

Income Enhancement Strategies of Female Headed Farm Families in Rural Areas of Delta Central Agricultural Zone, Nigeria

Uzokwe, U. N. & Okpoluaeife, L. O.

Department of Agricultural Economics and Extension,
Delta State University Asaba Campus.
uheadauzokwe@yahoo.com

Abstract

This study was carried out to determine the income enhancement strategies of female headed farm families in Delta Central Agricultural Zone, Nigeria. Specifically, the study determined their socio-economic characteristics, identified other income generating ventures they engaged in, ascertain the strategies they use to enhancing their income, and their effectiveness and determined their annual average income. Five Local Government Areas, Isoko North and South, Ethiopia East and West and Ughelli North were selected. Twenty communities that are well known for agriculture as major source of livelihood were purposively selected. Five female headed farm families from each of the communities were randomly selected resulting in a sample of 100. Interview schedules were used to obtain responses. Data gathered were analysed using frequency counts, percentages, mean scores, multiple regression analysis and Pearson product moment correlation (PPMC). Results of the study showed that majority (52%) of the respondents were widows, with the mean age of 45 years. Majority (91%) were literate. They had a mean household size of five persons. They had a mean farming experience of 22years; with a mean farm size of 0.2 hectare. Results on respondents' income generating activities revealed that all the female heads of families cultivated cassava, and processed it into garri (100%), starch (46%) and tapioca (23%). All their income was agro based. The strategies used in enhancing their income were all effective with the mean score above 2.50 except subscription to farm operation cooperative group. More income diversification is recommended.

Key words: *Income enhancement, strategies, female headed and farm families*

Introduction

United States Office of Management and Budget (2013) defined Female headed households as families living below the poverty level, with no husband present and no children under 18 years old at home. These federal thresholds definitions consider three parameters; family composition, family income, and the annual inflation. For example, in 2014, \$24,008 per annum was used as the poverty threshold for a family of two adults and two children. The income of the family is determined by considering: earnings, workers' compensation, Social Security, Supplemental Security Income, unemployment compensation, public assistance, survivor benefits, pension or retirement income, veterans' payments, interest, dividends, rents, royalties, income from estates, trusts, educational assistance, child support, assistance from outside the household, alimony and other miscellaneous sources. Information about unrelated individuals under age 15, institutional group quarters (example prisons or nursing homes, military barracks and people living in situations without conventional housing, college dormitories and who are not in shelters). Not considered also are non cash benefits like food stamps, capital gain or losses, housing subsidies,

and the income of non-relatives in the household. Female-headed households have increased significantly. This is of critical importance when considering that female-headed households most of which are headed by lone mothers, are rising in number and proportion in most developing regions, currently constitute an estimated 13% of all households in North Africa and the Middle East, 24% in Latin America, 22% in sub-Saharan Africa and 16% in Asia, (Bongaarts, 2001).

The household is regarded as the fundamental social and or economic unit of society. Transformation at the household form, therefore, has impact at the aggregate level of a country. In recent decades there is emergence of new forms of households. House headed by women has become a significant phenomenon worldwide in the last half of the 20th and 21th centuries (Baros and Fox 1997) Fuwa 2000 categorised female headed households in three broad definitions: demographic, self-reported and economic. Based on respondent's statements in surveys and censuses, the self-reported household category is often established although there is no precise definition. Female headed households where the male partner is temporarily not present or where the female head is single, separated as a result of divorce, widowed is taken account of by demographic definitions.

Households headed by females can be further disaggregated into de jure and de facto female headed households. De jure female-headed households are those usually headed by widows or unmarried, divorced or separated women. De facto female headed household are those households where the self-reported male head is not available most of the time (Fuwa, 2000). Finally, the level of economic contribution of females to the households can be used to define female headed households. Rosenhouse (1989) used the working head definition for the household member most heavily engaged in income-generating activities, which includes family labour (but excludes child care or household chores) as well as to emphasize the dual burden attached to female workers and activities in the labour market.

The definition of female-headed household adopted for this paper, is the one given by International Labour Organization (ILO, 2005): which define it as households where either no adult males are present, owing to divorce, migration, separation, non-marriage or widowhood, or where men do not contribute to the household income, although present.

Agriculture is crucial for growth and poverty reduction. However, the sector is underperforming in many countries because women, who are often a critical resource in agriculture and the rural economy, face constraints that reduce their productivity. Aggregate data shows that women comprise about 43 percent of the agricultural labor force globally and in developing countries (FAO, 2011). In Africa, estimated time that women contribute to agricultural activities is up to 60 -80 percent in some countries. Overall, the labour burdens of rural women exceed that of men, and include a higher proportion of unpaid household responsibilities related to preparing food and collecting fuel-wood and water.

Generally in developing countries women married and unmarried are usually the major contributors to household food security. In Delta State Nigeria which is the study area this is also the norm. In the case of female headed households especially for those who are widows, divorced or unmarried the burden of household maintenance rest squarely on their shoulders especially were their children are still too young to help their mothers in income generating activities .It is as a result of these challenges faced by female heads of family that this study was carried out to examine the different strategies used by the women to enhance their income and how effective they are.. To further guide this study the following objectives were used: to determine their socio-economic characteristics, identify other income generating activities they

engaged in, ascertain the strategies they use to enhancing their income, and its effectiveness, and to determine their annual average income. The following hypotheses were also tested: there is no significant relationship between the socio-economic characteristics of female household heads and the use of income enhancement strategies, and also, there is no significant relationship between family income and household size.

Materials and Methods

This study was conducted in Delta State Nigeria. Using the Delta agricultural development programme (DADP) classification, Delta State is classified into Delta North, Delta Central and Delta South Agricultural Zones. For this study the Delta Central Agricultural Zone was chosen. Out of ten Local Government Areas that make up Delta Central Agricultural Zone, five were selected namely; Isoko North and South, Ethiopia East and West and Ughelli North. Purposively, twenty (20) communities which are well known to be involve in agriculture as major source of livelihood were selected namely, Orogun, Irri, Emede, Olomoro, Uzere, Igbide, Ofagbe, Ahrade, Owhelogbo, Ozoro, Ellu, Ughiev-wen, Oteri, Jesse, Mossogar, Boboroku, Kokori-inland, Okpara-inland, ovu, and okpara water side. Five female headed farm families from each of the communities listed was randomly selected, to make a total of one hundred (100) female headed farm families which constitute the sample for the study. Data for this study was analyzed by using percentage, mean, and frequency. Socio-economic variables of the respondents were analyzed with the use of percentages, means, and frequency counts. Income generating activities, strategies used in enhancing income and it effectiveness was analyzed with percentages and frequencies. Multiple Regression Analysis was used to test hypotheses one (1) while Pearson Product Moment Correlation (PPMC) was use to test hypotheses two (2).

Result and Discussions

Socio economic characteristics of respondents

Results on table 1, indicated the mean age of 45years with most of the respondents falling between ages 30 to 49 years (51%). This is indicative of the fact that the women are still young and strong enough to carry out additional income generating activities in addition to crop farming which is their main income generating activity. This result agrees with the study of Giweze (2016) on rural women in Delta State that reported a mean age of 44 years with 47% between 28 and 47years, Sabo (2006) on the impact of Women-In-Agricultural (WIA) programme in Borno State, reported that (52%) of the women farmers were within 31 and 40 years which falls within the age bracket reported in this study. Information on respondent's marital status showed high percentage of widowhood (52%). This shows high male morbidity ratio which should be a cause for concern. The number of unmarried women heading families is also worthy of note (32%). It could be that the women tend to start families early in age as single parents which of course put a lot of burden on them at an early age. This could also explain why few of them were able to assess tertiary education (14%). The house hold size indicated a mean of 5 with 49% of the families with a family size of between 4 to 7 (49%). The average household size of five in this study is consistent with the national average reported by National Bureau of Statistics (2006). Fabiyi et al (2007) made similar observations in Gombe State. Implicit in these findings is that a large proportion of the female headed household had relatively large families. The mean years of farming experience was 22 years. This high number of years could be because they start farming at an early age while still in their parents' house. The data showed that farm size is generally small, as the mean farm size was 0.2 hectare, which is below half hectare. None

of the respondents' cropped up to half of a hectare of land. It could be that they did not have access to land which in many cases is through the husbands for married women.

Table 1: Socio-economic characteristics of respondents (n=100).

Variables	Frequency	Percentage	Mean
Age			
20 - 29	13	13	
30 - 39	25	25	
40 - 49	26	26	45
50 - 59	17	17	
60 - 69	19	19	
Marital Status			
Single	32	32	
Widow	52	52	
Divorce	16	16	
Educational Level			
No formal education	9	9	
Primary education	21	21	
Secondary education	56	56	
Tertiary education	14	14	
Numbers of children			
0 - 3	45	45	
4 - 7	43	43	4
8 - 11	12	12	
Age of children			
1 - 10	23	23	
11 - 20	45	45	
21 - 30	43	43	28
31 - 40	19	19	
41 - 50	4	4	
Household size			
0 - 3	35	35	
4 - 7	49	49	5
8 - 11	11	11	
12 - 15	5	5	
Farming experience			
10 - 12	5	5	
13 - 15	7	7	
16 - 18	14	14	22
19 - 21	14	14	
22 - 24	20	20	
25 above	40	40	

Farm size (in hectare)			
<0.05-0.05	15	15	
<0.1 -02	53	53	.02
<0.25-0.35	26	26	
<0.4 -0.5	06	06	

Other Income generating activities engaged in

Result on table 2, showed the income generating activities which the women were involved. One hundred (100%) the respondents of the study area are into garri processing, (46%) process starch, and 23% process tapioca which are all got from cassava. This is because the main crop grown by the women in the study area is cassava. Apart from this some of them are into trading (28%), gathering of forest products like snails (20%) and fuel wood (8%) and animal husbandry. Some of these processed products are sold to get income to meet other family needs. This findings is in concert with Economic Commission for Africa (1996) which posited that women produces up to four-fifths of essential foodstuffs, which they process and sell in large quantity. Flann and Oldham (2007) emphasized this point by observing that women perform a lot of economic activities for the purpose of generating income for their family upkeep.

Table 2: Other income generating activities engaged in

Income generating activities	Frequency	Percentage
Gathering and selling of fuel wood	8	8
Gathering of snails	20	20
Gathering and selling of bush mango	0	0
Processing of oil palm	2	2
Processing of garri	100	100
Processing of starch	46	46
Processing of tapioca	23	23
Rearing of local birds	14	14
Rearing of goats	6	6
Rearing of fishes	1	1
Trading	28	28
Involvement in casual jobs	15	15

Source: Field survey 2016

Strategies used in enhancing their income

The results on table 3, showed the number of respondents that use these strategies. The table showed that food processing has the highest percentage of 47%, daily contribution 41%, diversification 36% while limited use of hired labour is 24% of involvement. This implies that they tend to increase their income by processing therefore adding value to their farm produce which gives them more money than selling the products as harvested. The daily contribution makes it possible to save small amounts of money daily from their income which will help them in financing their children's education, healthcare, emergencies and other family needs. Income diversification is being involved in other types of income generating activities. Diversification is important in case of crop failure and also as a fall back in agricultural low seasons. Limited use of hired labour will help save money which would have been spent on labour.

Table 3: Strategies used in enhancing their income

Strategies	Frequency	Percentage
Subscription to farm operation cooperation group	1	1
Daily contributions	41	41
Buying and selling of farm products	19	19
Limited use of hired labour	24	24
Use of family labour	9	9
Serving as farm labour to other farmers	4	4
Subscription to thrift and saving groups	13	13
Adoption of improved crops varieties	2	2
Expansion of farm size	7	7
Engaging in joint farming	3	3
Diversification	36	36
Storage of farm products for the future	2	2
Food processing	47	47
Direct sales of products to consumers	15	15

Source: Field survey 2016

Effectiveness of strategies used enhance their income

With regard to the distribution of respondents based on the strategies used in enhancing their income, table 4, showed how effective the list of strategies provided were to the respondents as they accepted that Daily contributions (M=2.95), Buying and selling of farm products (M=2.80), Limited use of hired labour (M=2.65), Adoption of improved crops varieties (M=2.53), Expansion of farm size (M=2.83), Diversification (M=2.65), Storage of farm products for the future (M=2.61), Food processing (M=2.84), Direct sales of products to consumers (M=2.69), are effective as a means of enhancing their income, as they all exceed the mean cutoff point of 2.50, while others are not effective. The results established the fact that most of the respondents, add value to their products by processing their products either into garri, starch or tapioca of which they sell to earn income. Part of this income is saved through daily contribution.

Table 4: Effectiveness of strategies used in enhancing their income

Strategies	V.E (4)	E (3)	F.E (2)	N.E (1)	Total	Mean	Decision
Subscription to farm operation cooperation group	4	41	46	9	240	2.40	NE
Daily contributions	21	53	26	0	295	2.95	E
Buying and selling of farm products	11	58	31	0	280	2.80	E
Limited use of hired labour	10	46	43	1	265	2.65	E
Use of family labour	6	36	49	9	239	2.39	NE
Serving as farm labour to other farmers	0	19	59	22	197	1.97	NE
Subscription to thrift and saving groups	0	51	45	4	247	2.47	NE
Adoption of improved crops varieties	3	50	44	3	253	2.53	E
Expansion of farm size	9	65	26	0	283	2.83	E
Engaging in joint farming	4	35	49	12	231	2.31	NE

Diversification	11	47	38	4	265	2.65	E
Storage of farm products for the future	0	54	44	11	261	2.61	E
Food processing	13	58	29	0	284	2.84	E
Direct sales of products to consumers	11	47	42	0	269	2.69	E

Source: Field survey 2016,

Cutoff = (> 2.50= Effective, <2.50 = Not effective)

VE = Very effective

E = Effective

FE = fairly effective

NE = Not effective

Income of female headed farm families

On the income level, the study found that the mean annual income was ₦249, 000 and the monthly average income was ₦20,750 (table 5). This is low considering the mean number of children which was 4, and the mean household size that was 5. The implication of this result is that the income generated by the female headed household, is not enough to cater for the basic needs of their families. Ezeh, 2007 opined that low income has insidious implications on household welfare, investment and agricultural productivity. It means that most of the families may not be able to provide education for their children. This findings is however at variance with United Nation Development Programme (UNDP, 2005), which reported that over 60 percent Nigerians live on less that \$1 per day.

Table 4.5: Average annual income of female headed households

Yearly Income (₦)	Frequency	Percentage	Mean average income (₦)	Monthly average income (₦)
50,000 – 159,000	24	24		
160,000 – 259,000	40	40		
260,000 – 359,000	16	16	249,000	20750
360,000 – 459,000	11	11		
460,000 – 559,000	9	9		

Source: Field survey 2016

Test of hypothesis

There is no significant relationship between the socio-economic characteristics of female household heads and the adoption of income enhancement strategies.

Result on table 6, showed the estimate of the relationship between the socio-economic characteristics of female household heads and adoption of income enhancement strategies. Three functional forms of the equation were tried but the semi-log function was chosen as the lead equation as it has the highest R^2 -value of 0.927 which implies that the variables captured in this equation accounted for 92.7% of the total variation in the income enhancement strategies adopted by female household heads. All the variables were significant except age of children and age of female household heads that were not significant with adoption of income enhancement strategies. The negative sign borne by the coefficient (-1.079) showed that as the female household heads grows older, the number of income enhancement strategies adopted decreases. This could be due to the fact that as the female household heads grows older in age, the children also grow older and become less dependent on their mothers therefore reducing the burden. Consequently the need you struggle to make more income reduces.

Marital status of the female household heads also had statistically significant negative relationship with adoption of income earning strategies. The negative sign borne by the coefficient (-0.445) of this variable showed the fact that they are the ones solely managing the family and taking decisions. This is accounted for by the fact that psychological effect of such factors as divorce or death of spouse can lead to confusion and discouragement of the female household heads. Educational level of the female household heads had significant positive relationship with adoption of income enhancing strategies. Zulberti, 2004, opined that a higher number of educated citizenry implies higher level of literacy which translates to a reduction in poverty. This is attributed to the fact that education raise ones level of awareness and exposure and therefore adoption of livelihood strategies. Household size also had positive significant relationship with adoption of income enhancement strategies. This means that the larger the household size, the more income enhancement strategies that were used. Earlier findings indicate that large household size is positively correlated with poverty (Ike and Oboh, 2009). Larger household size means high responsibility and therefore the need to deploy more ways of improving income. The years of farming experience had positive significant relationship with adoption of income enhancement strategies by female household heads. This indicates that the higher the number of years of experience, the more the number of income enhancement strategies they used. Experience leads to greater efficiency. This is likely to help them determine the most efficient enhancement strategies to use. Farm size also had significant relationship with adoption of income enhancement strategies among female household heads. Larger farm size is likely to translate to higher income.

Table 6: Estimation of the relationship between socio-economic characteristics of female household heads and adoption of income enhancement strategies

Variable	Beta (coefficient)	Standard error	t-value
Constant	9795668.113	25364.968	3.993**
Age	-1.079	0.137	-4.936**
Marital status	-0.445	0.126	-3.456**
Educational level	0.312	0.907	3.432**
Age of children	0.096	1.426	0.627
Household size	0.097	0.572	0.030**
Farming experience	0.916	0.164	4.957**
Farm size	0.535	0.147	3.869**
R ² = 0.927			
F- value = 21.385			

Source: Field survey 2016,

**Significant at 0.05 level

There is no significant relationship between family income and household size.

Result on table 7, indicates a high positive correlation ($r=0.76$) between household size and family income. This implies that the larger the household size, the more income that will be generated by the household. This is because more people are likely to be involved in income generating activities. This consequent translates into increase income earned to the family. It also implies that households that are many but have young children are likely to deploy child labour to survive. This view is supported by Sorgin (1999), who holds that children from poor families are engaged to generate family incomes and compensate for economic discrepancies.

Table 7: Estimation of the relationship between family income and household size

Variables	Household size	Family income
Household size	1.000	0.761
Family income	0.761	1.000

Conclusion and Recommendation

Many of the women were heading their families as a result of death of husband. The women were engaged in mainly agro-base income generating activities. Their main crop was cassava which they process into garri, starch and tapioca. A few of them were engaged in gathering forest products like snail and fuel wood, keeping local fowl and goats and trading. Daily contributions, food processing, diversification and limited use of hired labour are among the main strategies used to enhance their income. There is need to introduce some income generating skills that are not necessarily agro based to help them generate income especially during the off farm seasons. They should be encourage to form and join cooperatives to help them access credit and inputs. Instead of the women engaging in individual savings through daily contribution which is risky, it is advised that they save money through the banking sector for safety purpose.

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