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Effects of Non-Timber Forest Products Consumption on Household Food Security Level in Oyo State, Nigeria

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ABSTRACT: *This paper thus assessed effects of Non-Timber Forest Products (NTFPs) in Oyo state on the household's food security level. Multistage sampling technique was employed, firstly, purposive selection and ogbomoso agricultural zones of Oyo state, secondly, random selection of four (4) LGAs, random selection of 40% of blocks and random selection of a village from each of the selected blocks. Random selection of 3.5% of the women that involved in non-timber forest products in the study and this resulted into selection of 214 respondents for the study. Interview schedule was used to collect primary data from a respondents (women) based on the set objectives of the study.The mean age of the most of the respondents was 47years. The result of the finding also indicates that most of them were married and have a mean years of schooling was 12years which implies that most of them gad secondary school education. it was indicates that the three major religions were being practiced in the study area. The numerous opportunities accrued to the usage of forest products could be further exploited by educating rural women on other environmentally sustainable benefits of the non-timber forest products in their areas. It was also revealed that most households had an average of seven (7) members in their households. Polygamy system of marriage was the most widely adopted system in the study. Farming is the major livelihood activity and most of the respondents engaged in crop production in the study area. The mean farm size of most of the respondents was found to be 11.06 hectares while the mean years of farming experience was 23years. Most of the respondents did not belong to any social organizations. Most of the non-timber forest products were utilized majorly as food, fruits, medicine while some were utilized purposively as wrapping materials, oil, fuel, duck stock and construction/handcraft purposes. Most of the non-timber forest products identified in the study area were most commonly consumed at moderate level. Most of the households were highly satisfied with the utilization of the non-timber forest products in their households. The potentials embedded in the utilization of non-timber forest products were yet to be fully utilized in the study area. Women were found contribute to family nutrition through the utilization of non-timber forest in the study area. Most of the households were moderately food secured. The results of the analysis revealed that age (r=0.124*) and years of schooling (r=0.148*) were significantly related with household food security level. Based on the results of the finding, the following recommendations are necessary; more effort should also be made to create more awareness on the potentials in non-timber forest products utilization to further reduce poverty level in the study area, government and other stakeholders in agricultural development should intensify effort and give more support to the farmers in terms of financial, training, monitoring and other essential services in order to boost the level of production in the study area and more effort should be made to address the issue of poor labour supply in the study so as to reduce incidence of not able to carry out most of the farm activities and to aid timeliness in carrying out farm activities.*

KEYWORDS: non-timber forest, products, consumption, household, food security, oyo state, Nigeria.

INTRODUCTION

Non-Timber Forest Products refers to all products (other than industrial round wood and derived sawn timber, wood chips, wood based panels and pulps) that may be extracted from ecosystem and are utilized within the household or are marketed or have social, cultural or religious significance(FAO, 1990). Rijsort (2000) defines NTFPs as all tropical forest products (plant and animals or parts) other than industrial timber which area (or can be) harvested for human use at the level of self-support for commercial purposes. About 80% of the enveloping countries in the developing world depend on NTFPs for their primary wealth, health and nutritional needs (FAO 1996). Okafor, (1993) defined NTFPs as forest goods and services providing for wood products. These include poles, fuels, chewing stick, gum, dye, herbs, shrubs, wine, stem fibers, seed, spices, mushroom, snail, wild vegetables, fruits etc. These include plant and plant materials used for food, fuel, storage and fodder, medicine, cottage and wrapping materials, biochemical as well as animals, birds, reptiles and fishes, for food and feather.

the significance of NTFPs in rural livelihood improvement and for subsistence has been established by a number of studies at the national level I n Nepal (Shrestha et al 2003; Gauli and Hauser, 2009), but little is known about their collection and marketing dynamics (Bista and Edward, 2006). Tracing the history of Ntfp exploitation reveals an overharvesting of medicinal plants; other items are largely being ignored. The potential users of many of the NTFPs have not being well documented in Kanchanpur districts despite their potential in poverty reduction and livelihood improvement amongst the indigenous people. The documentation of other uses of NTFPs is essential in the sense that it will provide choices and help the communities to improve their economic conditions by exploring more market values and potentialities. NTFPs play an important role in meeting the needs of rural communities, especially in the areas of food, medicine and poverty reduction, sustainable management of forest resources and livelihoods improvement (Marshall et al 2005). Besides medicinal plants the use of diverse groups of NTFPS is largely ignored by the Nepalese community and development organizations. It is therefore high time to explore and promote other NTFPs by not excluding medicinal plants. Sustainable collection, use and commercialization are the main drivers in the promotion of NTFPs for community development, poverty reduction and livelihood improvement and sustainable forest management.
In recent years, many international agencies, national government agencies have emphasized the importance of NTFPs to rural communities (WIDTECH 2002). NTFPs are also increasingly seen as a potential avenue for forest conservation because their production is less damaging to ecosystems and wildlife than is the timber industry (WIDTECH 2001). In many parts of the world, non-timber forest provide off farm employment to a large part of the rural population and account for a large share of household income. Charlie et al (2004) looked into the role and importance of NTFPs I n daily lives of rural people in South Africa and discovered that more than 85% households used products such as wild spinaches, fuel wood, wooden utensils, edible fruits etc. Also, they reported that more than half of the households investigated made use of edible insects, wood for construction, bush meat, wild honey and reeds for weaving. In Nigeria, food security of

rural dwellers is improved by growing trees in the home gardens and on farms (Olabode, 2003). Leaves, rattan, honey, sap, gums from the small scale industries are important sources of income (Okafor et al, 1994). Important tools for addressing poverty issues for the marginalized, forest dependent communities, by contributing to livelihoods, including food security, income, health and sustainable human development (Ahenkan and Boon, 2008).

Women are more dependent on nature by virtue of sexual division of labour. This is due to the increasing population relying directly on the forest (Olabode, 2003). About 80% of the population of the developing world depends on NTFPs for their primary health and nutritional needs (FAO 1996). In spite of their contribution and potential values, most NTFPs remain grouped as minor products of the forest. Although, the economic importance of the products cannot be overlooked. it is thus a necessity to give this product more attention in the forestry sector. In a bid to understand contribution of NTFPs to poverty reduction and food security, this study sets out to investigate how women take part in the fight against poverty and food insecurity through consumption of non-timber forest products by providing answers to the following research question;

1. what are the socio-economic characteristics of women in the study area?
2. what is the level of consumption of NTFPs in the study area?
3. How do women contribute to household food supply through utilization of NTFPs?
4. what is the household food security level through the utilization of NTFPs in the study area?

Objectives of the study

The general objective of the study is to assess women contribution to households' food security through utilization of non-timber forest products.

The specific objectives of this study are to;

1. examine the socio-economic characteristics of women in the study area.
2. examine the level of consumption of NTFPs in the study area.
3. examine women contribute to household food supply through utilization of NTFPs.
4. examine household food security level through the utilization of NTFPs.

Hypothesis of the study

Ho; there is no significant relationship between the socio-economic characteristics of women and their households' food security level.

METHODOLOGY

Area of the study

The study was conducted in Saki and Ogbomoso agricultural zones of Oyo State. Saki zone include six local government areas namely; Saki west local government (278,002), Saki east (110,223) local government, Atisbo (110,792), Irepo (112,553), Oorelope (100,815) and Olorunsogo local

government (81,759) areas. The geographical location of Saki agricultural zone is on latitude 70N and 190N of the equator and between 2.5E and 5E of the prime meridian (Map of Oyo state, 1998).

Population of the study

The population for the study comprise all the smallholders rural women involved in NTFPs in Saki and Ogbomoso agricultural zones of Oyo state.

Sampling procedure and sample size

A multistage sampling technique was adopted to select respondents for this study. The first stage involved purposive selection of Saki and Ogbomoso agricultural zones of Oyo State based on their high level of utilization of NTFPs. The second stage involved random selection of four (4) local government areas from each of the selected Agricultural zones. Saki west, Saki east, Atisbo and Oorelope local government areas will be selected from Saki zone while Oriire and Ogbomoso local government areas was selected from Ogbomoso Agricultural zone.

The next stage involved random selection of forty percent (40%) of the total number of blocks in each of the selected local government areas. This implies that from Saki zone, six (6) blocks out of eleven (11) blocks were selected from both Saki east, Oorelope and Saki west while five (5) blocks out of ten (10) blocks in Atisbo local government area were selected. A total of twenty three (23) blocks were considered for this study. From Ogbomoso zone, Five (5) blocks out of ten (10) blocks in Oriire and six (6) blocks out of twelve blocks in Ogooluwa making a total of eight (8) blocks. Moreover, a village was randomly selected from each of the selected blocks. This implies that respondents for this study was drawn from the selected blocks. A list of small holders female rural dwellers were secured and a total of one hundred and nine (109) and sixty nine (69) respondents were proportionately sampled from the selected villages for this study from Saki and Ogbomoso agricultural zones respectively. This implies that two hundred and fourteen (214) respondents were considered for this study.

Method of Data Collection

The data for this study was obtained from primary source with the aid of a well-structured interview schedule.

Method of Data Analysis

The statistical analytical tools that was used for this study include descriptive and inferential statistics. The descriptive tools that was used include frequency distribution and percentage while the inferential used include hi-square and Pearson Product Moment Correlation (PPMC) to test the hypotheses of the study.

RESULT AND DISCUSSION

Age of the respondents

Table 1 shows the distribution of respondents by age. it was revealed that 2.8% of the respondents were about 30years, 22.8% were between 31-40years, 46% were between 41-50years, 21.8% were between 51-60years old. The mean age of the respondent was 47years. This implies that most of the respondents were still very active and can still contribute meaningfully to agricultural production thereby providing possibility of ensuring their households' food security. This means that agricultural production requires energetic, vibrant and dynamic work force for higher production.

Years of schooling

Table 2 shows the distribution of respondents by years of schooling. It was revealed that 19.1% did not have any years of schooling, 9.8% had between 1-6 years of schooling, 33.5% had between 7-12 years of schooling, 16.2% has 13-18years of schooling while 21.4% had above 18years of schooling. The mean years of schooling was 12years which implies that most of them had secondary school education. The high literacy level attained by the respondents could help boost the utilization of non-timber forest products and this could invariably improve their level of contribution to the households' food security level.

Household size

Table 3 shows the distribution of respondents by household size. it was revealed that 17.2% of the respondents had between 1-4members in their households, 50.2% had between 5-10members while 32.6% had between 11-15members in their households. The result of the finding therefore indicates that most households had an average of seven (7) members in their households. The large household size recorded depicts the true nature and characteristics of a typical farming households were family members are often depended on as a regular and reliable source of labour supply.

Farm size

Table 4 shows the distribution of the respondents by farm size. The result of the finding indicated that 16.7% of the respondents had about 5hectares of farm land, 48.8% had between 6-10 hectares of farm land, 18.1% had between 11-15 hectares while 16.5% had above 15hectares of farm land. The mean farm size of most of the respondents was found to be 11.06hectares. This farm size owned by most of the respondents was found to be small for an intensive commercial agriculture and this is a true reflection of problem of land tenure system in most part of the country.

Year of experience in farming

Table 5 showed the distribution of respondents by years of farming experience. it was revealed that 16.2% had between 1-10 years of farming experience, 14.9% had between 11-20 years of experience, 34.9% had between 21-30 years of farming experience while 34.0 % had above 30 years of farming experience. The mean years of farming experience was 23years which implies that most of them had longer years of experience in farming activities and this could help boost

their contribution to their household food and income supply through utilization of non-timer forest products in the study area.

Categorization of consumption level of NTFPs

Table 6 shows the distribution of respondents by categorization of consumption level of non-timber forest products. It was revealed that 16.7% of the respondents consumed the non-timber forest products at high level, 67.5% consumed non-timber forest products at moderate level while 15.8% consumed them at low level. The result of the finding therefore indicates that majority of the respondents consumed the products at moderate level. This may be due to the low level of awareness about the usefulness of the products.

Women contribution to households' food supply through the utilization of NTFPs

Table 7 shows the distribution of respondents by contribution to households' food supply through the utilization of NTFPs. the contributions by women through non-timber forest products include family nutrition (wms=4.93), household income (wms=4.83), households' medicinal purposes liftment (wms=4.73), are profitable (wms=4.72), useful for social and cultured purposes(wms 4.47, creates job opportunities (wms=4.65), serve as raw materials for industries(wms=4.26), improve soil fertility and prevent soil erosion(wms=3.86), does not cause health hazards to the society(wms=3.71), and are not expensive and easily accessible (wms 3.43). The result of the finding therefore revealed that women normally contribute to family nutrition through their involvement in non-timber forest products utilization.

Categories of households' food security

Table 8 shows the distribution of household by households' security level. The result of the analysis revealed that 21.9% of the households were highly food secured, 66.2% were moderately food secured while 21.9% of the households were food insecure. The results of the findings therefore indicates that most of the households were moderately food secured which implies that much is still needed to be done especially with the level of utilization of non-timber forest products in order to boost the income level of the households.

Relationship between socio-economic characteristics and household food security level

Table 9 shows the result of Pearson Product Moment Correlation between socio-economic characteristics and household food security level. The results of the analysis revealed that age (r=0.124*) and years of schooling (r=0.148*) were significantly related with household food security level. The household food security level was measured using Household Food Insecurity Access Scale (HFIAS) designed by FANTA unit of USAID. The access side stipulated that the lower the households' food insecurity score, the more food secure household become.

Based on the results of the finding, the higher age of the head of the household, the more food secure the household becomes. This depicts the facts that age is a good correlate experience which implies as a person increase in age there is likely for his/her to acquire more experiences especially in ensuring household food security which could involve exploration of multiple coping strategies.

Moreover, the duration of time that the household head spent in school was also found to correlate with the household food security level. it was revealed that the higher the years spent in school, the more food secure household becomes. This implies that well educated household heads is likely to have perfect understanding of cropping seasons, raining patterns, climate change effects and events the effects of government instability and such would have developed an appropriate copping strategies against each of the situations thereby making the household food secure at all time for instance, he/ she may decide to store up food especially during glut period and could sell parts during harsh time/scarcity.

Since there is significant relationship between dependent and independent variables, the null hypothesis is rejected while the alternate hypothesis is therefore accepted.

CONCLUSION

Based on the results of the findings, it is therefore concluded that women contribute to households' food security through utilization of non-timber forest products in the study area.

Recommendation

Based on the results of the finding, the following recommendations are necessary; more effort should also be made to create more awareness on the potentials in non-timber forest products utilization to further reduce poverty level in the study area, government and other stakeholders in agricultural development should intensify effort and give more support to the farmers in terms of financial, training, monitoring and other essential services in order to boost the level of production in the study area and more effort should be made to address the issue of poor labour supply in the study so as to reduce incidence of not able to carry out most of the farm activities and to aid timeliness in carrying out farm activities.

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Appendix

Table1: distribution of respondents by age

Age(years)	**Frequency**	**percentage**
≤30	6	2.8
31-40	49	22.8
41-50	99	46.0
51-60	47	21.9
Above 60	14	6.5
Total	**215**	**100**

Mean=46.85years
Source; field survey, 2020

Table2: distribution of respondents by years of schooling

Years of schooling	**frequency**	**Percentage**
0	41	19.1
1-6	21	9.8
7-12	72	33.5
13-18	35	16.2
Above 19	46	21.4
Total	215	100

Mean=11.6years
Source; field survey, 2020

Table3: distribution of respondents by household size

Household size	**frequency**	**Percentage**
1-4	37	17.2
5-10	108	50.2
11-15	70	32.6
Total	215	100

Mean=7
Source; field survey, 2020

Table4: distribution of respondents by farm size

Farm size	**frequency**	**Percentage**
≤5	36	16.7
6-10	105	48.8
11-15	39	18.1
Above 15	35	16.3
Total	215	100

Mean=11.06 hectares
Source; field survey, 2020

Table5: distribution of respondents by years of experience in farming

Years of experience in farming	frequency	Percentage
1-10	35	16.2
11-20	32	14.9
21-30	75	34.9
Above 30	73	34.0
Total	215	100

Mean=23.14years
Source; field survey, 2020

Table6: categorization of consumption level of non-timber forest products

consumption level	frequency	Percentage
High	36	16.7
Medium	145	67.5
Low	34	15.8

Source; field survey, 2020

Table7: distribution of respondents by women contribution to household's food supply through the utilization of NTFPs

women contribution to household's food supply through the utilization of NTFPs	Strongly agree	Agree	Strongly disagree	Disagree	Undecided
NTFPs contribute to household income	180(83.7)	35(16.3)	0(0)	0(0)	0(0)
NTFPs contribute to family nutrition	200(93.0)	15(7.0)	0(0)	0(0)	0(0)
NTFPs are useful for social and cultural purposes	130(60.5)	75(34.9)	0(0)	0(0)	10(4.7)
NTFPs are useful for medicinal purposes	160(76.7)	47(21.9)	0(0)	0(0)	3(1.4)
NTFPs serve as raw materials in industries	15(7.0)	210(97.7)	0(0)	0(0)	0(0)
NTFPs improve soil fertility and prevent erosion	0(0)	200(93.0)	15(7.0)	0(0)	0(0)
NTFPs does not cause health hazard to the society	0(0)	184(85.6)	31(14.4)	0(0)	0(0)

NTFPs are not expensive and easily accessible	0(0)	154(71.6)	61(28.4)	0(0)	0(0)
NTFPs are profitable	154(71.6)	61(28.4)	0(0)	0(0)	0(0)
NTFPs create job opportunities	139(64.7)	76(35.3)	0(0)	0(0)	0(0)

Source; field survey, 2020

Table8: categorization of households' food security level

Households' food security level	**frequency**	**Percentage**
High(food secure)	47	21.9
Medium(moderately food secure)	121	56.2
Low(food secure)	47	21.9

Source; field survey, 2020

Table 9; summary of correlation between socio-economic characteristics and household food security level

Socio-economic characteristics	**R-value**	**p-value**	**remark**
Age	-0.124*	0.069	S
Years of schooling	-0.148**	0.031	S
Household size	0.029	0.675	NS
Farm size	0.010	0.884	NS
Years of farming experience	-0.054	0.427	NS

** Significant at 5%level
*significant at 10%level
S=Significant
NS= Not significant
Source; field survey, 2020