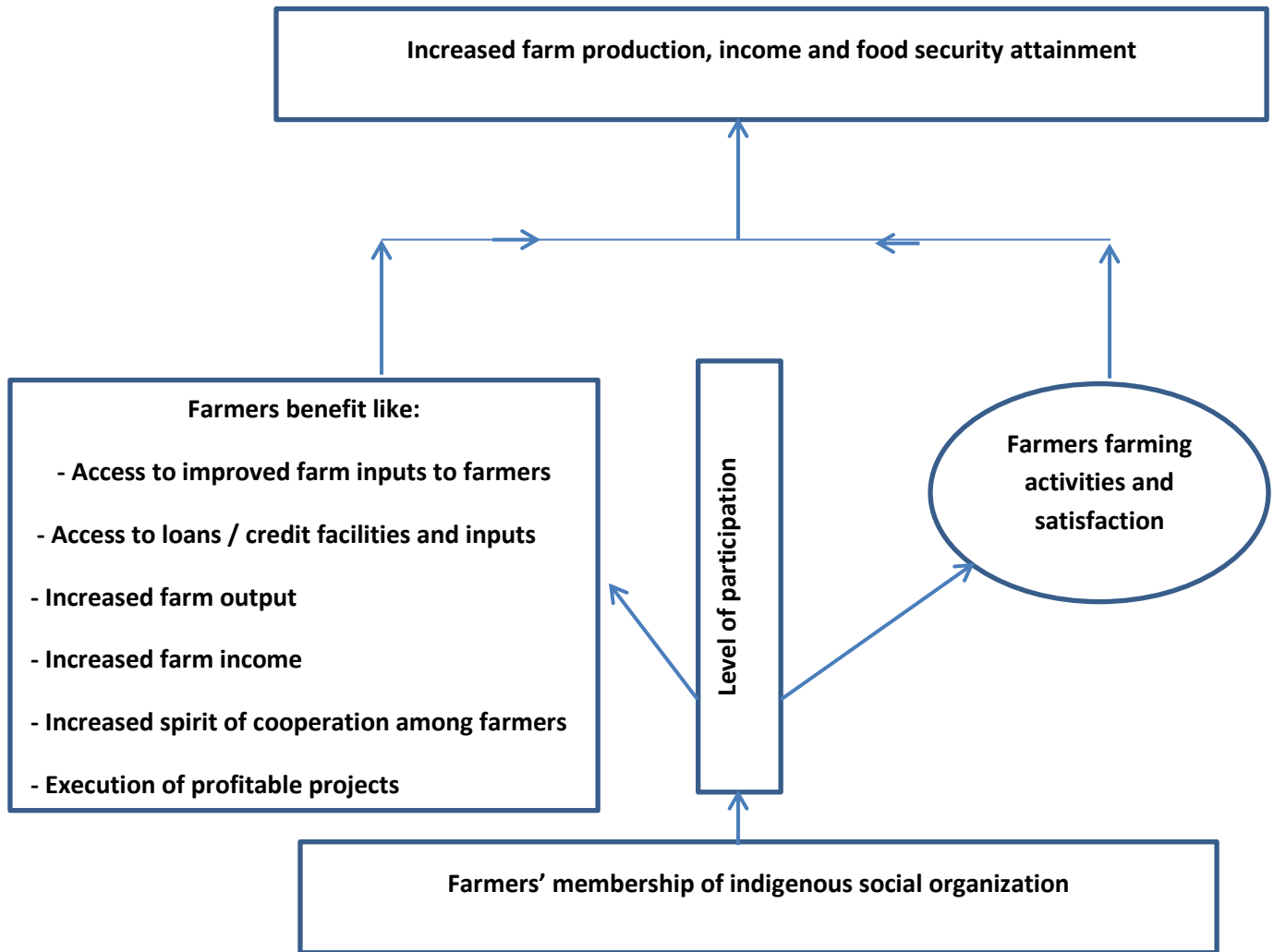


Fig.1: Conceptual framework for small-holder farmers' participation in indigenous social organizations towards attaining food security.

METHODOLOGY

Area of Study

The study was carried out in two contiguous states of the Niger Delta region of Nigeria. The states are Delta and Edo.

Delta State

Delta State is one of the nine states of the Niger Delta and it was excised from the former Bendel State in 1991. It is one of the major oil producing states in the Niger Delta region of Nigeria and

this constitute the major source of revenue to the state. The State is bound on the north by Edo State, on the east by Anambra and Rivers States, on the south by Bayelsa State and on the west by Ondo State and the Bight of Benin of the Atlantic Ocean. It lies within Latitudes $5^{\circ} 00'$ and $6^{\circ} 30'$ N, and Longitudes $5^{\circ} 00'$ and $6^{\circ} 45'$ E. The state covers an area of approximately 17,698 Km² (DTSG Agric Policy, 2006) with an estimated projected population size of about 5,003,362 million people (National Bureau of Statistics, 2019). Delta State has 25 Local Governments Areas with its capital at Asaba. Its major towns include; Warri, Ughelli, Agbor, Sapele, Koko, Oghara, Ogwashi-Uku, among others. The major ethnic groups are Igbo, Itsekiri, Urhobo, Ijaw, Ika and Isoko. There are so many mineral deposits like petroleum and natural gas, kaolin, laterite, clay, gravel, silica sand bauxite and granite (NAEC, 2008). The indigenes of Delta State engage mostly in agriculture (cropping, animal rearing and fishing) for their livelihood.

Edo State

Edo State is one of the Niger Delta States and the remnant of the former Bendel State after Delta State has been carved out in 1991. It has an area of about 19,794 Km². The State lies roughly between Longitudes $05^{\circ} 04'E$ and Latitudes $05^{\circ} 44'E$ and $07^{\circ} 34'N$ and it is bounded on the west by Ondo State, on the south by Delta State, on the east by Kogi and Anambra States and on the north by Kogi State (Encyclopaedia Britannica, 2008). The State has 18 LGAs with its capital seat at Benin City (NAEC, 2008). Encyclopaedia Britannica (2008) also stated that the people's main spoken language is Edo and the lingua franca is pigeon English, while the official language is English Language. The projected estimated population according to National Bureau of Statistics (2019) is 4,235,595 million people and they are spread over about 19,639.7 square kilometers. The state's major towns are; Auchi, Ekpoma, Uromi, Irrua, etc. The people are popular in Arts and crafts and these have contributed to the tourism and creation industry in the State. Several mineral endowed in the State are quartzite, marble, limestone, lignite, gold. Petroleum is found in some towns of the state like Ovia and Orhionmwon (NAEC, 2008).

Sampling Techniques and Sample Size

The multi-stage random sampling method was used for selecting the respondents. Stage one involved the purposive selection of the two (2) contiguous states (Delta and Edo) out of the nine states (Abia, Akwa-Ibom, Bayelsa, Cross River, Delta, Edo, Imo, Ondo and Rivers State) in the Niger Delta States. The second stage involved the random selection of two out of the three senatorial zones in each of the states, thus making a total of four (4) senatorial zones. In stage three, two local government areas (LGAs) were randomly selected from each of the senatorial zones and this made it a total of eight (8) LGAs used for the study. Stage four has to do with the random selection of three registered indigenous social organizations (ISO) per Local Government Areas and this brought the total number of ISOs used for the study to twenty-four (24). Efforts were made to be sure that the organizations were viable and have existed for two years and above. The list of registered ISOs was obtained from the States Ministry of Agriculture.

Stage five involved a proportional random sample of 50% of farmers of the sampled ISOs. They were taken and administered with the question instrument. The study adopted a proportional sampling since the groups had an unequal membership size. Membership size in the sampled group was four hundred and forty nine (449), out of which two hundred and twenty four (224)

(approximately 50%) was used for the study (see Table 1). An equivalent number of non-farmers indigenous social organization were randomly sampled per community for comparative purposes. This brought the total number of respondents used for the study to four hundred and forty eight (448) farmers.

Table 1: Delta and Edo States list of viable indigenous social organizations sampled and used for the study

State	Senatorial Zone	L.G.A.	Indigenous Social Organizations	Membership Size (50%)
Delta	Delta North	Ika North East (n = 40)	- Out – Oganishu multi-purpose cooperative society Ute-Ogbege	12
			- Ceanio farmers multi-purpose cooperative society Ute-Okpu	15
			- Ika North East oil palm processor farmers’ multi-purpose cooperative society – Boji – Boji. Owa.	13
			- Onyema farmers’ multipurpose cooperative society - Afor Town	13
			- Out – Oyeneka farmer’s multi-purpose cooperative society – Okpai Obeze	10
			- Onyedi – ndu farmers’ multi-purpose cooperative society – Iselegu	14
	Delta South	Isoko South (n = 38)	- Unique multi-purpose cooperative society, Oleh	13
			- Jaktop multi-purpose cooperative society, Olomoro	12
			- Obokparo women better life multi-purpose cooperative society, Emede	13
		Bomadi (n = 36)	- Rayma Clergy farmer multi-purpose cooperative society, Bomadi	13
			- Joyful farmers’ multi-purpose cooperative society, Bomadi	11
			- Tarakeme fish farmers’ multi-purpose cooperative society, Bomadi	12

Edo North	Etsako East (n = 19)	- Pointer family support programme multi-purpose cooperative society	6
		- Oshief farmers multi-purpose cooperative society	7
		- Aiseokhuri farmers multi-purpose cooperative society	6
	Etsako West (n= 18)	- Enesegbe farmers multi-purpose cooperative society	6
		- Itsemhe farmers multi-urpose cooperative society	5
		- Esusegbe farmers multi-purpose cooperative society	7
Edo South	Oredo (n = 19)	- Helping hand multi-purpose cooperative society	7
		- Zion progressive multi-purpose cooperative society	6
		- Itsemhe farmers multi-purpose cooperative society	6
	Uhunmwode (n = 17)	- Ekhon-Nuwaya multi-purpose cooperative society	6
		- Oganisu farmers multi-purpose cooperative society	5
		- Egba I fadama III farmers multi-purpose cooperative society	6

Source: Ministry of Agriculture and Natural Resources, Asaba, Delta state, (April, 2020) and Ministry of Agriculture and Natural Resources, Benin, Edo state, (April, 2020)

Sources of Data and Data Collection Instrument

Primary and secondary sources of data were used for the study and the question instrument were questionnaire and interview schedule which were respectively administered to literate and illiterate farmers. The instruments were personally with the assistance of trained enumerators administered to the respondents. Two approaches (validity and reliability) were used to evaluate the research instrument. In the case of validity, the content or face validity approach were experts in the field of agricultural extension were presented with the instrument for assessment, criticism and suggestions (Erie, 2009). The reliability of the question instrument was ascertained using the Crombush Alpha method. This was achieved from data that were collected from thirty (30) test subjects in areas outside the research communities. It yields a correlation value of 0.77 which is an indication that the instrument was reliable.

Analytical Techniques

Data were analyzed using descriptive (frequency, percentage, mean and standard deviation) and

inferential statistics (t-test and Logistics regression). Farmers’ socio-economic characteristics and years of experience of farmers in their groups were analyzed using descriptive statistics. Activities of indigenous social organizations, perceived benefits of farmers participating in ISO and factors limiting the farmers participation in ISOs were analyzed using four-point Likert scale. Activities of ISOs were analyzed as follows; “Strongly Agree” (coded 3), “Agree” (coded 2) and Disagree (coded 1). It produced a weighted mean of 2.0 (obtained as $\{3 + 2 + 1 = 6\} / 3 = 2$). Mean score of 2.0 and above indicated that they agreed with the activities they carried out and otherwise if less than 2.0.

Perceived benefits and factors limiting participation in ISOs were analyzed as follows “Strongly Agree” (coded 4), “Agree” (coded 3), Disagree (coded 2) and Strongly Disagree (coded 1). It produced a weighted mean score of 2.5 (obtained as $\{4 + 3 + 2 + 1 = 10\} / 4 = 2.50$). Mean score of 2.50 and above were considered as important, while those with values less than 2.50 were regarded as not important. In where limiting factors are concerned, mean scores of 2.50 and above were considered as limiting factors of participation and other wise if values are less than 2.50

T-test was used to determine if a significant difference exist between mean income of farmers participants and non-participants of ISOs. Madukwe (2005) concluded that t-test is used to compare the means between two groups. The formula for t- test is as shown below:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \quad (\text{Madukwe, 2005})$$

Where:

\bar{x}_1 = the mean of group 1 ;

\bar{x}_2 = the mean of group 2

S_1 = standard deviation for group 1 ; S_2 = standard deviation for group 2

S_1^2 = variance of the first group ; S_2^2 = variance of the second group

n_1 = size of the first group ; n_2 = size of the second group

$\sqrt{\quad}$ = square root

Decision rule for t – statistics:

i.e. if $t_{cal} > t_{tab}$ = reject null and accept alternative hypothesis

$t_{tab} > t_{cal}$ = accept null and reject alternative hypothesis

Furthermore, hypothesis 2 was analyzed using Logistic regression. The variables in the model are specified as:

Y = Farmers farm Income (₦)

X_1 = Primary occupation (Crop farming = 1, Fish farming = 2, Trading = 3, Civil servant = 4, Company employee = 5, Self-employed = 6)

X_2 = Farm size (measured in hectare)

X_3 = Farming status (dummy: full time = 1; part time = 0)

X_4 = Farming experience (measured in years)

X_5 = Participation index score (measured in percentage)

RESULTS AND DISCUSSION

Socio-economic characteristics of the respondents

The respondents’ socio-economic characteristics is shown in Table 2. Results revealed that the

primary occupation of most (58.48%) farmers participating in indigenous organizations was civil service jobs, while most (34.82%) of the farmers non-participants primary occupation was crop farming. Other occupations engaged by ISO participants include crop farming (14.73%), trading (9.38%), self employment (8.93%), fish farming (7.59%) and company employment (0.89%). On the other hand, the non-participants farmers of ISO engaged in fish farming (18.75%), civil service (18.30%), self-employment (12.95%), trading (9.82%) and company employment (5.36%). Through personal communication, the respondents (participants) attributed their engagement in civil service jobs to their high level of education attainment. Reports of Akinbili *et al.*, (2008) supports this finding as they noted that the more educated people are, the more willing they would want to participate in groups and projects.

The results also revealed that most (73.66%) participants and non-participants (59.82%) were into part-time and full-time farming respectively. the implication of the result is that since most of the farmer group participants were part-time farmers, it infers that they depend on other source(s) of livelihood like earnings from civil service jobs, trading, etc. On the contrary, the participation of the non-participants on full time basis is an indication that farming activities was their major source of livelihood. The average farm size of farmer participants of ISO was 3.01ha and majority (45.98%) belonged to this category (2.1 – 4 ha.). About 33% and 21% respectively had less than 2.1 and above 4 ha. Average farm size of non-participants of ISO was 2.32 ha. Majority (43.75%) of them had less than 2.1ha., while about 56.25% had more than 2 ha. The result implies that both groups of farmers could be described as small-holder farmers. The result is in consonance with findings of Mgbada (2006) who noted that majority of Nigerian farmers are described as small-scale farmers because most of their farm sizes are usually less than 4 ha.

The result also revealed that most (28.13%) ISO farmer members and non-members (46.88%) had 5 – 9 years experience in farming. The mean farm experience was 11.4 years for ISO participants and 7.73 years for non-participants. The result thus suggests that the former group were more experienced than the later. The participants' long experience in farming puts them in an advantageous position to understand the challenges associated with farming operations in the study area. The understanding of these challenges may explain why they decided to participate in the ISOs. They agreed (through personal communication) that ISO addresses farm challenges. The result agrees with that of Okwuokenye and Onemolease (2011) that indicated thus, having good farming experience in groups activities will enable them to be disposed to know the needs and problems associated with the farming activities.

The annual farm income of the respondents unveiled that most (54.45%) of the ISO farmers participants earned between ₦200,001 – ₦299,000. About 16% earned below ₦200,000 while 34% of them earned above ₦299,000. On the other hand, most (48.21%) of the non-participant farmers earned between ₦100,000 – ₦199,000. About 27% and 25% respectively below ₦100,000 and above ₦199,000. The average farm earnings of both groups was ₦280,750 and ₦163,785.71 respectively. The difference was ₦116,964.29 and it was in favour of the ISO participant farmers and this thus shows the positive effect of participating in ISOs. Similar result regarding positive influence of participating in indigenous social groups was advanced by Abegunde (2009) and so expressed agreement with this finding.

Table 2: Farm characteristics of respondents, n = 224

Characteristics	Categories	ISO Members	ISO Non-members
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		Freq	%	Mean	Freq	%	Mean
Primary occupation	Crop farming	33	14.73		78	34.82	
	Fish farming	17	7.59		42	18.75	
	Trading	21	9.38		22	9.82	
	Civil servant	131	58.48		41	18.30	
	Company employee	2	0.89		12	5.36	
Farming status	Self-employed	2	0.89		29	12.95	
	Part time	165	73.66		90	40.18	
	Full –time	59	26.34		134	59.82	
Farm size range (ha)	≤ 2	73	32.59		98	43.75	
	2.1- 4.0	103	45.98		91	40.62	
	4.1- 6.0	27	12.05		29	12.95	
	> 6	21	9.38	3.01	6	2.68	2.32
Farming experience (years)	< 5	37	16.52		59	26.34	
	5 – 9	63	28.13		105	46.88	
	10 – 14	54	24.11		43	19.20	
	15 – 19	37	16.52		14	6.25	
	20 & above	33	14.73	11.4	3	1.34	7.73
Income range (₦)	< 100,000	2	0.89		61	27.23	
	100,000 - 199,000	33	14.73		108	48.21	
	200,000 - 299,000	113	50.45		25	11.16	
	300,000 - 399,000	50	22.32		24	10.71	
	400,000 - 499,000	21	9.38		4	1.79	
	≥ 500,000	5	2.23	₦280,750.00	2	0.89	₦163,785.71

Difference in income between member farmers of ISO and non-members = ₦116,964.29

Source: Field survey, 2021

Respondents Experience with Indigenous Social Organization (ISO)

The respondents experience with the indigenous social organizations (ISOs) is shown in Table 3. Respondents' experience shows the modal (38.84%) experience of the respondents to be 4 - 6 years. About 16% and 45.53% of them respectively had less than 4 years and more than 6 years experience with their organizations. The respondents had an average of about 7 years with their ISOs. The result implies that they are experienced in their organizations and their long patronage perhaps is not unconnected to the fact that they must have been benefiting from the organizations. Results of Okwukenye (2014) confirmed this finding. The author stated that farmers who are

experienced in their social organizations learn more about farming technology and so are able to improve their farm productivity and economic livelihood.

Table 3: Respondents experience with indigenous social organizations

Experience (years)	Delta		Edo		Pooled		Mean
	Freq.	%	Freq.	%	Freq.	%	
1 – 3	21	13.9	14	19.2	35	15.63	
4 – 6	61	40.4	26	35.6	87	38.84	
7 – 9	38	29.2	21	28.8	59	26.34	
10 – 12	22	14.6	8	11.0	30	13.39	
13 & above	9	6.0	4	5.5	13	5.80	
Total	151	100.0	73	100.0	224	100.00	6.65

Source: Field Survey, 2021

Roles carried out by indigenous social organizations

The activities ISO carries out are many (Table 4). The major ones are savings and loan provision (mean = 2.68), provision of credit to members (mean = 2.43), crop farming (mean = 2.36), supply of farm inputs (mean = 2.21) and farm products processing (mean = 2.18). Savings and loans as well as provision of credits to members are major activities carried out by most social organizations. Abegunde (2009) spelt out that indigenous social groups give out loans/credits to their member. Through personal communication, a good number of the respondents advanced that the giving of credits is their major reason for participating in the social groups they belong.

Table 4: Roles carried out by indigenous social organizations

Activities of farmers ISOs	Delta		Edo		Pooled		Ranking
	Mean	SD	Mean	SD	Mean	SD	
- Savings and loans	2.64*	0.57	2.71*	0.54	2.68*	0.56	1
- Provision of credits to members	2.34*	0.69	2.51*	0.71	2.43*	0.70	2
- Crop farming	2.35*	0.62	2.36*	0.65	2.36*	0.64	3
- Farm Inputs supply e.g. seed, fertilizer etc	2.25*	0.67	2.16*	0.59	2.21*	0.63	4
- Processing of farm products (e.g. ‘garri’, palm oil, fish)	2.13*	0.71	2.23*	0.66	2.18*	0.69	5
- Marketing of products	1.92	0.55	1.79	0.64	1.86	0.60	6
- Training/skill development among members	1.97	0.65	1.73	0.69	1.85	0.67	7
- Fishery	1.75	0.81	1.71	0.81	1.73	0.81	8
- Live stock / poultry production	1.77	0.64	1.68	0.74	1.73	0.68	9

Regular Activities (mean \geq 2.00)

Source: Field survey, 2021

Perceived benefits of respondents participating in indigenous social organizations (ISO)

Table 5 shows the perceived benefits derived by ISO participant farmers. The participants

advanced several benefits (which have been ranked in their order of importance) they have gained for belonging to ISOs. Amongst these benefits, enhancement of farm output (mean = 3.48), increased knowledge of farm practices (mean = 3.46), increased income (mean = 3.43) and improved farming skills (mean = 3.12) were the first, second, third and sixth ranked benefits they derived from participating in ISOs. Taiye *et al.*, (2006) agreed with these findings as they noted that participating in groups make the participants to share knowledge that helps to improve their farm knowledge, that consequently lead to improvement in productivity and income.

The public's perception and rating about oneself (mean = 3.36) was the fourth derived benefit. The respondents (through personal communication) noted that the social group farmer's belong has a way of influencing how he/she is being rated in the community. Another perceived benefit was improvement of farmers living standard (mean = 3.31) (ranked 5th) and this is in line with findings of Abegunde (2009). He acknowledged that participating in ISOs help to ameliorate the poverty status of the participants. The seventh benefit farmers derive from participating in ISOs is the facilitation of linkage to input providers (mean = 2.85). Results of Reid (2000) concur with this finding. He stated that grouping in social organizations helps to forestall true democratic processes among members and high resource (input) acquisition.

Table 5: Perceived benefits of respondents' participation in indigenous social organizations

Farmers perceived benefits	Delta		Edo		Pooled		Ranking
	Mean	SD	Mean	SD	Mean	SD	
- Enhanced farm output	3.44*	0.53	3.47*	0.53	3.48*	0.53	1
- Increased knowledge of farming practices	3.45*	0.59	3.47*	0.63	3.46*	0.61	2
- Improved income	3.48*	0.56	3.38*	0.57	3.43*	0.57	3
- Improved the public's good Perception and rating about me	3.28*	0.48	3.44*	0.53	3.36*	0.51	4
- Improved living standard	3.32*	0.48	3.29*	0.46	3.31*	0.47	5
- improved farming skills	3.03*	0.67	3.21*	0.55	3.12*	0.61	6
- Facilitated linkage to input providers	3.06*	0.56	2.64*	0.92	2.85*	0.74	7
- Has influenced your political level in the community	1.76	0.82	2.03	0.76	1.90	0.79	8

*Regular (mean ≥ 2.50)

Source: Field survey, 2021

Factors limiting respondents' effective participation of respondents in Indigenous social organizations

The respondents' acknowledged that they are facing some factors causing limitations in the indigenous social group they belonged. The farmers rightly stressed that the constraints either affect the group or the farmer participants directly. However, the limiting factors are shown below in Table 6. They include inability of the organization to pursue members goals (mean = 3.27),

hijacking of benefits by few privileged members (mean = 3.20), members refusal to repay loans given to them (mean = 3.20). they also cleared that poor leadership style of the organization's executive (mean = 3.17), lack of government/NGOs assistance (mean = 3.04) and the hijacking of the organization's activities by politicians (mean = 2.97). Insufficient capital to run the affairs of the organization (mean = 2.95), poor access to agricultural inputs (mean = 2.91) and rigid rules of the organization (mean = 2.77) especially for new potential members were other factors limiting farmers participation in their groups.

Reports of Damar (2003) supported the findings that insufficient capital, poor access to agricultural inputs, poor leadership style and lack of subject matter among others are some of the problems plaguing participation of farmers in indigenous organizations. Reports of Sinkaiye (2005) agreed that group's failure to address member's needs, hijacking of benefits by few privileged members and rigid rules of organizations are factors that discourage participation of farmers in indigenous social groups. Akpabio (2000) studies revealed that often time's group participants default in loan repayment and this act has a way of negatively affecting members commitment to group activities.

Table 6: Factors limiting respondents' effective participation in indigenous social organizations

Limiting factors	Delta		Edo		Total		Ranking
	Mean	SD	Mean	SD	Mean	SD	
- Inability of the organization to pursue members goal	3.31*	0.71	3.22*	0.58	3.27*	0.65	1
- Hijacking of benefits & affair by few privileged members	3.21*	0.70	3.18*	0.61	3.20*	0.66	2
- Members refusal to repay loans	3.14*	0.46	3.26*	0.60	3.20*	0.53	3
-Poor Leadership style of organization's Executive	3.04*	0.76	3.30*	0.70	3.17*	0.73	4
-Lack of government/NGOs assistance	3.02*	0.57	3.05*	0.60	3.04*	0.59	5
-Insufficient capital to run affairs of the organization	2.93*	0.78	2.97*	0.69	2.95*	0.74	6
-The organizations activities are mostly hijacked by politicians	3.01*	0.69	2.93*	0.71	2.97*	0.70	7
-Poor access to agricultural inputs	2.92*	0.62	2.89*	0.57	2.91*	0.60	8
-Rigid entry rules of the organization	2.83*	0.71	2.71*	0.75	2.77*	0.73	9
Poor organization of group's activities	2.42	0.73	2.33	0.75	2.38	0.74	10
-High dues and levies	2.30	0.63	2.19	0.54	2.25	0.59	11

*Agreed (mean \geq 2.50);

Source: Field survey, 2021

Testing of Hypotheses of the Study

Effect of farmers' participation in indigenous social organizations on farm income level

Table 7 shows the effects of farmers' participation in Indigenous social organization (ISO). This was carried out using the participant and non-participant approach. The mean farm income of

farmers participating in ISO and those not participating was ₦280,750.00 and ₦163,785.71 respectively. The mean of the former was higher than that of the later. The difference in their mean income was ₦116,964.29, it was in favour of farmers participants of ISO and was significant at the 5% level (1.645) since the calculated t-value (27.324) was greater than the tabulated t-value. On this account, the null hypothesis was rejected in favour of its alternative which states that there is significant relationship between income of farmers and non-farmers of indigenous social organizations. From the result, it was concluded that farmers' participation in ISO has a way of enhancing their socio-economic characteristics especially in where income generation is concerned. This result is supported by findings of Taiye *et al.*, (2006). The authors asserted that individual farmers' capacity to handle agricultural innovations is assured and their skills improved through participation in indigenous groups. They further stressed that such capacity will result to a positive impact on farmers productivity and farm income.

Table 7: Effect of farmers' participation in indigenous social organizations on farm income level (t-test)

ISO Membership Status	n	Mean Income (₦)	Difference (₦)	t-value
Farmers ISO members	224	280,750.00		
Non-farmers ISO members	224	163,785.71	116,964.29	27.324*

*Significant at the 5% level (critical t-value = 1.645)

Influence of indigenous social organization farmers' farm characteristics and participation in ISO activities on farm Income

The influence of indigenous social organization (ISO) farmers farm characteristics and participation in ISO activities on farm income was analyzed using Logistic regression (see Table 8). The model Chi-square ($X^2 = 45.341$), degree of freedom (df) = 6 is significant at the 5% level (Critical $X^2 = 2.733$). This is an indication that the model is significant and appropriate for the test. The coefficient of determination (adjusted R^2) was 0.737. This implies that the explanatory variables have been able to explain 73.7% variation in the dependent variable (farm income). The result shows that four out of five of the explanatory variables have significant influence on farmers farm income. The variables are however arranged in the order of magnitude of their beta-coefficient.

The result for farm size of the respondents ($b = 1.758$; $t = 3.947$) was positively signed and significant at the 5% level. The implication of the result is that farmers with larger farms tend to produce and earn more income than farmers with smaller farms. The odd ratio was 3.137 and thus suggests that farmers with larger farm sizes are three times likely to have higher farm income. The result is in line with the findings of Adeniyi (2002) who asserted that famers total farm output is bound to increase at an increasing rate as farm sizes increase. Farming status ($b = 0.839$; $t = 2.562$) revealed a positive and significant relationship with farm income. From result on Table 1, most (73.66%) of the ISO participant farmers are into part-time farming and for this reason, it therefore suggest that the more farmers are into part-time farming, the more their income is likely to be. The odd ratio was 2.07. This implies that the farmers who are into part-time farming are two times likely to have higher farm income. Studies of Abegunde (2004) supported this finding. The

author summed that productivity and income of the farm are bound to increase when funds used in operating farm activities are increased from any cheaper source and such funds still have to be properly managed.

A positive and significant relationship ($b = 0.259$; $t = 2.315$) exist between respondents farming experience and farm income. The implication of the result is that having high farm experience will result to higher farm income. The odd ratio was 1.564, indicating that farmers with higher farm experience are approximately two times likely to have higher farm income. The studies of Madukwe (2005) revealed a positive relationship between farming experience and farm income, thus confirmed this study. Participation index score ($b = 0.243$; $t = 2.816$) of the respondents as well revealed a positive and significant relationship with the farmers farm income. The implication of the result is that the higher level of farmers' participation in ISOs, the higher their level of farm income. The odd ratio was 2.031, suggesting that farmers with higher participation index score are two times likely to yield higher farm income.

Table 8: Influence of ISO farmers' farm characteristics and participation in ISO activities on farm Income

Independent Variables	Coefficient (b)	t	Odd ratio
Constant	4.372	3.775	0.618
Primary occupation	2.134	2.418	1.352
Farm size	1.758*	3.947	3.137
Farming status	0.839*	2.562	2.070
Farming experience	0.259*	2.315	1.564
Participation index score	0.243*	2.816	2.031

Adjusted R² = 0.737, model X² = 45.341; Percentage Correction Prediction = 70.2; Critical t (5%) = 1.96

Conclusion of the Study

The study found that the farmers' participants of indigenous social organizations (ISO) were small-holder farmers (mean farm size = 3.01 ha.) who were experienced in their farming operations (mean = 11.4 years) and earned an average farm income of ₦280,750.00 which was much more than the average farm income earnings of the farmers non-participants (₦163,785.71). In addition, farmers' participation in ISO had a positive and significant effect on their productivity and farm income level. The difference was ₦116,964.29 and in favour of farmers participants of ISO. The study thus concludes that high farm experience and participation in ISO have helped to enhance or improved their productivity. It was as well found that major roles were actually carried out by indigenous social organizations and these roles include provision of loans, savings and credits to members, crop farming, provision of farm inputs and processing of farm products. The study as well concludes that participation in ISO could still be enhanced if not for the important constraints limiting the level of participation in their organizations. However, farm characteristics of the farmers participants like farming status ($b = 0.839$), farm size ($b = 1.758$), farm experience ($b = 0.259$) and participation index score (0.243) were found to positively influence farmers' farm income.

Recommendations of the Study

Based on findings of the study, it was recommended that;

- i. The need for the indigenous groups leaders to seek and incorporate members views in times of designing activities for the group is paramount. This will help curb the menace of not pursuing members' goals in their groups.
- ii. Leaders of the groups should ensure that benefits accruing to the groups are equitably distributed among members, rather than been hijacked by few privileged members.
- iii. The group leaders need to improve on their strategies of loan repayment. Such strategies should ensure that loans collected by members are repaid and at the right time.
- iv. The poor leadership style could be avoided through leadership accountability achieved via transparency in groups activities and honesty.
- v. The farmers' participants indicated that certain entry requirements were met before being allowed to be members. There is need to review some of these and expunge those considered to constitute hindrance.

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