

## **RURAL WOMEN ENTREPRENEURSHIP IN AGRO-FOOD PROCESSING IN ENUGU STATE, NIGERIA**

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### **ABSTRACT**

The study examined rural women entrepreneurship in agro-food processing in Enugu State. Interview schedule was used to collect data from 160 respondents. The result revealed that majority (88.1%) of women agro-food processors in Enugu State had low level of involvement in agro-food processing activities. About 57% of women agro-food processors were at low level of participation in establishment of agro-food processing enterprise in the State. Majority (86%) of the respondents indicated that they had no training in entrepreneurship. Constraints that militated against rural women agro-food processing enterprise to a great extent in Enugu State were lack of capital (M=2.90), inability to apply modern processing technique (M=2.72), lack of governmental support (M=2.63), lack of processing equipment (M=2.51), and low level of food processing concepts (M=2.49). The study concluded that rural women were involved in post harvest agro-food processing activities but their level of involvement/participation in establishment of micro agro-food processing enterprises was low. The start up capital was low which could affect the growth and sustainability of the enterprise. Majority of the women agro-food processors had no entrepreneurial training.

**KEYWORDS:** Rural Women, Entrepreneurship, Food Processing, Training

### **INTRODUCTION**

Growth and development of rural economy are essential pre-conditions to the development of a nation as a whole. The gap between rural-urban disparities needs to be lessened through increase in the standard of living of the rural people. The millennium development goal of eradicating extreme poverty and hunger has the targets which are to halve between 1990 and 2015, the proportion of the people whose income is less than \$1 a day. Onyene and Bakare (2011) reported that three quarter of the 1.1 billion people living on less than \$1 a day live in rural areas and are found mostly in developing nations. Tackling the problem of poverty among the majority of people is an issue that has posed a great challenge to government in developing countries including Nigeria. As a result, the government of Nigeria under president Goodluck Jonathan announced at the inception of his office an agricultural transformation agenda vision of achieving hunger free Nigeria through agricultural sector that drives income growth, accelerates achievement of food and nutrition security, generate employment and transform Nigeria into a leading player in food markets to grow wealth for millions of farmers. According to Oyedoyin (2011) the vision statement looks like the usual statements from the past such as Operation Feed the Nation (OFN), Green revolution, Better life for rural women programme, among others. Most of these efforts have yielded temporary result and they disappeared and were not sustainable because they are not far reaching enough. For the depth of the vision to be met, food processing must be embraced to ensure that agricultural efforts/labours are not in vain. Agriculture is the life blood of the economy in most developing countries and food processing accelerates agricultural production and promotes sustainable agricultural intensification (Ihekoronye and Uzomah, 2011). Food processing offers opportunities for enterprising people to generate income and employment using locally available resources.

Accelerating hunger and poverty reductions require direct measures to help people who are poor and ill-fed to escape poverty trap (FAO, 2006) and to be economically transformed. Entrepreneurship in food processing in rural sector provides an answer to the problems. According to Okpukpara (2011) entrepreneurship is the act of organizing, managing and assuming the risks of a business. An entrepreneur is not just a person who has money to start-up a business enterprise. He is the person who has the initiative, power of innovation and invention that will add vigour to a business and change the pattern of production for better. It is a dynamic process of identifying business opportunities, developing and sustaining them for future growth and development. Rural entrepreneurs are those who carry out entrepreneurial activities by establishing industrial and business units in the rural sector of the economy. In simple words, rural entrepreneurship implies entrepreneurship emerging in rural areas. Entrepreneurship in rural areas looms large to solve the problems of poverty, unemployment and rural transformation in developing countries. Anon (2011) noted that rural industrialization is viewed as an effective means of accelerating the process of rural development. Reliance on government alone to address developmental concerns that can impact on rural lives and poverty in general may not achieve the desired target of rural economic transformation. The new approach is the development from the below (grassroot) through community driven projects based on local entrepreneurial initiatives, poor people needed to be encouraged in other to achieve real economic development and transformation for all and genuine empowerment. Nigerian Bureau of Statistics (NBS) (2008) reported that agriculture contributes 42% of Nigeria's GDP in 2008. However despite this, standard of living and food security especially among the rural populace remain a major concern due to subsistence nature of the country's agriculture. Adebayo *et al.*(2009) affirmed that many of the strategies used to improve agricultural growth in the past have failed because the programmes were not sufficiently based on in-depth studies and realistic pilot surveys.

The problems of low standard of living, hunger and poverty could also stem from low level of food management capacity after production, lack of entrepreneurial initiatives as many farmers labour under uncertainty about how to process, preserve and package the products in order to catch up with season related opportunities among others (Onyene and Bakare, 2011). More attention need to be paid to what happens after food is harvested in the face of improved modes of agricultural practices which have translated into better yields. A post harvest food loss is very important because food is often produced in large quantity that cannot be possibly consumed at a time and requires to be processed in order to store for a long period. Attention should also be given to value addition before home consumption and export and this could result to extension of shelf life, make food available all year round, more variety available through food processing and preservation and improve the income of the rural entrepreneurs by generally improving earning potential capacity.

Nigerian women form an indispensable part of human resources for development because without their contribution, the economy will be difficult to advance to a better level (Onah, 1998). According to UNDP, women play a dominant role in agriculture in Nigeria and are believed to make up to 60–80% of the agricultural workforce. FAO reported that about 70% of women live in rural areas and contribute about 44% of family feeding and income through agriculture. Okojie (1991) noted that women's greatest contribution to Nigerian economy is in agricultural sector in the rural areas where majority of Nigerians live. Unfortunately, women's input is considered to make very little contribution to the GDP because it is viewed as being weakly productive, and production are mostly at subsistence level. This may have resulted to their efforts remaining largely unrecognised (FAO, 2003; Onyene and Bakare, 2011). Charmas (2000) reported that women's activities in manufacturing and food processing remain underestimated because most of their activities are undertaken as secondary activities generally hidden behind subsistence agriculture. Post harvest production, trading (buying and selling) of consumer crops is often the final stage of diversified female activities which begins with growing or gathering natural products and processing them. However, only the first and the last stage are captured thereby the value

addition is underestimated. Women's contribution in creating value-added products through enterprise establishment need to be estimated in order to design more appropriate measures to help their empowerment. Food processing aids in extending the shelf life and storage time, to change the colour, flavour and texture to make food more attractive and palatable. Food processing brings wide range of benefits to enterprising people in developing countries which include: the potential for adding value to basic agricultural produce thereby promoting access to wider markets, improving small-scale producers and entrepreneurs income-earning ability, allowing improved use and control of local resources and helping to create employment for poor people, particularly in the rural areas (Ihekoronye and Uzomah, 2011). Moreover, it is assumed that if the world produces more or enough food than is consumed, that women's input can aid in effecting reduction or eradication of post harvest food losses through floating micro food processing industries in the rural setting thereby leading to rural transformation.

Based on the foregoing the following research questions become pertinent: what are the socioeconomic characteristics of rural women agro food processors?; what are the extent of involvement and participation of rural women in post agro food processing and enterprise establishment?; what are the women's interest in entrepreneurial training and method preferences for the training?; and what are the constraints to enterprise creation in agro food processing?. Answers to these questions form the basis of this research. Therefore the general objective of this study is to assess rural women entrepreneurship in agro-food processing in Enugu State. Specifically the study sought to: ascertain the socio-economic characteristics of rural women agro-food processors; determine the extent of involvement of rural women in post harvest food processing; examine the extent of participation of rural women in agro food processing enterprise establishment; ascertain rural women's interest in entrepreneurial training and method preferences for the training; and highlight the constraints to enterprise creation in agro- food processing

Furthermore, the following null hypotheses were formulated for the study:

- The socio-economic characteristics of the respondents significantly influence their level of interest in entrepreneurial training on agro-food processing.
- There is no significant difference between perception of trained and untrained respondents on the extent constraints to agro-food processing enterprise.
- Educational qualifications do not significantly affect the perception of respondents on the extent of constraints to agro-food processing enterprise.

## METHODOLOGY

The study was carried out in Enugu State, Nigeria. Enugu State is in the southeast geopolitical zone of Nigeria and one of the 36 states that make up the Federal Republic of Nigeria. Enugu State has three senatorial zones with 17 Local government Areas (LGAs). It is located on latitude  $6^{\circ}30'0''\text{ON}$  and longitude  $7^{\circ}30'1''\text{OE}$  (Federal Republic of Nigeria Official Gazette, 2007). The state shares borders with Abia and Imo State to the South, Ebonyi State to East, Benue State to the North East, Kogi State to the Northwest and Anambra State to the West. According to Dimelu (2006), Enugu State (southeast) lies largely within the rainforest belt of Nigeria which is characterized by high temperatures and humidity with substantial amount of rainfall during the major periods of the year. The mean temperature is between  $20 - 30^{\circ}\text{C}$  with rainfall between 0.0098 and 2.18cu (Federal Republic of Nigeria Official Gazette, 2007) It has a total land area of 2,764.9 square meter ( $7,1611\text{cm}^2$ ) Federal Republic of Nigeria Official Gazette 2007) and according to the 2006 census, the state has a population of 3,275, 298 people. Enugu State has well drained soil and good climate, sitting at about 223 meter (732

feet) above the sea level. Economically, the state is predominantly rural and agrarian. The major crops grown in the state are yam, cassava, cocoyam, rice, maize as well as variety of fruits and legumes. The crops harvested are processed using various methods like smoking, sun-drying, fermentation, milling (oil extraction), shelling etc. Small proportion of the population is engaged in manufacturing activities and these people are mostly located in Enugu, Oji River and Nsukka (Federal Republic of Nigeria Official Gazette, 2007).

The population of the study constituted all rural women engaged in agro-food processing in Enugu State. Multi-stage sampling technique was employed in selection of respondents for the study. At the first stage, out of the three senatorial zones in Enugu State, two were randomly selected (Enugu North = Zone 1 and Enugu West= Zone 2). At the second stage, two Local Government Areas (LGAs) were purposively selected from each selected zone (Enugu North zone- Nsukka and Igbo-eze North LGAs; Enugu West zone- Udi and Oji River LGAs) on the basis of their food processing activities. At the third stage, two town communities were also purposively selected from each selected local government area because they are noted for their food processing activities. In Nsukka LGA – Ibagwa ani and Okpuje while in Igbo-eze North LGA- Ibagwa Aka and Ishiagu town communities were selected respectively. On the other hand, in Udi LGA- Nachi and Abia and in Oji River LGA- Achi and Inyi town communities were selected respectively. At the fourth stage, a list of 50 rural women engaged in agro-food processing in each town community was compiled based on their villages/clans. Finally, 20 rural women food processors were randomly selected from the list compiled in each town community to give a total sample size of 160 respondents for the study. Interview schedule based on the objectives of the study was developed and used in collecting data from the respondents. Trained research assistants/extension agents were employed to assist in collection of data. The researchers personally visited some markets and women meetings to conduct focus group discussion (FGD) and four to five (4-5) knowledgeable women were identified and interviewed as key informants. Both FGD and key informants helped to clarify certain ambiguous issues of the study.

Socio-economic characteristics of the respondents were examine such as age, sex, marital status among others. The involvement of rural women in post harvest food processing were ascertained by asking respondents to identify the post harvest processing activities they were involved e.g peeling, milling, drying, frying, shelling, fermentation, oil extraction, grinding, smoking, powdered chilli, pasteurization, crushing, graters and presses (cassava), etc Their extent of involvement were determined by the number of processing activities engaged in. Those engaged in 1-5 processing activities= low involvement, 6-10= medium involvement while 11 and above= high involvement.

Also the participation of rural women in agro-food processing enterprise establishment was realized by asking the respondents to tick agro-food processing enterprise(s) they established/or helped to established from a list of agro-food processing enterprises provided. Similarly, to ascertain the level of participation, the respondents that participated in establishing 1-3 enterprises= low participation, 4-6= medium participation, 7 and above= high participation while those that did not participate at all were regarded as non participation. Rural women's interest in entrepreneurial training and method preferences for the training was realized by measuring the interest of the respondents on three-point Likert-type scale of: high (3), medium (2) and low (1) interest in entrepreneurial training. These values were summed up to 6 and divided by 3 to get a mean score of 2. Respondents with means scores equal to or greater than 2 were regarded as having high interest in entrepreneurial training while those with mean scores less than 2 were regarded as those with low interest in the training. Also, method preferences for the training were determined by requesting the respondents to tick their preferred method of training from the list of training method provided.

The constraints to enterprise creation in agro-food processing were measured by asking the respondent to identify the constraints as well as to rate the extent of these constraints on a three-point Likert-type scale of : to a great extent (3), to

some extent (2), to a little extent (1). These values were summed up to 6 and divided by 3 to get a mean score of 2. Variables with means scores equal to or greater than 2 were regarded as constraining agro-food processing entrepreneurial venture to a great extent while those with mean scores less than 2 were regarded as those constraining agro-food processing entrepreneurial venture to a little extent.

The data were analysed using percentage, mean and standard deviation. Objectives I, 2, 3 and part of objective 5 were analysed using percentage while objective 4 and part of objective 5 were analysed using mean score. Hypotheses 1, 2 and 3 were tested using Multiple Regression, T-Test and ANNOVA respectively. The statistical package used was SPSS 15.0

## RESULTS AND DISCUSSIONS

### Socio-Economic Characteristics of Respondents

#### Age

Data in Table 1 indicate that greater proportion (40.6%) of the respondents was in the age brackets of 39-48. About 27% and 19% of the respondents were in the age brackets of 49-58 and 29-38 respectively. The respondents within the age range of 19-29 were 6.2% while those within 59 years and above were also 6.2%. The average age of the respondents was about 44 years which means that they are still in their active and productive age. The implication is that the group of women within this age are capable of learning modern processing technologies since age is said to have influence on people's attitude, skill and aspiration.

#### Marital Status

About 72% of the respondents were married, 12.5% widowed, 7.5% single while 1.2% were divorced/separated. The implication is that rural women agro-food processors in Enugu State are responsible enough to undertake any agro-food processing projects. Ezedinma (2001) confirms that married people have the responsibility for the provision, processing and marketing of food items for the household as well as sale of fresh fruits and processed agricultural products to get income.

#### Educational Qualification

Entries in Table 1 reveal that greater proportion (36.2%) of the respondents had National Certificate in Education/ Ordinary National Diploma (NCE/OND), 28.1% had Senior Secondary Certificate Examination (SSCE) while only 11.9% had First School Leaving (FSLC). About 14% of the respondents had Masters Degree while 9.4% made their PhDs.

This is an impressive academic exploits on the part of women when compared with the past records. The implication is that agro-food processing which is mostly undertaken by women has the capacity of uplifting the status of women if they are empowered to embark on the project as an entrepreneurial venture. Research on the role that education plays in development emphasizes its capacity to transform the long term position of women in society (Ganguli *et al.*, 2011).

#### Household Size

Fifty-five percent of the respondents had a household size of between 5-8 persons while 13 and above member household was 23.8%. The household size of between 9-12 persons was 12.5% while 1-4 member household was 8.8%. The average household size was nine persons. This is a very large family size with serious economic implications hence the compelling need to empower the family through agro-food processing entrepreneurial venture. However, this is not surprising because other researchers (Emodi, 2009, Enwelu, 2011, Ajani, 2011 and Agada, 2011) in their respective

research findings observed that households in Nigeria are characterized by large family size with high dependency ratio resulting from unemployment.

### Occupation

About 51% and 50% of women were engaged in farming and trading/business respectively as their occupations, 16.3% were engaged in wage employment/teaching and only 2.5% were engaged in artisanship/craft. Also, 5% of women engaged in agro-food processing in Enugu State were students. It is observed from this finding that increasing number of women are currently being engaged in trading/ business which is likely to ease the mobilization of women into agro-food processing enterprise.

### Membership of Social Organizations

In Table 1, about 38 % of the respondents belonged to three social organizations while 25% did not belong to any social organization. About 18.8% of the respondents belonged to two social organizations, 12.5 % belonged to one organization while 5.6% belonged to 4 and above. On the average, the respondents belonged to about two social organizations. This implies that women agro-food processors are socially active and this can positively bring to bear on the agro-food processing enterprise in terms of linkage and marketing of processed products.

**Table 1: Percentage Distribution of Respondents by Socio-Economic Characteristics**

Socio-Economic Characteristics	Zone 1		Zone 2		Overall	
	(%)	( $\bar{x}$ )	(%)	( $\bar{x}$ )	(%)	( $\bar{x}$ )
<b>Gender</b>						
Male	2.6		1.3		3.8	
Female	47.4		48.7		93.8	
<b>Age (Years)</b>						
19-28	3.1		3.1		6.2	
29-38	12.6		6.9		19.4	
39-48	14.5	44.7	26.4	43.0	40.6	43.86
49-58	13.8		13.2		26.9	
59 years and above	6.3		0.0		6.2	
<b>Marital Status</b>						
Married	34.0		44.7		78.1	
Single	5.0		2.5		7.5	
Widowed	9.4		3.1		12.5	
Divorced/Separated	1.3		0.0		1.2	
<b>Educational Level</b>						
FSLC	8.8		3.1		11.9	
SSCE	15.6		12.5		28.1	
NCE/OND	7.5		28.7		36.2	
HND/Degree	8.8		5.6		14.4	
MSc./Ph.D.	9.4		0.0		9.4	8.6
<b>Religion</b>						
Christianity	41.4		49.0		88.8	
Islam	1.9		0.0		1.9	
Traditional	5.1		0.0		5.0	
None	2.5		0.0		2.5	
<b>Household Size (Person)</b>						
1-4	8.1		0.6		8.8	
5-8	21.2		33.8		55.0	
9-12	2.5		10.0		12.5	
13 and above	18.1		5.6		23.8	
<b>Occupation</b>						
Farming	25.0		26.2		51.2	

**Table 1: Contd.,**

Trading/business	7.5		42.5		50.0	1.9
Artisan/craft	2.5		50.0		2.5	
Wage employment	7.5		0.0		7.5	
Teaching	6.2		2.5		8.8	
Student	0.6		4.4		5.0	
Number of Social Organization						
0	23.8		1.2		25.0	
1	11.2		1.2		12.5	
2	8.1		10.6		18.8	
3	4.4	1.0	33.8	2.8	38.1	
4 and above	2.5		3.1		5.6	

Zone 1: Enugu North Senatorial Zone, Zone 2: Enugu West Senatorial Zone

### Type of Cooperative Society Belonged

Table 2 reveals various types of cooperative societies belonged by the respondents. Majority (57.1%) of the respondents belonged to thrift/savings cooperative society while 33.7% did not belong to any cooperative society. Farmers' cooperative had 6.1% of the respondents, multipurpose - 1.9%, crafts' cooperative – 0.6% and 0.6% of the respondents belonged to other cooperative societies.

The implication of this finding is that by belonging to cooperative society especially thrifts/savings, women agro-food processors have opened up avenue for effective mobilization for capital and human resources needed for effective running of agro-food processing enterprise. This view was collaborated by Maghsoudi (2006) when she stated that cooperatives seek to enable individuals and groups to tackle their own needs on the basis of participation, collective action empowerment, sharing, enabling and equality. Also, Agbo (2012) affirms that cooperatives offer social and cultural platforms through which members assume mutual ownership of risks arising from business and daily living. In this way members provide themselves social and business insurance services that come handy in times of need.

**Table 2: Percentage Distribution of Respondents Based on Type of Cooperative Society Belonged**

Type of Cooperative Society	Percentage		
	Zone 1	Zone 2	Overall
Thrifts/savings	24.2	90.0	57.1
Farmers' cooperative	8.4	3.8	6.1
Multipurpose	2.6	1.2	1.9
Crafts' cooperative	1.2	0	0.6
None	63.6	3.8	33.7
Others	0	1.2	0.6

Zone 1: Enugu North Senatorial Zone, Zone 2: Enugu West Senatorial Zone

### Estimated Monthly Income

Table 3 indicates that greater proportion (35.1%) of the respondents earned an estimated monthly income of between ₦12,000.00-₦17,999.00 while only 9.9% earned between ₦30,000.00 and above. The rest of the respondents (23.2%, 21.4%, 7.7% and 2.75%) earned between ₦6,000.00-₦11,999.00, ₦0.00-₦5,999.00, ₦18,000.00-₦23,999.00 and ₦24,000.00-₦29,999.00 respectively.

When you compare the estimated monthly income of the greater proportion of the respondents (₦12,000.00-₦17,999) with the national minimum wage of ₦18,000.00 as well as with the average household size of 11 persons one can practically perceive the gravity and enormity of the plight of average agro-food processors in Nigeria especially among women processors. Strategic Objective 55 of the Beijing Platform of Action calls for an increase in the productive capacity of women by providing access to capital, resources, credit, land, technology, information, technical assistance and training

so as to raise their income and improve nutrition, education, health care and status within the household (British Council Nigeria, 2012). Angel-Urdinola and Wodon (2008) highlighted the root cause of financial embarrassments of women. She stated that much of the work women do is unpaid. Data from the Core Welfare Indicators Questionnaire (CWIQ) show that, whereas one in every two men spends time doing pursuits that earn them an income, one in every two women spends time doing unpaid work.

**Table 3: Percentage Distribution of Respondents Based on Type of Cooperative Society Belonged**

Monthly Income (₦)	Percentage (%)		
	Zone 1	Zone 2	Overall
0.00-5,999.00	40.2	2.6	21.4
6,000.00-11,999.00	23.6	22.8	23.2
12,000.00-17,999.00	7.8	62.4	35.1
18,000.00-23,999.00	3.8	11.6	7.7
24,000.00-29,999.00	5.2	0.3	2.75
30,000.00 and above	19.4	0.3	9.9

Zone 1: Enugu North Senatorial Zone, Zone 2: Enugu West Senatorial Zone

#### Level of Involvement in Post Harvest Food Processing

Data in Table 4 highlight level of involvement of women agro-food processors in post harvest agro-food processing activities. It was found out that women agro-food processors in the overall (88.2%) had low level of involvement in agro-food processing activities. The low level of involvement was more pronounced in Zone 2 (Enugu West senatorial zone-98.8%) than in Zone 1 (Enugu North-77.6%). In the case of medium level, 22.4% came from Zone 1 while Zone 2 had 1.2% level of involvement.

The women processors in Zone 1 at the medium level were more involved than their Zone 2 counterpart. This is the actual level of involvement of rural women in post harvest food processing and the situation is actually worrisome. Adesope *et al.* (2010) stressed that inability of a farmer to process and store his/her produce efficiently so that a good quantity produce can be sold at a good price when it is scarce (off season ) is one of the major factors responsible for economic non viability of traditional farming.

**Table 4: Percentage Distribution of Respondents Based on Level of Involvement of Rural Women in Post Harvest Food Processing**

Level of Involvement (₦)	Percentage (%)		
	Zone 1	Zone 2	Overall
Low level	77.6	98.8	88.2
Medium level	22.4	1.2	11.8

Zone 1: Enugu North Senatorial Zone, Zone 2: Enugu West Senatorial Zone

#### Level of Participation in Post Harvest Agro- Food Processing

Entries in Table 5 reveal extent of participation of women agro-food processors in agro-food processing enterprise establishment. About 57% of women agro-food processors were at low level of participation in establishment of agro-food processing enterprise in Enugu State. Also, about 21% said there were at medium level of participation in enterprise establishment while 23.1% were at the level of non participation.

There was higher non participation in enterprise establishment in Zone 1- Enugu North (45%) than in Zone 2- Enugu West (1.2%). Again, there was more medium level participation in Enugu North (38.8%) than in Enugu West (3.8%). This finding is an indication of low participation of rural women in agro-food processing in Enugu State which is contrary to Federal Government Agricultural transformation Agenda that lays emphasis in value food chain addition.

**Table 5: Percentage Distribution of Respondents Based on Level of Participation of Rural Women in Post Harvest Food Processing**

Level of Participation	Percentage		
	Zone 1	Zone 2	Overall
Non participation	45.0	1.2	23.1
Low participation	51.2	60.0	55.6
Medium participation	3.8	38.8	21.2

Zone 1: Enugu North Senatorial Zone, Zone 2: Enugu West Senatorial Zone

### Estimated Amount Used as Start up Capital

Entries in Table 6 reveal the start up capital of women agro-food processors in the zones. In the overall, about 51.0% of the respondents had a paltry start up capital of less than ₦10,000.00 while 44.6%, 1.2% and 3.7% had between ₦10,000.00- ₦50,999.00, ₦51,000.00- ₦91,999.00 and ₦92,000.00 and above respectively. Only Zone 1 recorded a start up capital (7.3%) of ₦92,000.00 and above while only 1.2% of each of the zone had ₦51,000- ₦91,999.00 as start up capital. This amount is grossly inadequate to start up a meaningful local agro-food processing enterprise. The implication of this finding is that agro-processing enterprises in these zones (Enugu State) will be operating at minimal level because of lack of capital to provide necessary infrastructure and equipment for effective take off of the enterprises.

**Table 6: Percentage Distribution of Respondents Based on Estimated Amount Used for Start up Capital**

Start up Capital (₦)	Percentage (%)		
	Zone 1	Zone 2	Overall
Below 10,000.00	49.8	51.3	50.6
10,000.00-50,999.00	41.7	47.5	44.6
51,000.00-91,999.00	1.2	1.2	1.2
92,000.00 and above	7.3	0	3.7

Zone 1: Enugu North Senatorial Zone, Zone 2: Enugu West Senatorial Zone

### Sources of Funds for Agro- Food Processing

The results in Table 7 show sources of funds used by rural women in agro food processing. The major (74.4%) source of fund was through personal savings. Other sources include: thrifts (Isusu) (40.0%), family and friends (18.8%), money lenders (3.85%), banks (1.9%) and cooperatives (1.2%). It is also important to highlight that rural women could not source their funds from governments (federal, state and local government councils), angel investors or venture capitalist.

Since majority of the women use personal funding for entrepreneurial venture in agro food processing, it implies that they will have limited access to funds and this could result to limited expansion and growth of their enterprise. Most of agro food processing machines require huge capital which most of these women could not afford. This had hampered their effective operation, hence their mode of operation has remained subsistence in nature. Imhonop(2011) noted that most women cannot access financial credit, investment opportunities from Venture Capitalists(VCs) or Angels because of their gender and experience has been the plight of most women in Nigeria. Banks and financial Institutions most often do not lend to women. It follows that financial assistance to rural women entrepreneurs is restricted. Access to credit could improve entrepreneurial venture of rural women in agro food processing, improve their income and reduce food insecurity in most community in Nigeria. The low level of utilization of other sources of funding could be as result of limited knowledge of sources of fund available to entrepreneurs. Ogota and Ezenwobi (2011) listed about sixteen sources of fund available to entrepreneurs to include angel investors, venture capitalist, cooperative society, banks among others. Having adequate knowledge of these sources through entrepreneurial trainings could enable the women obtain the necessary fund needed for enterprise establishment and expansion, hence improving food security.

**Table 7: Percentage Distribution of Sources of Funds for Agro-Food Processing**

Sources of Funds*	Frequency	Percentage
Personal saving	119	74.4
Cooperative society	2	1.2
Money lenders	6	3.8
Banks	3	1.9
Families and friends	30	18.8
Thriffs (Isusu)	64	40.0

\*Multiple responses

### Exposure of Rural Women to Entrepreneurial Training in Agro- Food Processing

Data in Table 8 show the exposure of rural women to entrepreneurial training. Only about 13.0% of the respondents had previous knowledge of entrepreneurship through training while 87.2% had no exposure to entrepreneurial training at all. This implies that majority of the rural women had no knowledge about generation of business idea namely how to start up a business, how to write business plan, management of business, and ways of expanding businesses. This will eventually result to low output, low income generation, low standard of living and poverty. Again, it will likely limit their scope of operation, business growth, expansion and level of new product creation. It is also an indication that much awareness has not been created by the EDC programmes established by the Federal Government in Nigerian universities and extension agencies.

**Table 8: Percentage Distribution of Respondents Based on Exposure of Rural Women Training in Agro-Food Processing**

Were you Exposed to Training?	Percentage (%)		
	Zone 1	Zone 2	Overall
Yes	11.8	13.8	12.8
No	88.2	86.2	87.2

Zone 1: Enugu North Senatorial Zone, Zone 2: Enugu West Senatorial Zone

### Rural Women that Received Entrepreneurial Training in Agro- Food Processing

Data in Table 9 on the other hand, show rural women that received entrepreneurial training. Similarly, only about 13.0% of the respondents received entrepreneurship training while 86.9% did not receive entrepreneurial training at all. This is a cry from what is expected since training is very fundamental in empowering rural women through agro-food processing. The situation confirms that women are yet to leverage the opportunity offered by EDC established by the Federal government to enhance their food processing business. Entrepreneurship Initiative and training could open doors for entrepreneurs in rural Nigeria that were previously closed to them through lack of training or support. With improved skills, extension workers and EDC trainers can advise on the appropriate technology, effective marketing and management needed to create and run profitable and sustainable food processing businesses.

**Table 9: Percentage Distribution of Rural Women that Received Entrepreneurial Training in Agro- Food Processing**

Training Received	Percentage (%)		
	Zone 1	Zone 2	Overall
Trained	11.2	15	13.1
Not trained	88.8	85	86.9

Zone 1: Enugu North Senatorial Zone, Zone 2: Enugu West Senatorial Zone

### Rural Women Constraints to Agro- Food Processing Enterprise

Table 10 reveals rural women constraints to agro-food processing enterprise in Enugu State. The following constraints militated against agro-food processing enterprise to a great extent namely: lack of capital (M=2.90), inability to

apply modern processing (M=2.72), lack of governmental support (M=2.63), lack of processing equipment(M=2.51), low level of food processing concepts(M=2.49) ,Low level of business management(M=2.25). However, other constraints such as Low level of business idea(M=1.8), lack of skilled labour(M=1.68), lack of raw material(M=1.49) among others militated against agro-food processing enterprise to a little extent.

Lack of capital is a major constraint in agro food processing enterprise. Provision of capital can solve most the problems identified in the study. This is because capital is required for procurement of processing equipment, storage facilities and for expansion of the business in order to reduce costs and enjoy economies of scale by these women. Majority of the respondents use personal savings, loan from co-operatives and money borrowed from lenders to carry out their business (Table 3). Most often, money from these sources is not enough and could be the reason why many agro-food processors resort to traditional method of processing (Sanni, *et al*, 2009). Fabuiyi *et al*, (2007) observed that women generally do not control a lot of money in the household as a result their productive resources are usually limited. FAO studies confirm that while women are the mainstay of small-scale agriculture, farm labour force and day-to-day family subsistence, they have more difficulties than men in gaining access to resources such as credit and productivity enhancing inputs and services. Enhancing the access of the rural food processing entrepreneurs to credit through easy access to loan from people's bank, microfinance bank and Agricultural banks could lift up their productive capacities as they will be able to expand their business ,create more value added products, developing new products and increase food availability, hence improvement in food insecurity.

**Table 10: Mean Score Distribution of Constraints to Agro-Food Processing Enterprise**

Constraints	Zone 1		Zone 2		Overall	
	Mean	S. D	Mean	S. D	Mean	S. D
Lack of capital	2.84	0.37	2.96	0.25	2.90	.322
Lack of skilled labour	2.18	0.55	1.18	0.38	1.68	.691
Lack of manual labour	1.42	0.65	1.10	0.30	1.22	.487
Lack of processing equipment	2.82	0.39	2.22	0.96	2.51	.791
Lack of raw material	2.04	0.79	1.13	0.40	1.49	.738
Lack of governmental support	2.48	0.65	2.78	0.50	2.63	.595
Low level of food processing concepts	1.88	0.66	2.91	0.36	2.49	.720
Inability to apply modern processing techniques	2.60	0.64	2.84	0.49	2.72	.576
Low level of business idea	2.10	0.68	1.57	0.73	1.80	.754
Low level of business management	2.05	0.71	2.41	0.71	2.25	.726

#### **Influence of Selected Socio-Economic Characteristics on Level of Rural Women's Interest in Agro-Food Processing Enterprise**

Data in Table 11 show regression coefficients of the influence of selected socio-economic characteristics on level of interest of rural women on agro-food processing enterprise. The result shows that generally, the selected socio-economic characteristics have significant influence on the women's interest in agro-food processing enterprise. Specifically, the result showed that age and number of social organizations belonged significantly influenced the level of interest of rural women in agro-food processing enterprise. However, influence of age is negative while that of number of social organizations belonged is positive. This implies that as age increases level of interest decreases. This is a natural tendency because the physical strength tends to decrease with increase in age. On the other hand, the positive influence of number of social organizations belonged implies that as the number of social organizations increases the level of interest also increases. Again, as the women interact among themselves in their various social organizations they exchange ideas in their personal endeavours which have the capacity of increasing their interests if positive ideas concerning agro-food processing are shared. Therefore, since there is significant influence of some of the socio-economic characteristics on level of interest of women agro-food processors, the hypothesis should be rejected.

**Table 11: Influence of Selected Socio-Economic Characteristics on Level of Interest of Rural Women Agro-Food Processors**

Model	F	Sig.	Adjusted R Square	t	Sig.
1 (Constant)	10.28*	0.000	0.256	10.62*	.000
Age				-4.540*	.000
Family Size				-1.146	.254
Yrs of Formal Education				.984	.327
Number of Social Org				4.594*	.000
Income				1.545	.125

\*significant @  $P \leq 0.05$ , Dependent Variable: Level of Interest

### Perception of the Trained and Untrained Rural Women Agro-Food Processors on the Extent of Constraints to Agro-Food Processing Enterprise

Entries in Table12 show perception of the difference by trained and untrained agro-food processors on the extent of constraints to agro-food processing enterprise. The result revealed that there was no significant difference between the perception of trained and untrained rural women agro-food processors on the extent of constraints to agro-food processing enterprise. This implies that training received by rural women agro-food processors on entrepreneurship did not influence their perception on the extent of the various constraints to the agro-food processing enterprise. Therefore, the hypothesis that there was no significance difference between the perception of trained and untrained agro-food processors on the extent of constraints to agro-food processing enterprise should be accepted

**Table 12: Perception of the Trained and Untrained Agro-Food Processors on the Extent of Constraints to Agro-Food Processing Enterprise**

(Rate the Extent1)	Training	Mean	Std. Deviation	T-Value	P-Value
Lack of capital	Trained	2.90	.301	-.453	.653
	Not trained	2.94	.236		
Lack of skilled labour	Trained	1.76	.625	-.845	.404
	Not trained	1.94	.725		
Lack of manual labour	Trained	1.30	.470	-1.136	.264
	Not trained	1.53	.743		
Lack of processing equipment	Trained	2.6	.681	.198	.844
	Not trained	2.56	.705		
Lack of raw material	Trained	1.71	.784	-.587	.561
	Not trained	1.87	.743		
Lack of governmental support	Trained	2.57	.598	1.159	.254
	Not trained	2.33	.686		
Low level of food processing concepts	Trained	2.29	.717	1.416	.166
	Not trained	1.94	.772		
Inability to apply modern processing	Trained	2.67	.577	.870	.390
	Not trained	2.50	.618		
Low level of business idea	Trained	1.75	.851	-1.554	.129
	Not trained	2.18	.809		
Low level of business management	Trained	2.14	.793	-.676	.503
	Not trained	2.31	.704		

### Perception of Rural Women of the Effects of Educational Qualifications on the Extent of Constraints to Agro-Food Processing Enterprise

Table 13 revealed that educational qualifications affected the perception of rural women agro-food processors on the extent of the constraints to agro-food processing enterprise. This implies that educational qualifications significantly affected the way women agro-food processors perceive the extent of the constraints to the agro-food processing enterprise.

In other words women agro-food processors in Enugu State perceive lack of skilled labour, lack of processing equipment, lack of raw materials and lack of government support as very serious constraints to the agro-food processing enterprise. Therefore, the hypothesis that educational qualifications do not significantly affect the perception of women agro-food processors on the extent of constraints to agro-food processing enterprise should be rejected

**Table 13: Perception by Rural Women of the Effects of Educational Qualifications on the Extent of Constraints to Agro-Food Processing Enterprise**

Constraints(Rate the Extent)		Mean	Std. Deviation	F	P-Value
Lack of capital	FSLC	2.79	.419	0.993	0.413
	SSCE	2.95	.211		
	NCE/OND	2.91	.339		
	HND/Degree	2.87	.344		
	M.Sc./Ph.D.	2.87	.352		
	Total	2.90	.322		
Lack of skilled labour	FSLC	2.00	.667	9.075*	0.000
	SSCE	1.79	.742		
	NCE/OND	1.30	.533		
	HND/Degree	1.83	.576		
	M.Sc./Ph.D.	2.13	.640		
	Total	1.68	.691		
Lack of manual labour	FSLC	1.17	.577	0.836	0.505
	SSCE	1.31	.624		
	NCE/OND	1.15	.356		
	HND/Degree	1.33	.488		
	M.Sc./Ph.D.	1.22	.441		
	Total	1.22	.487		
Lack of processing equipment	FSLC	2.71	.588	3.323*	0.012
	SSCE	2.60	.751		
	NCE/OND	2.23	.945		
	HND/Degree	2.73	.550		
	M.Sc./Ph.D.	2.80	.414		
	Total	2.51	.791		
Lack of raw material	FSLC	1.64	.924	3.323*	0.012
	SSCE	1.65	.716		
	NCE/OND	1.20	.519		
	HND/Degree	1.47	.743		
	M.Sc./Ph.D.	2.25	.866		
	Total	1.49	.738		
Lack of governmental support	FSLC	2.44	.705	7.048*	0.000
	SSCE	2.62	.661		
	NCE/OND	2.71	.530		
	HND/Degree	2.60	.598		
	M.Sc./Ph.D.	2.64	.497		
	Total	2.63	.595		
Low level of food processing concepts	FSLC	2.33	.778	0.729	0.574
	SSCE	2.44	.773		
	NCE/OND	2.81	.480		

#### Implication of the Study for Agricultural Extension

Agricultural extension (also known as agricultural advisory services) plays crucial role in promoting agricultural productivity, increasing food security, improving rural livelihoods, and promoting agriculture as an engine of pro-poor economic growth. Extension as a rural support service is needed to meet the new challenges confronting agriculture in the global food and agricultural system, including the rise of supermarkets and the growing importance of standards and labels; growth in non-farm rural employment and agribusiness; constraints imposed by HIV/AIDS, and other health challenges

that affect rural livelihoods; and the deterioration of the natural resource base and climate change [International Food Policy Research Institute (IFPRI) 2006].

The main concern of agricultural extension is that it provides farmers with the necessary education, skill and technical information to enable them to take effective farm management decisions to enhance their farm practices (Ani, 2007). This kind of education is very vital to rural women who are both farmers and agro- food processors. Agricultural extension efforts should be directed to human value improvement especially rural women in order to position them to use scientific and technological information to improve their quality of life via value addition in agro-food processing enterprise.

As a non formal educational discipline, agricultural extension is the best method of educating the rural women on the necessity of establishing agro-processing enterprises as a means of alleviating their economic hardships. As these processing activities at first become partially commercial, then wholly commercial; and as they gradually increase in scale, they can become veritable business enterprises, introducing innovations in the techniques used (mechanisation), the work organisation (collective mutual help, wages, service providers) and even the products marketed (packaged products or entirely new products). They are not simply subsistence activities, but a haven for any woman who does not have access to an activity in the formal sector. Some activities, even if operated on a very small scale, are considered by the women themselves as actual professions which may evolve to become small firms. In general, this sector is a hotbed for know-how and competencies which, if it is supported, evolves in part towards more large-scale enterprises (Bricas, and Broutin (2008).

In most parts of rural areas of Nigeria, particularly Enugu State, rural women are traditionally involved in various aspects of agro-food processing activities such as drying, oil extraction, smoking, fermentation, shelling, peeling, crushing, grating etc. It is obvious that many of them are not engaged in sophisticated and complex agro-food processing activities probably because of lack of basic skill and finance. Therefore, agricultural extension agency and Centres for Entrepreneurship in universities should be empowered to mount special programmes aimed at addressing the problems of rural women engaged in agro-food processing. Agricultural extension will play a crucial role of mobilizing these women and conducting need assessments in order to ensure full participation and involvement of the women in the entire process.

Part of the problem of women in agro-food processing according to Bricas and Broutin (2008) include the fact that agro-food processing activities are performed by women and are based on domestic know-how, they are not really recognised as trades in themselves, unlike craftsmen in the metal or wood sectors for example. Consequently, these activities are often not registered at the Chamber of Trade, which is dominated by male-performed manufacturing or service activities, or the other consular chambers and organisations representing the private sector.

Because they are practised on a very small scale, mostly on an individual basis, more often than not at home and originally provide a “top-up” income, they are not seen to provide a significant value added and it is therefore felt that they do not merit consideration in the framework of development policies. They are even portrayed more as consequence of under-development and consequently as activities which should disappear with the industrialisation of the food sector.

They are considered to be archaic and inefficient because they involve manual work and even sometimes more of a handicap than of any great use, as the treatment they receive around the markets or in the street where they come together testifies. Only the small mechanised companies with managers capable of holding a dialogue with the state services or operators of development programmes and of playing the game receive any semblance of recognition and attention. They then begin to obtain access to credit, consulting services, technical experimentations and training, even if these support

media are still not particularly forthcoming. The others remain outside the main game. The above scenarios make the involvement of agricultural extension agency/workers in rural women agro-food processing enterprise imperative because they are properly trained to deal with such problems. According to Albrecht *et al*, (1989) Agricultural Extension is the process whereby the extension worker tries to motivate his clientele with the help of encouragement and ideas to solve his/her acute problems. The people concerned acquire a better insight into the network of problems and recognize the alternative solutions available to fix the problems. They gain from this, both incentive to embark on problem solving and the direction to take. Through the agency of extension, otherwise untapped human resources are set free and utilized. This view was collaborated by Maunder (1973) who sees Agricultural Extension as a service or system which assists farm people, through educational procedures in improving farming methods and techniques, increasing production efficiency and income, bettering their levels of living and lifting their social and educational standards.

The level of operation of rural women engaged in agro-food processing in Enugu State which is presently at subsistence level can be enhanced by informal education through agricultural extension workers. It is obvious that most of the women are not engaged in entrepreneurial business not because they are not interested but because of myriad of problems (lack of finance, lack of access to land and credit etc) preventing women to establish and own business. Since it has been established that owning a business has become the main source of income for 19.5 million adult Nigerians, the importance of micro-enterprises as the main source of income makes it a strategic area for the empowerment of women (EFInA, 2011, British Council Nigeria, 2012). Therefore, the women in agriculture component of Agricultural Development Programme (ADP) in the states should be given additional mandate in respect of entrepreneurship training.

## CONCLUSIONS/RECOMMENDATIONS

The study concluded that the level of rural women involvement/participation in post harvest agro-food processing activities in Enugu State was low. They participated in the establishment of micro agro-food processing enterprises with low start up capital which could affect the growth and sustainability of the agro-food processing enterprise. Majority of the women agro-food processors had no entrepreneurial training. The constraints that militated agro-food processing enterprise to a great extent were lack of capital and inability to apply modern processing techniques.

The following Recommendations were made: The constraints affecting their entrepreneurial participation in creating value added products and product development should be addressed. There should be entrepreneurship training on food processing to give adequate training to potential women food processing entrepreneurs and product development incubation centres in every local government area. Credit facilities should be made available to would-be small scale women entrepreneurs in the food processing enterprise. Promoting and nurturing an entrepreneurial environment by Government within local communities which will adapt easily to change through incorporation of women and ideas into the development process. There should be extension of EDC training programme and Centres of the Federal Government and Central Bank to Rural communities to enhance modern technology transfer to these rural women

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