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CONSTRAINTS TO RURAL WOMEN FARMERS' INVOLVEMENT IN LIVELIHOOD ACTIVITIES IN DELTA AND EDO STATES OF NIGERIA

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ABSTRACT

The study assessed constraints to rural women's livelihood activities in Delta and Edo states Nigeria. Multi-stage sampling technique was used to select 278 rural women farmers. Data were collected with the aid of structured questionnaire, analyzed using descriptive statistical tool and Friedman test. Results revealed that the average age of respondents was 40.8years. Most of the respondents are married (70.14%), educated (74.46%), experienced (9 years), and with an average household size of 5 persons. Both activities (Farming and Non-farming) (43.88%) were found to be the major livelihood activities of the rural women. Several constraints were found to be faced by rural women in the pursuance of their different enterprise activities in the area, regardless of whatever activities they are into, they appear to be faced with certain constraints which affected their enterprise activities. Freidman's test revealed a significant difference existed in the seriousness of the constraints faced by the respondents in their activities. It is recommended that Government should improve rural infrastructures like good road network, rural electrification, potable water, telecommunication service, and affordable healthcare system since they are important for enhancing economic activities. Government should initiate policy for reducing risk and uncertainties inherent in agricultural activities in order to encourage farmers to remain in the business of farming, creating a financial credit pool for women using the Welfare Departments of local government councils, and organizing women farmers into functional women cooperatives for easy access to loans and farm input.

Keywords: Rural women; Constraints; Livelihood; Activities

INTRODUCTION

Rural women farmers play vital roles in food production and food security and as such they are the backbone of the development of rural and national economies. Agriculture remains fundamentals for the development and economic growth in Africa, where women play a major role in food production. Women are involved in many activities just to see to their family wellbeing both at home and outside the home. They engaged in activities such as petty trading, hair making, mat and basket weaving and selling of firewood just to survive and maintain family welfare. Women are in livelihood activity which ranges from farm to

off-farm enterprises, earning vital income for themselves and their families. Despite the fact that women marvelously play great role in ensuring food availability and accessibility at households, they are being exposed to a number of significant problems in livelihood activities which they engaged in for survival and maintenance of good quality of life (Belonwu, 2016). These problems are often due to a number of setbacks encountered in course of their daily struggles to make earns means. They are poor and beginning to diversify their livelihoods into farm and non-farm activities as a relevant source of income. They are involved in various livelihood activities depending on their religion and socio-cultural beliefs to meet up their livelihood needs, combat poverty and as source of income. Njoku and Adesope (2007) reported that livelihood activities for rural women involves many activities. They further stressed that pressure on the income and assets of rural farm families have forced them to engage in non-agricultural activities as a way of improving livelihood. They are suffering from instability of income, limited access to education, land, credit facilities and poor distribution networks which results to low yields and high wastage rate during harvesting, processing and storage therefore reducing available food supply and rural women's income. The study therefore investigated the constraints to rural women farmers' livelihood activities in Edo and Delta, it describes the socio-economic characteristics of the rural women; and Identify income generating activities of the rural women in the area.

The study hypothesis stated that problems/constraints encountered by rural women farmers in the states do not have significant influence/difference in their involvement in farm and non-farm enterprise activities.

METHODOLOGY

Area of Study

The study states are in the south-south geopolitical zone of Nigeria. Delta state shares boundary with Edo, Ondo, Anambra, Rivers and Bayelsa State to the North, North-West, East, and South-East respectively (Delta State Agric Policy, 2007). It is generally low-lying and has a deep coastal belt inter-laced with rivulets and streams which form the Niger- Delta. While Edo State is an inland state in central southern Nigeria which is part of the nucleus of Niger Delta Region. They have tropical wet and dry or savanna climate and experience a fluctuating climate, ranging from the humid tropical in the south, to the sub-humid in the northeast. They are having population of 4,090, 391 (Delta) and 3,233,366 (Edo) (NPC, 2006). It is low lying except towards the north axis where the Northern and Esan plateaus range from 183 meters of the Kukuruku Hills and 672 meters of the Somorika Hills. The predominant livelihood activity in the rural areas of this zone is farming, though some have other income generating activities which they used to augment the income realized from farming. Most farmers in the zone cultivate with the major aim of feeding their family and selling off the remnant to generate income and mostly practice mixed farming in the area.

Sampling Procedure and Sample Size

Multi-stage sampling technique was used to select 278 (retrieved) rural women farmers out of 320 items distributed for the study, randomly selected from eight (8) extension blocks in two agricultural zones of the states.

The first stage was the purposive selection of two states from the six states that made up the South -South zone of the country, The choice of purposive sampling technique was to select states that are more agrarian, proximity and to avoid picking states that are contiguous to each other. Two states of Edo and Delta were purposively selected.

The second stage was the selection of one agricultural zone from each state. The criteria for the selection were based on the high agricultural and non-agricultural activities taking place in such zone. These include Edo Central zone and Delta North agricultural zone in Edo and Delta states respectively.

The third stage was the purposive selection of five blocks out of the nine blocks in Delta North agricultural zone and three of the five blocks in Edo Central Agricultural zone, which represented 50% of the blocks in the selected zones. Reasons for purposive sampling was for the zone's involvement in agricultural activities and research proximity Thus, a total of 8 blocks were selected. The names of the blocks are provided in Table 1.

Table 1. Selected zones, blocks, cells and sampled respondents for the study

States	Zones	Block	Cells	Sampled
Delta	Delta North	Ika south	Agbor	20
			Alihame	20
		Ika North East	Owa	20
			Umunede	20
		Ndokwa East	Osisa	20
			Ashaka	20
		Ndokwa West	Kwale	20
			Utagbuno	20
		Ukwani	Obiaruku	20
			Amai	20
Edo	Edo central			
		Esan West	Ogwa	20
			Iruekpen	20
		Esan north	Uromi	20
			Uzaa	20
		Igueben	Ewossa	20
			Ebelle	20
		8 Blocks	16 cells	320

The fourth stage was the random selection of two cells from the selected blocks in the selected States, to give a total of 16 cells.

In the fifth and final stage, stratified random sampling was used to sample women engaged in farm and non-farm activities, while snowball sampling technique was used to select 20 respondents in each category per cells. This technique was used because it enabled selection of participants based on their engagement in farm and non-farm activities in each cell. The total respondents sampled was 320. However, only 278 copies of the questionnaire were retrieved and used for data analysis.

Data Collection

Data used for the study were obtained from both primary and secondary sources. Primary data were sourced from the respondents with the use of structured questionnaire (for literate farmers) and interview scheduled (for nonliterate farmers) while the secondary information was sourced from related documented materials. The questionnaire was subjected to validation using the Cronbach' alpha and a reliability of 0.70 is required. A reliability of r ≥ 0.70 indicates 70% consistency in the scores that are produced by the instrument (Weinstein, 2014).

Analytical Techniques

Data collected were subjected to descriptive statistics (mean frequency counts and percentages) and Friedman test which was used to test the difference among the farm and non-farm enterprise constraints faced by the women. Statistical Package for Social Sciences (SPSS) version 23 was used for the analysis.

Friedman Test

The Friedman test is a non-parametric statistical test developed by the U.S. economist, Milton Friedman (1937). It is similar to parametric repeated measures ANOVA except that it is applied when the data are ranked data. It is also used to test the significance of or detect significant differences in treatments across multiple test attempts (Bortz *et al*., 2010). The Friedman test statistics is denoted by X^2 and defined by the formula:

$$\chi^2 = \left[\frac{12}{[N * k * (k+1)]}\right] * \Sigma R^2 - [3 * N * (k+1)]$$

Where:

X^2= chi square value
12 = constant
n = number of respondents
K = number of columns (variables being tested)
R = the score or rank sum
K-1 = degree of freedom
J = j^{th} number of ranks

Friedman test was used to analyse the hypothesis which states that, ‹there is no significant difference among the constraints facing rural women in their farm and non-farm enterprises activities in the states. The constraints assessed were the predictor (independent) variables while enterprise activities were the dependent variable.
Dependent Variable:

Yi = Enterprise activities (Dummy variable; Farm = 1, non-farm =0)

Operationalization of Variables

a) **Socio-economic characteristics or respondents:** The following characteristics of respondents were measured as follows:
   i. Age: Chronological age of the respondents was measured in years.
   ii. Marital status: Respondents were required to indicate if they are married, single, divorced or widowed
   iii. Household size: Number of persons physically living within the immediate family unit.
   iv. Educational status: This describes the level of respondents' level of formal education. i.e no formal education, primary education, secondary education and tertiary education
   v. Farm size: This was measured in hectares cultivated by the women whether as sole owners or in partnership with their spouses.
   vi. Farming experience: This was measured in years of active farming
   vii. Income: This was measured in terms of the income, in naira, that earned to the women from their farm and non-farm enterprises in last season.
b) **Farm Activities of rural women:** This was captured as the farming activities that women participate in which generate or earn income for them.
c) **Non-farm activities:** These are the activities that the women carryout in conjunction with or independent of their routine farm work, where applicable, and which provide opportunities for additional income
d) **Constraints to women's engagement in economic activities –** A 4 Point likert scale was used to determine the seriousness of the constraints. The rating scale includes (i) very serious (4), (ii) serious (3), (iii) little serious (2), and (iv) not serious (1). The mean score decision was 2.50 (4+3+2+1=10, 10/4=2.5). A weighted mean score of 2.50 was used to determine the seriousness of a constraint by assuming ≥ 2.50 as not serious.
e) **Enterprise status** (Farm & Non- farm activities)

All information about respondents and the results of analysis were presented using tables.

RESULTS AND DISCUSSION

Socioeconomic Characteristics of the Rural Women Household

The socioeconomic characteristics of the respondents as presented in Table 2, shows that majority (70.14%) of the women were married, young (43.53%) with an average age of 40.8 years. This tells one that most of the respondents fall in the middle age category and would be actively involved in farming activities aimed at improving their livelihood. The result shows that 29.86% of the respondents had secondary education, 25.54% had no formal education, and 23.02% had primary education while few (21.58%) had post-secondary education. This implies that they possessed different educational backgrounds, but majority (74.46%) of them had formal education, which could translate to a better understanding of economic diversification and problem solving, for improving their welfare. This finding is in

accordance with Milton *et al*. (2010) who reported that education is considered as the stake for developing favourable attitudes towards acceptance of improved technologies. The aggregate household size distribution of the women reveals that more than half (57.91%) had a size of 5-8 members with a mean average size of 5 indicating a relatively small family size. This is in agreement with Belonwu (2020) who reported a similar household size in Delta State, and it might affect the supply of family labour to assist in farm enterprise by compelling them to resort to other forms of labour such as hired labour.

Table 2: Socio-economic characteristics of rural women household (N=278)

Characteristics	Categories	%	mean
Age (years)	25 & below	21.79	
	26 – 35	23.08	
	36-45	42.31	
	46-55	12.82	40.8
Marital status	Single	-	
	Married	75.64	
	Divorced/separated	3.85	
	Widow (er)	20.51	
Education	No formal	29.49	
	Primary education	29.49	
	Secondary	34.62	
	Tertiary	6.40	
Household Size	1-4	24.36	
	5-8	67.98	5.0
	9-12	7.66	
	13-16	-	
Farming Experience	No response	38.46	
	1-5	6.41	
	5 -9	29.49	
	10 -14	15.38	9.0
	15 -19	10.26	
Enterprise status	Farm only	30.77	
	Non-farm only	33.33	
	Farm & Non- farm	35.90	

Results also show that many (38.46%) did not indicate any responds to the item on farming experience. This could be as a result of fear of not been given incentives in the next farming season if found not having enough experience in their enterprises. It was observed that majority of the women (35.90%) engaged in farm and non-farm activities, 30.58% engaged in farm enterprise only, while 25.54% engaged in non-farming economic activities only. This implies that, rural women engage in a combination of farm and non-farm enterprise activities in order to augment household income to meet up with their basic needs. However, the participation of some respondents in a single activity could be as a result of lack of capital. This agrees with Kabir *et al.* (2012) where they observed that most housewives in rural and urban areas combine both farm and nonfarm livelihood activities in order to meet their family needs. The result shows that some of the non-farm income generating activities were carried

out simultaneously during farming season while others were carried out only during off-season periods. The findings support the view of Oladeji (2007) that even though farming was the predominant activity in most rural areas, farmers usually engaged in non-farm activities to improve their household livelihood.

Farm Income Generating Activities of Respondents

Table 3 shows the farm income generating activities of the women and their associated income in the last season. The pooled result shows that marketing (53.6%) was the major farm activities of the women. In terms of income, the findings revealed that tree crop production earned the highest mean income (₦ 124,981.00). This implies that major farm activity of most of the women in the study area was marketing like activities. Due to the agrarian nature of the norms and values of the locality, respondents had to engage themselves in mostly agricultural marketing which can be combined with other activities. This agrees with Olawoye (2002) report stating that in developing countries like Nigeria (inclusive) livelihood can only be met by engaging in diverse livelihood activities.

Non- Farm Income Generating Activities of Respondents

Results presented in Table 4 revealed that the non-farm activities engaged by the women and the income they derived in the last one year. The pooled result shows that trading was the major (42.1%) activity engaged by the women. The study reveals that hair dressing earned the highest income (₦ 332,857.14) for the women in last season. These findings support the views of Reardon *et al.* (2002) that non-farm activities seem to offer a pathway out of poverty and improving household quality of life if non-farm opportunities could be seized by the rural households. This showed that the respondents were involved in activities which can generate income for economic empowerment.

Table 3: Farm income activities of respondents

Enterprise	Delta			Edo			Pooled		
	Freq	%	Mean(₦)	Freq	%	Mean(₦)	Freq	%	Mean(₦)
Marketing	116	58.0	70,500.00	33	42.3	256,667.00	149.0	53.6	11,732.00
Arable crop	86	43.0	93,037.00	37	47.4	159,706.00	123.0	44.2	112,748.00
Tree crop production	55	27.5	84,779.00	26	33.3	239,630.00	81.0	29.1	124,981.00
Processing	80	40.0	50,417.00	1	1.3	120,000.00	81.0	29.1	51,235.00
Paid farm labour	60	30	25,806.00	4	5.1	81,250.00	81.0	3.0	29,167.00
Livestock keeping	55	27.5	47,745.00	1	1.3	42,000.00	56.0	20.1	47,643.00
Total	150		204,687.00	45		463,489.00	195		264,410.00

Table 4: Non- farm enterprise activities and income of respondents

Enterprise	Delta			Edo			Pooled		
	Freq	%	Mean(₦)	Freq	%	Mean(₦)	Freq	%	Mean(₦)
Trading	83.0	41.5	121,295.18	34.0	43.6	17,779.41	117.0	42.1	138,290.60
Hair dressing	21.0	10.5	299,047.62	14.0	18.0	383,571.43	35.0	12.6	332,857.14
Civil Service	23.0	11.5	213,809.52	4.0	5.1	55,000.00	27.0	9.7	268,400.00
Interior décor	16.0	8.0	154,444.44	10.0	12.8	260,000.00	26.0	9.4	192,142.86
Confectionaries	13.0	6.5	44,545.45	0.0	0.0	000.00	13.0	4.7	44,545.45
Tailoring	6.0	3.0	37,500.00	0.0	0.0	000.00	6.0	2.2	37,500.00
House help	6.0	3.0	12,666.67	0.0	0.0	000.00	6.0	2.2	12,666.67
Private orgn.	6.0	3.0	120,000.00	0.0	0.0	000.00	6.0	2.2	120,000.00
Labourers	00.0	0.0	80,000.00	0.0	0.0	000.00	0.0	0.0	80,000.00
Total	140	0.0	182,346.43	58		281,077.59		198	211,267.68

Enterprise Constraints

Result in Table 5 presents the constraints the rural women farmers faced in the pursuance of their farm enterprises. The most serious constraints were pests and diseases (mean= 2.64), high cost of transportation (mean = 2.63), bad road network (mean = 2.61), lack / inadequate improved planting materials (mean = 2.58) and inadequate capital (mean = 2.50). Pests and diseases and others considered as the most serious constraints have significant effect on the growth, yield and quality of the farm produce which invariably can affect income. Constraints like lack of credit facilities, low pricing of farm produce, lack of inputs, small farm size, inadequate market or poor sales, lack of information and theft were considered not serious since their mean scores were less than 2.50. A comparison of the two states reveals that pest/diseases (mean =2, 85), bad road network (mean= 2.84), and high transport cost (mean =2.79) were considered the most serious constraints in Delta state, while inadequate capital (mean=2.31) and inadequate access to improved planting materials (mean=2.28) has the highest mean rating in Edo state. Inadequate Capital as one of the identified serious factors in the pooled result constitute a constraints. This may be as a result of the fact that most women farmers do not have access to formal credit Lawal (2000). Since the lack of credit was not seen as a serious challenge, it therefore suggests that the woman had limited access,since inadequate capital was considered serious. Pest and diseases have been identified as a major impediment to agricultural productivity as they generally reduce the productivity and crop quality, thereby reducing the income of farmers. Most of the farming communities are not easily accessible due to the bad nature of roads leading to them. Infact, it was noted that most vehicles plying these rural roads suffer from neglect and roads to these farming communities are often limited or not available at all making the cost of transportation very high. Lack of /Inadequate improved planting materials also affect the farmers in a way that the women farmers do find it difficult to have access to these improved planting materials because this sometimes are being diverted or sold without the knowlegde of the farmers.

Table 5: Farm enterprise constraints

Constraints	Delta		Edo		Pooled		Rank
	Mean*	SD	Mean*	SD	Mean*	SD	
Pest/diseases	2.85	1.30	2.13	1.21	2.64	1.31	1st
High transport cost	2.79	1.27	2.21	1.26	2.63	1.29	2nd
Bad road	2.84	1.34	2.03	1.25	2.61	1.36	3rd
Lack of improved Materials	2.70	1.23	2.28	1.22	2.58	1.24	4th
Inadequate capital	2.58	1.29	2.31	1.36	2.50	1.31	5th
Lack of credit Facilities	2.46	1.12	2.14	1.26	2.37	1.17	6th
Low pricing	2.45	1.06	2.14	1.20	2.36	1.11	7th
Lack of inputs	2.40	1.19	2.23	1.29	2.35	1.22	8th
Small farm size	2.38	1.06	2.22	1.21	2.33	1.11	9th
Lack of market to sell	2.30	0.97	2.05	1.09	2.23	1.01	10th
Lack of information	2.24	1.08	1.94	1.04	2.15	1.08	11th
Theft	2.24	1.25	1.72	.88	2.09	1.18	12th

*Serious (mean>2.50)

Non- Farm Enterprise Constraints

Table 6 shows the constraints that the respondents experienced in their non-farm engagement. The major constraints included high competition from other entrepreneurs (mean= 3.51), job insecurity (mean= 3.19), lack of information on how to start a business (mean=2.87), inadequate capital (mean=3.11), government high tax (mean= 2.54), low salary/remuneration (mean= 3.16), low pricing (mean=3.23). Theft (mean=2.26) was not considered a serious constraint. A comparison of the aggregate mean score for Delta (2.99) and Edo (2.98) states indicate that non-farm entrepreneurs share similar levels of constraint in their enterprise. The most critical was competition from other businesses. High competition from other entrepreneurs as the leading constraint, is not surprising, several persons may share similar business activity, thereby generating stiff competition. This finding agrees with the assertions of Onemolease (2011). Job insecurity is a serious concern especially for those working as employees. Most employers in the informal private sector easily terminate the services of their employee without any form of compensation. Fear losing one's job is another constraint that the women are facing, looking at the situation of the economy where major source of revenue is declining this causes a lot of company folding up, some unable to pay their workers while some retrenching. Majority of the women were not business oriented and had little or no knowledge on some of the enterprise activities; they find it difficult to start up business which will improve family livelihood. Women also find it difficult to get hold of capital to start up business since they were unable to get link to financial institutions. High taxation from the government also poses big constraint to these women as well as low salary and low pricing of agricultural produce from buyers.

Table 6: Non- Farm enterprise constraints

Constraints	Delta		Edo		Pooled		Rank
	Mean*	SD	Mean*	SD	Mean*	SD	
High competition	3.53	0.65	3.46	0.50	3.51	0.62	1st
Job insecurity	3.18	0.88	3.21	0.41	3.19	0.78	3rd
Lack of information on start business	2.80	0.97	3.06	0.73	2.87	0.91	6th
Inadequate capital	3.05	0.81	3.27	0.60	3.11	0.76	5th
High taxation	2.40	0.98	2.90	0.66	2.54	0.93	7th
Low salary / Remunerations	3.17	0.83	3.15	0.80	3.16	0.82	4th
Theft	2.47	1.21	1.71	0.85	2.26	1.17	8th
Low pricing of products	3.28	0.79	3.10	0.69	3.23	0.77	2nd
Average	2.99		2.98		2.98		

*Serious (mean≥ 2.50)

Test of Difference in Farm Enterprise Constraints Facing Women

The result from Friedman test (x^2 243.80) indicated a significant ($p<0.05$) difference in the seriousness of the constraints faced by the women in their farm activities. The post – hoc test revealed that constraints like high cost of transportation, pest and diseases, bad road, lack of improved planting materials, and inadequate capital were not significantly different from each other, except for inadequate capital, which was significantly more serious relative to constraints as lack of credit facilities (mean= 6.29), small farm size (mean= 6.22) and low

pricing (mean = 6.21). The least constraint was theft which was not significantly different from constraints as lack of inputs, inadequate markets to sell and lack of information on modern farm technology.

Table 7: Test of difference among farm enterprise constraints facing women

Constraints	Mean rank*	Rank
Theft	5.61^{d}	12^{th}
Lack of information	5.62^{cd}	11^{th}
Lack/inadequate markets to sell	5.75^{cd}	10^{th}
Lack of inputs	6.15^{bcd}	9^{th}
Low pricing of farm produce	6.21^{bcd}	8^{th}
Small farm size	6.22^{bc}	7^{th}
Lack of credit facilities	6.29^{bc}	6^{th}
Lack or inadequate capital	6.82^{ab}	5^{th}
Lack of improved planting materials	7.26^{a}	4^{th}
Bad roads	7.33^{a}	3^{rd}
Pest and diseases	7.36^{a}	2^{nd}
High transport cost	7.37^{a}	1^{st}

$_{x}2$ =243.80; df=11, p<0.001; *Mean with different superscripts are significantly different

Test of Difference among Non-farm Enterprise Constraints Facing Women

The result ($_{x}^{2}$= 243.80, p<0.05) indicated that there was a significant difference among the constraint faced by the women in their non-farm enterprise in the area. The post –hoc result shows that constraints as high competition from others (mean = 5.89) was the most significant constraints and there was no significant difference in the seriousness of the following constraints: low pricing, job insecurity, low salary and inadequate capital, however they were more significantly serious to lack of information on how to start a business and government high tax. The least significant constraint faced was theft.

Table 8: Test of difference among non-farm enterprise constraints facing women

Constraints	Mean Rank*	Rank
Theft	2.88^{e}	8^{th}
Government high tax	3.50^{d}	7^{th}
Lack of information on how to start a business	4.20^{cd}	6^{th}
Lack/inadequate capital	4.82^{bc}	5^{th}
Low salary/ payment	4.84^{b}	4^{th}
Job insecurity	4.90^{b}	3^{rd}
Low pricing	4.97^{b}	2^{nd}
High competition from others	5.89^{a}	1^{st}

χ^2 = 243.80; df = 11, P<0.00; *Mean with different superscripts are significantly different

CONCLUSION

The study concludes that the women were young with an average age of 40.8years, married, educated, experienced, and an average household size of 5 persons. Both activities (Farming and Non-farming) were found to be the major livelihood activities of the rural

women. A number of constraints were found to face rural women in the pursuance of their different enterprise activities in the area. The most serious constraints affecting their farm activities were pests and diseases, high cost of transportation, bad road network, lack / inadequate improved planting materials and inadequate capital while constraints like high competition from other entrepreneurs, job insecurity, lack of information on how to start a business, inadequate capital, government high tax, low salary/remuneration, low pricing were considered as the most serious constraints in their non-farm activities. Freidman's test revealed a significant difference existed in the seriousness of the constraints faced by the respondents in their enterprise activities. Generally, the results shows that rural women actually engaged in both economic and non-economic enterprise but regardless of whatever activities they are into, they appear to be faced with certain constraints which affected their enterprise activities.

It is recommended that Government should improve rural infrastructures like good roads network, rural electrification, potable water, telecommunication service, and affordable healthcare system since they are important for enhancing economic activities; Government should initiate policy for reducing risk and uncertainties inherent in agricultural activities in order to encourage farmers to remain in the business of farming; Creating a financial credit pool for women using the Welfare Departments of local government councils, and organizing women farmers into functional women cooperatives for easy access to loans and farm input.

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