NIGERIAN AGRICULTURAL JOURNAL
ISSN: 0300-368X
Volume 50 Number 1, April 2019. Pp.77-84
Available online at: http://www.ajol.info/index.php/naj

ROLES OF FOREST AND TREE PRODUCTS IN EMPLOYMENT CREATION AND POVERTY REDUCTION IN RURAL AREAS OF DELTA STATE

Nwandu, P. I.
National Open University of Nigeria, Abuja
Corresponding Authors' email: pnwandu@noun.edu.ng

ABSTRACT
The study was conducted to investigate roles of forest and tree products (FTPs) in employment creation and poverty reduction in rural areas of Delta State, Nigeria. Purpose was to attract the attention of policy makers and stakeholders that aside farming there are other sectors of the rural economy that can help address food problems, create jobs and reduce poverty when given attention. Multistage sampling techniques were used to select 360 rural household respondents. Data were collected from primary and secondary sources. Data were analysed using descriptive statistics, Z-test distribution and Foster, Greer and Thorbecke model of poverty analysis. Results show that income from farming by the rural households was the highest, followed by income from FTPs. However FTPs consumption income was the highest among the rural households, followed by consumption income from farming. FTPs income helped to reduce poverty among the rural households. This is because when FTPs income was excluded from household total income, incidence, gap, and severity of poverty increased from 0.4870, 0.1522 and 0.0476 to 0.7903, 0.3203 and 0.0810 respectively. Females were more actively involved in FTPs employment than their male counterparts t ($P<0.05$). The results call for policy direction towards enhancing production, processing, marketing, method of extraction and conservation of FTPs to help increase employment, generate more income, and reduce poverty. FTPs should be properly valued and used to provide good estimates of the rural economy.

Keywords: Forest and Tree Products Income, Employment Creation and Poverty Reduction

Introduction

Within the framework of off-farm economy in Nigeria, the rural people especially the poor are dependent on forest and tree products (FTPs) for most of their livelihood. Forest and tree products are derived from natural forest, planted forests and trees outside forest. Trees outside forest include isolated trees in landscape, windbreaks, shelter belts, trees along roads and rivers, trees in agricultural systems and trees in urban environment (FAO, 2013b). According to Ahmed (2000), FTPs are products from forest and all other parts or produce of trees and plants including climbers, grasses and creepers. They also include produce from animals when found or brought from a forest, peat surface soil and minerals. In this study, FTPs are defined as products derived from natural forest, planted forest (including plantations and orchards) and trees outside forest. FTPs are made up of wood and non-wood products. The wood products are mainly timber, firewood and charcoal. Timber is used mainly as building materials, furniture, matches, utensils, books, newspapers, toilet tissues and fuel wood among others (FAO, 2013a). On the other hand non-wood forest products (NWFPs) consist of goods of biological origin. They include; fruits, nuts, mushrooms, beverage, wine, clean water, medicinal plants, latex, rubber, gums, and resins, cloth, jute fibres, bask fibres, chewing sticks, tooth cleaners, sponges, decorative bead, oil, barks, bark and lac, natural varnish, tanning extracts, fodder, honey, bee wax, milk cocoons and forest games. For the purpose of this study, the economic and environmental services provided by forest and trees, for example carbon sequestration, soil fertility and soil protection, watershed protection, windbreak uses or general aesthetic and spiritual values are not included.

FTPs contribute significantly to rural household consumption, income and employment. Such contributions include; satisfaction of subsistence needs (for instance food, fuel, building materials), substitution for purchased farm input (such as live fencing, animal fodder, green manure), opportunities to supplement cash income through sale of raw or processed FTPs and food security-use of forest and tree products as hunger insurance to tide over pre-harvest period (Nwandu, 2013). FTPs based activities provide substantial employment opportunities in many rural

areas. These FTPs based activities often require low establishment costs and are characterized by easy and open market access which tend to make them accessible to rural households and the poor (Rahut et al., 2016). It may be full or seasonal employment. The seasonal employment is often linked to agricultural seasons providing employment during the slack period and cash for investment in the following season. FTPs employments engaged by rural households include: processing enterprises; handicraft making; gathering and collection of FTPs, extractivism; fuelwood and charcoal collection and trade (Hlaing, et al., 2017). FTP processing is apparently one of the most widely available non-farm sources of income in rural areas (Eneji et al., 2015). There is increasing recognition within the field of forestry that gender issues are important (Moss and Swan, 2013). The focus has shifted recently to women and men's access to forest resources, as a means of improving livelihoods for the resource poor and sustainable forest management locally and globally. Men usually focus on the management of timber while many rural women spend many hours each day collecting NTFPs especially fuelwood which they depend on for cooking their food

Recent data from NBS (2018) confirm glaring rural poverty (73.2%) and rising income inequality (0.4334) in rural areas in Nigeria in spite of rural population engaged in food production. Unemployment plagues Nigeria both in the cities and its rural areas and growing population worsen the problem. There is high unemployment rate of 23.10% with a higher unemployment rate of 33.2% in rural areas (NBS, *ibid*). Against this background, it becomes necessary to explore and develop other sectors of the rural economy. The expectation is to help broaden the choice of policy alternatives in solving food problems, reduction of unemployment, poverty and income inequalities in the rural areas. An important but neglected sector in the rural economy is the FTPs. Aside the exploitation of FTPs like timber which is well documented, quantified and generally accessible to national statistics and calculations, information on the informal activities of the non-timber FTPs which is engaged in by the vast majority of the rural households are not generally known. If known, they tend to be descriptive rather than quantitative and are discounted in national statistics (Nwandu, 2013). These knowledge gaps identified are not being targeted but are necessary for policy. This study therefore examined these issues and made some recommendations that will help improve rural household livelihood and management of FTPs resource based in the rural economy. The broad objective of the study is to investigate roles of forest and tree products in employment creation and poverty reduction in rural areas of Delta State, Nigeria.

Methodology

The study area was Delta State, Nigeria. It is estimated that 70% of the State population is rural of which 75% were engaged in one form of farming or the other. The total number of farm families is estimated at 176,256 (NBS, 2014). Apart from agriculture, majority of the rural population are engaged in off-farm, non-agricultural activities which include diverse forms of artisanship, business, employment in both public and private sectors, forestry and other forms of wage labour (Delta State Ministry of Agriculture and Natural Resources – MANR, 2001). The State is divided into 3 Agricultural Zones with 25 Local Government Areas (LGAs) which includes; Delta North (9 LGAs), Delta Central (8 LGAs) and Delta South (8 LGAs). Multistage sampling techniques were used for the study. The first stage was the purposive selection from the 3 Agricultural Zones, 2 local government areas each giving a total of 6 LGAs used for the study. The LGAs selected were identified from Delta State Ministry of Environment to have forest resources. From each of the LGAs selected, 4 rural villages were selected through random sampling from the list of villages compiled by the Delta State Ministry of Lands and Survey, Asaba. Selection of the households formed the final stage of the sampling. With the assistance of the village heads, the list of the total number of households in each selected village was compiled. In summary, there were a total of 1,488 households in the 24 villages selected for the study. The LGAs and the villages selected were: Oshimili South (Obiokpu, Oko-Anala, Oko-Ogbele and Akpako); Ndokwa East (Utchi, Abala, Oshimili and Asaba-Ase); Ethiope West (Ovade, Otefe, Jesse and Oghareki); Okpe (Jakpa, Aragba, Ometan and Jeddo); Patani (Bulou-Angiama, Koloware, Odorubu and Toru-Angiama) and Isoko South (Irri, Uro, Uzere and Ada). Data was gathered from both primary and secondary sources. The primary data were generated by use of sets of structured and semi-structured questionnaire, oral interviews and focus group discussions. The structured questionnaire was used to elicit information from rural households. The data were collected on daily basis and collated into weeks, months and finally annually. From the 360 copies of the semi-structured questionnaires administered, 179 rural household respondents successfully completed the exercise for income and consumption data and were used for analysis. Because of the seasonal availability of FTPs, this exercise was carried out for a year (October 2016 to September 2017). Data were analysed by the use of descriptive statistics such as frequency distribution, percentages, means and standard deviations. The economic valuation techniques of market price-based valuation method such as Benefit Transfer (BT) method was also used to arrive at average price estimates for most of the FTPs where formal markets do not exist for such FTPs and also for own consumption. The method was used because majority of the villages in the LGAs were similar in culture, tradition and beliefs. Poverty among FTPs – dependent rural households was measured with Foster, Greer and Thorbeck (FGT) Model of Poverty analysis.

Significant difference in engagement in FTPs employment was tested using t-distribution statistics. The Z-test is given as:

$$Z = \frac{X_1 - X_2}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}} \quad (1)$$

Where,
$\bar{x}_1$ = mean of household members – males, engaged in FTPs employment
$\bar{x}_2$ = mean of household members – females, engaged in FTPs employment
σ_1^2 = standard error of household members – males, engaged in FTPs employment
σ_2^2 = standard error of household members – females, engaged in FTPs employment
n_2 = Number of males engaged in FTPs employment
n_2 = Number of females engaged in FTPs employment

Foster, Greer and Thorbeck (FGT) Model of Poverty Analysis
FGT is defined in this study as:

$$P_\alpha = \frac{1}{n}\sum_{i=1}^{q}\left[\frac{Z - y}{Z}\right]^\alpha \quad (2)$$

Where,
Z = poverty line
q = number of individuals in the household below poverty line
n = the total number of individuals living in the household
y = expenditure of household in which the individual lives
α = FGT index and takes on the values of 0, 1 and 2

The equation in parentheses $\left(\frac{z - y_1}{z}\right)\alpha$ is the proportionate shortfall of expenditure or income below the poverty line.

(I) If the α is raised to 0 then the poverty index measured is the Head-Count Ratio or Incidence of Poverty.
(II) If the α is raised to 1 then the poverty index measured is the Poverty-Gap Ratio or Intensity of Poverty. That is the proportion the average poor will require to at least get to the poverty line.
(III) If the α is raised to 2 then the poverty index measured is the Severity of Poverty, which gives more weight to the poorest. The closer the value is to 1 the higher the intensity of poverty.

Results and Discussion
Demographic characteristics of FTPs- dependent Rural Households
Demographic variables which may influence decisions of FTPs- dependent rural households were examined. Table 1 shows that the highest age category was between 41 – 50 years with 29.7% rating followed by with age ranges of 31 – 40 years (26.5%) and 51 – 60 years (23.5%). The least category was from 61-70 (12.60 %) and 20-30 years (5.60%). It is therefore men and women of active age that are actively engaged in FTPs activities. The implication is that for any meaningful intervention in FTPs activities, the target group should be mainly household members between the ages of 31 to 60 years. On marital status, 80.0% of the rural household head respondents were married. The high percentage of married respondents has implications for household size which in turn influences the population engaged in FTPs activities. A relatively large household size was obtained in the study area, with a mean size of 11 persons per household. Although a very large family size may constitute a social burden, larger households used their labour input to an advantage in farming and FTPs exploitation. The intensity of FTPs exploitation has been found to have direct relationship with household size (Inoni and Omotor, 2009).

The distribution in Table 1 shows that 23.5% had no formal education while 76.5% had formal education. Situations where majority of the respondents have formal education have implication for policy and implementation, enlightenment on controlled extraction of FTPs, conservation of FTPs, value addition to the FTPs and commercialization of the FTPs among others. The main occupations engaged in were agriculture and FTPs activities. Other occupations engaged in by the rural households include business activities (petty trading, middlemen, transporters, provision stores, among others). This was followed by agricultural labour and artisans. Artisans include bricklayers, carpenters, mechanics, welders, barbers and hairdressers. The public and private occupations were the least sector with 19.4%. Usually, FTPs activities are usually grouped with agriculture but in this study they were separated to find out the contribution of each sector to the rural household economy. While some members of the household engage in farm work others are busy with FTPs activities.

Valuation of FTPs Contribution to rural Household Income and Consumption
The economic activities engaged in by the rural households were valued and categorized into FTPs, Agriculture, Agricultural labour, Business, Public and Private sector, Artisans and Transfers. Transfers are gifts, donations, social entitlements, remittances and so on that accrued to the rural household. The study

established the contributions of income and consumption (expenditure) from these sources to the total income and consumption of the rural household. The rank of FTPs income and consumption among these economic activities was also determined.

Result in Table 2 showed that the greatest contributor to rural household total income was agricultural income (39.3%), followed by FTPs (33.8%). There was huge gap between the income contributed by agriculture and FTPs from other economic activities. For instance, business contributed 6.8%, artisan 6.5%, transfers 5.9%, public and private sector 4.8%. The least contribution of 2.9% came from agricultural labour. Agricultural labour contributed the least income to total income even when a sizeable proportion (22.1%) of the rural household respondents was engaged in it. This is because labour wages are low in the study area. Giroh, et al (2013) found a man/day farm labour of about 8 hours to be N378.00.

Table 3 shows that the highest contribution to the total consumption of 31.9% came from FTPs consumption, followed by consumption from agriculture with 25.0%. The least contribution of 4.5% came from agricultural labour. FTPs being the highest contributor to total consumption may be because apart from the general contribution FTPs make to rural household food basket; it also helps to bridge the gap during pre-harvest period (Jumbe et al., 2013). Furthermore while agricultural income is saved for further production, payment of school fees and execution of capital projects, among others, FTPs income is used to purchase subsistence need and for own consumption (Jumbe et al., *ibid*).

Analysis of Poverty, among FTPs-Dependent Rural Households

Two estimations were done. First, was relative poverty analysis with FTPs consumption income while the second was without FTPs consumption income. The comparisons were done with a view to determine the effect of FTPs on poverty in rural households. The results are presented in Table 4.

The results show that when relative poverty was measured with FTPs consumption income inclusive, the head count index was 0.4870 depicting that 48.70% of FTPs-dependent rural households were poor. The income-gap ratio or intensity of poverty was 0.1522. That is the poor individual's income transfer requires about 15.22% to bring them to poverty line. The severity of poverty was 0.0476 which showed that 4.76% of the individuals suffered severe poverty. However, when relative poverty was measured without FTPs consumption income, poverty increased tremendously. The head count index increased to 0.7903 subjecting about 30.3% more individuals into poverty. The income-gap ratio widened to 0.3202 while the severity of poverty also rose to 0.0810. These findings have therefore revealed that although poverty pervades in rural households, FTPs income is an important source in reducing poverty in rural households as also observed by Reddy and Chakravarty (1999) and Mulenga et al., (2012).

Type of FTPs Employment Engaged in by Members of the Rural Household

The type of employment engaged in by members of the rural household has become an important issue in FTPs production and management. Table 5 shows the views of the respondents on the types of FTPs employment identified in the study area and employment the members of the rural households were engaged in.

Adult male members of the rural household engaged in FTPs employments that were physically challenging such as; lumbering (70.1%), cane collection and processing (57.5%), carpentry (48%), fishing (58.6%), hunting (78.3%), thatching (64.3%), tapping (60.1%), carving (67.9%) and furniture making (68.8%). Females were mainly engaged in less physical FTPs employments. Such employments include; planting, tending and harvesting of FTPs (39.0%), non- wood forest products (NWFPs), collection and processing (39.0%), vending of processed FTPs (40.0%), selling of firewood (31.6%), weaving (40%), broom making (39.3%), twine/rope making (35.8%), mat/hat making (35.8%), selling of charcoal (51.2%), selling of fish (44.3%), pottery (67.6%) and soap making (55.1%). The common FTPs employments between adult male and female members of the households include firewood collection, seedling production, basket making, charcoal production and brewing/wine making. However, even in all these common employments, the adult female was still more active than their male counterparts. It can also be observed that the male and female children were generally engaged in those employments that were adult activities. That is the male child helping the adult male while the female child helps the adult female. Further observation revealed that the male child also tends more to help the adult female. Such can be found in employments like NWFPs collection, vending of processed FTPs, selling of firewood, broom making, twine/rope making and mat/hat making.

Employment in FTPs as Affected by Household Size

The result of the Z-test analysis that states that there is no significant difference between employment in FTPs activities and household size is presented in Table 6. The Z-test analysis showed a calculated Z-value of 18.750 compared to a critical t-value of 1.96 at 0.05 level of significance. This indicates that the difference was significant; implying that employment in FTPs was affected by household size. We can therefore conclude that FTPs activities (employments) in the household were significant.

Conclusion

Results confirmed that poverty generally pervade in the rural areas. However, incomes from FTPs employment were found to reduce poverty in the rural areas. FTPs provide substantial employments to members of the rural household. Findings of this study have shown that FTPs employments play an important role in rural economy and in alleviation of rural poverty. Such should be given attention by policy makers in the areas of improving production, processing, marketing, method of extraction and conservation of FTPs among others. FTPs like agricultural food crops and livestock should be properly valued and used to provide good estimates of the rural economy. There is therefore need to replicate this study in a nationwide assessment survey of the values of FTPs. This will help establish a platform for integrating its values into national household surveys and ultimately the national accounting system. There should be improvement in technology used for FTPs production, processing and marketing. This will help add value to the finished products to attract fair product prices and more income for rural households. Given the considerable potentials of FTPs to contribute to rural household livelihoods, there is need for research into ways of improving the values of FTPs. For instance, seeds and seedlings production, cultivation of those FTPs which are frequently used and some that are going into extinction.

References

Ahmed, I. (2000). "The Development of Forest and Tree Products." Paper presented at National Agricultural Development Seminar, Zaria. Held at Ahmadu Bello University, Samaru, Zaria, 26th July – 5th August.

Delta State Ministry of Agriculture and Natural Resources-MANR (2001). Delta State at a Glance. Asaba; DSTMANR.

Delta State Ministry of Environment (2009). Delta State Forest-Status. Asaba: Delta State Government.

Eboh, E. C. (2009). "Social and Economic Research Principles and Methods." Enugu: African Institute for Applied Economics.

Eneji, C. V. O., Ajake, O. A., Mubi, M. A. and Husain, M. A. (2015). Gender Participation Forest Resources Exploitation and Rural Development of the Forest Communities in Cross River State, Nigeria. *Journal of Natural Sciences Research*, 5 (18).

FAO (2013a). Food Agricultural Organisation. Towards Assessment of Trees Outside Forest. FAO Working Paper, 2 April, 2013.

FAO (2013b). Food Agricultural Organisation Towards a Harmonised Definition of Non-Wood Forest Products. FAO Forestry Rome: FAO.

Hlaing, Kamyama, and Saito (2017). Interaction between Rural Peoples Basic Needs and Forest Products: A Case Study of the Katha District of Myanmar-Hindawi, *International Journal of Forestry Research*. Vol. 20, Article ID2105012.https://doi.org/10.1155/2017/2105012.

Inoni, O. E. and Omotor, D. G. (2009). 'Effect of Road Infrastructure on Agricultural Output and income on Rural Households in Delta State, Nigeria' Agricultural Tropic Et Subtropica, 42(2): 90 -97.

Jumbe, C. B. L., Bwalya, S. M. and Husselman, M. (2013). 'Constribution of Dry Forests to Rural Livelihoods and the National Economy in Zambia www.cifor.org/miombo/docs/zambia National Case Study.pdc

Moss, C. and Swan, A. (2013). Gender Analysis in Forestry Research: What Policymakers should Know, Forest News.Friday, 8 March, 2013.https://forestsnews.cifor.org.module15

Mulenga, B. P., Richardson R. B. and Tembo, G. (2012). 'Non –Timber Forest Products and Rural Poverty Alleviation in Zambia'. Working Paper (62), Indaba Agricultural Policy Research Institute (IAPRI), Lusaka, Zambia. April, 2012

NBS (2018). Nigeria Bureau Statistics. Nigeria Unemployment Rate. Lagos: FGN/NPOPC.

NBS (2017). Nigeria Bureau of Statistics. Unemployment/Underemployment. Lagos: FGN/NPOpC

NBS (2014). Nigeria Bureau of Statistics. Poverty Profile for Nigeria 1980 - 2010. Lagos: FGN/NPOpC.

Nwandu, P. I. (2013). Effects of Forest and Tree Products on Poverty and Income Distribution in Rural Areas of Delta State, An Unpublished PhD Theses Dissertation of the Department of Agricultural Economics, University of Nigeria, Nsukka.

Rahut, D. B.. Behera, B. and Ali, A. (2016). Do Forest Resources Help Increase Rural Household Income? Forest Trees and Livelihoods, 25:2016 – Issue.

Reddy, S. R. C. and Chakravarty, S. P. (1999). "Forestry dependence and income distribution in a subsistence economy: Evidence from India." *World Development Journal*. 27(7).

Table 1: Demographic characteristics of rural household (n =340)

Age (Years)	Frequency	Percentages %
20 – 30	19	5.60
31 – 40	90	26.50
41 – 50	101	29.70
51 – 60	80	23.50
61 – 70	43	12.60
Marital Status		
Married	272	80.00
Widowed	36	10.60
Single	4	1.20
Divorced	28	8.20
House Hold Size		
Less than 7 persons	13	3.20
7 – 11 persons	176	51.80
12 – 14 persons	106	31.20
Greater than 14	40	11.80
No response	5	1.40
Educational Qualification		
Post- Secondary Education	29	8.60
Secondary Education	76	22.40
Primary Education	155	45.60
No Formal Education	80	23.50
Main Occupation		
Agriculture	340	100.0
FTPs	340	100.0
Artisan	75	22.10
Business	121	35.60
Agricultural Labour	78	22.90
Public and private sector employee	66	19.40

Source: Field Survey 2016/2017

Table 2: Contributions of different economic activities to rural household income

S/N	Income Source	Amount Contributed to Total Income (N)	Percentage (%) Contribution to Total Income
1.	FTPs	67,433,096	33.8
2.	Agriculture	78,463,242	39.3
3.	Agricultural labour	5,866,179	2.9
4.	Business	13,535,775	6.8
5.	Public and private sector employee	9,647,877	4.8
6.	Artisan	12,982,195	6.5
7.	Transfer	11,695,600	5.9
	Total	**199,623,964**	**100.0**

Source: Field Survey 2016/2017
US $1.00 = Nigerian Naira (N360.00) as at 2018

Table 3: Contributions of different economic activities to rural household consumption

S/N	Economic Activity	Contribution to Total Consumption (N)	Percentage (%) Contribution to Total Consumption
1.	FTPs	21,720,828	31.9
2.	Agriculture	17,022,592	25.0
3.	Agricultural labour	3,064,066	4.5
4.	Business	6,264,314	9.2
5.	Public and private sector	4,017,332	5.9
6.	Artisan	5,99,1952	8.8
7.	Transfer	10,009,284	14.7
	Total	68,090,368.00	**100.0**

Source: Field Survey 2016/2017
US $1.00 = Nigerian Naira N360.00 as at 2017

Table 5: FTPs employment engaged in by members of the rural household

S/N	Employment	Adult Male		Adult Female		Male Children*		Female Children*		Total	
		Fre	%	Fre	%	Fre	%	Fre	%	Fre	%
	Production										
1.	Seedling production	35	38.4	32	35.2	12	13.2	12	13.2	91	100.0
2.	Planting, tending and harvesting	54	28.9	73	39.0	27	7.9	33	9.7	187	100.0
3.	FTPs collection	143	16.7	131	38.6	65	19.0	87	25.7	340	100.0
4.	Lumbering	75	70.1	-	-	19	17.8	13	12.1	107	100.0
5.	Firewood collection	76	22.4	107	31.6	80	23.4	77	22.6	340	100.0
6.	Cane collection	64	51.6	20	16.1	40	32.3	-	-	124	100.0
7.	Bamboo collection	176	57.5	20	6.5	110	36.0	-	-	306	100.0
8.	Charcoal production	32	40.0	21	26.2	15	18.8	12	15.0	80	100.0
9.	Fishing	123	58.6	16	7.6	71	33.8	-	-	210	100.0
10.	Hunting	159	78.3	13	6.4	31	125.8	-	-	203	100.0
11.	Pottery	-	-	25	51.0	11	22.5	13	26.5	49	100.0
12.	Tapping	169	60.1	20	7.1	80	28.5	12	4.3	281	100.0
13.	Brewing/winemaking	32	36.3	24	27.3	16	18.2	16	18.2	88	100.0
	Processing										
14.	Processing of FTPs	60	17.8	134	39.3	63	18.4	83	24.5	340	100.0
15.	Weaving	17	18.9	36	40.0	15	16.7	22	24.4	90	100.0
16.	Broom making	24	7.0	134	39.4	82	24.2	100	29.4	340	100.0
17	Basket making	24	7.0	134	39.4	82	24.2	100	29.4	340	100.0
18.	Cane processing	64	51.6	20	16.1	40	32.3	-	-	124	100.0
19.	Bamboo processing	176	57.5	20	6.5	110	36.0	-	-	306	100.0
20.	Twine/rope making	21	9.6	78	35.8	51	23.4	68	31.2	218	100.0
21.	Mat/hat making	21	9.6	78	35.8	51	23.4	68	31.2	218	100.0
22.	Carpentry	26	48.2	-	-	16	29.6	12	22.2	54	100.0
23.	Thatching	45	64.3	-	-	15	21.4	10	14.3	70	100.0
24.	Soap making	10	9.3	54	50.0	13	12.0	31	28.7	108	100.0
25.	Carving	55	67.9	-	-	26	32.1	-	-	81	100.0
26.	Furniture making	33	68.8	-	-	15	31.2	-	-	48	100.0
	Marketing										
27.	Vending of FTPs	27	8.0	136	40.0	81	23.7	96	28.3	340	100.0
28.	Selling of firewood	66	19.3	107	31.6	74	21.8	93	27.3	340	100.0
29.	Selling of charcoal	12	15.0	41	51.2	15	18.8	12	15.0	80	100.0
30.	Fish selling	26	14.8	78	44.3	25	14.2	47	26.7	176	100.0

Source: Field Survey 2016/2017

Children are members of the household below the age of 17

Table 4: Relative Poverty Indices with and without FTPs Consumption

	H (α = 0)*	I(α = 1)*	FGT (α = 2)
1.	Poverty indices with FTPs consumption income		
	0.4870	0.1522	0.0476
2.	Poverty indices without FTPs consumption income		
	0.7903	0.3202	0.0810

Source: Field Survey 2016/2017

H(**α** = 0) = Head count ratio, I(**α** = 1) = Income – gap ratio, FGT (**α** = 2) = severity of poverty.

Table 6: **Household size in relation to FTPs employment**

Total Household Size	Mean	N	Std deviation	Std Error Mean	t-cal	Df	Sig (2) tailed	Remark
Total household size	13.09	340	3.562	0.913				
Total number of household members engaged in FTP employment	10.30	340	2.617	0.142	18.750	339	0.00	S*

Source: Field Survey 2016/2017. * = Significant, Significant level = 0.05