NTFP Utilization and its Impact on Poverty Reduction among Rural Women in Ondo State, Nigeria

ABSTRACT

Poverty among rural women in Nigeria is high and widespread. Exploitation of NTFPs possesses great potentials in reducing poverty among rural women in Nigeria. This is because NTFPs provide income that is significant to the income of rural women. This paper therefore examines the impact of NTFP utilization on poverty reduction among rural women in Ondo State, Nigeria. Five local government areas (LGAs) out of 18 LGAs in the study area were purposively selected. Four rural communities were randomly selected from each sampled LGA to make a total of 20 villages in the study area. 15 rural women were randomly selected in each sampled community to make a total of 300 respondents. Semi-structured questionnaire were used to get information on the income realized from NTFPs. The results showed that rural women utilize NTFPs for household consumption and to generate income. The results also showed that 22.3% of the respondents earned more than USD278 per annum from the exploitation of NTFPs. Chi- square tests ($p< 0.05$) shows that age of rural women has a significant association with the income earned from the exploitation of NTFPs. The results further showed that 73% of the respondents earned more than 50% of their income from the exploitation of NTFPs. Rural women are however faced with some problems in the utilization of NTFPs in the study area. These include insect attack, bad weather and poor roads. These problems can be solved through repair of rural roads, improved forestry extension and provision of boots to rural women.

UNDER PEER REVIEW

Keywords: Non Timber Forest Products (NTFPs), Utilization, Poverty reduction, Rural women, Rural households.

1. INTRODUCTION

Poverty is a state of lack or deprivation of basic necessities of life [1]. Poverty in Nigeria is very high with about 65% of the population categorized as poor [2]. In the same vein [3] noted that poverty in Nigeria is severe and wide spread, with the highest prevalence in the rural areas. They noted that the number of the rural poor is roughly twice that of the urban poor in Nigeria. According to [4] a vast majority of rural inhabitants in Nigeria suffer from adverse environment, unemployment, poverty and disease. However as efforts are geared towards reducing poverty worldwide (especially in the rural areas) one question that needs to be answered is; how has humanity managed to be enmeshed with such level of poverty [5]. In this era of global abundance it is disheartening that the world has continued to tolerate the daily hunger and deprivation of more than 800 million people [6].

The incidence of poverty among rural women in Nigeria is particularly more worrisome. This is because there has been an increasing incidence of poverty among rural women in the country. For instance, in 1980 the percentage rate of women that are poor in Nigeria was 26.9% and by 1996 it has increased to 58.5% [7]. Majority of these poor women reside in the rural areas of the country and lack access to productive resources. [8] noted that about 80% of the rural women in Nigeria can be classified as poor with the average household income from all sources being less than US$ 1 per person per day. [9] that evidence from different parts of Nigeria has shown that rural women suffer from poverty and have long duration of poverty. Many of them have been unjustifiably maligned, neglected and frustrated. This has a devastating effect on their lives and wellbeing as well as the

UNDER PEER REVIEW

welfare of their households. For millions of Nigeria's rural women, life is neither satisfying nor decent. Interlocking problems of poor income, illiteracy and poor health compounded by unfriendly social customs and tenurial rights, make it difficult for rural women to break free from a life of poverty. What the rural people need is to be empowered economically by increasing their income earning potentials. The utilization of NTFPs by rural women possesses great potential to the solution of rural poverty and hunger among rural women and by extension in rural households. Exploitation of NTFPs has been playing significant roles in the livelihoods of many rural households not only in Nigeria but all over Africa. According to [10] NTFPs provide small but significant sources of income, particularly for women and for families that do not have access to agricultural markets. NTFPs also provide critical supplies of food during periods when agricultural crops failures are otherwise scarce. NTFPs are so important that at a time NTFPs were seen as a possible 'magic bullet' to solve deforestation issues [10].

Rural women in the country possess great skills and are capable of converting NTFPs into simple utilitarian products which can earn them income both within rural and urban markets.

It therefore follows that the utilization of NTFPs by rural women in Nigeria should be studied properly with a view to examining its impact on poverty reduction among rural women. It is in view of this that this study seeks to identify common NTFPs utilized by rural women in Ondo state, Nigeria, examine the impact of NTFPs utilized by rural women on their income earnings in the study area and to identify problems they face in the utilization of NTFPs. This is because NTFPs are the forest treasure that sustains rural dwellers by providing income, foods and medicinal materials [11].

UNDER PEER REVIEW

1.1 Concept of NTFPs

Non-timber forest products (NTFPs) are biological resources other than timber, which are harvested from either natural or managed forests. Examples include fruits, nuts, oil seeds, latexes, resins, gums, medicinal plants, spices, wild life and wild life products. Others are dyes, ornamental plants, poles, raw materials such as bamboo and rattan [12]. [13] also defined NTFPs as all biological materials (other than industrial round wood, derived sound timber, wood chips, wood based panels and pulp) that may be extracted from natural ecosystem, managed plantations and be utilized within the household, be marketed or have social, cultural and religious significance. NTFPs are plants and plant materials used for food, fuel, storage fodder, and medicine etc.[14]. [15] maintained that among the diverse valuable non-timber resources of natural forest are edible and highly nutritious medicinal fruits, seeds, leaves, twigs and nuts. Others are bark, roots, rattans, gum, latex and dyes. Non-timber forest products (NTFPs) are biological resources of plant and animal origin, harvested from natural forests, manmade plantations, wooded land, farmlands, and trees outside forests and or domesticated. NTFPs are highly valued either for their leaves, roots, barks or fruits. They are the forest treasure that sustains rural dwellers by providing income, foods and medicinal materials. As a matter of fact majority of the rural poor all over Africa would have been showing obvious signs of malnutrition if not for the food provided by NTFPs to them inform of forest fruits and vegetables. NTFPs that serve as food help to supplement and complement the daily diet of the rural poor.

The benefits of NTFPs to man are enormous. It includes provision of employment, food, income, medicinal materials and fuel. [16] that the collection and processing of NTFPs provide major employment to the rural dwellers and contribute substantially to the nation's economy. The harvesting, marketing and consumption of NTFPs

UNDER PEER REVIEW

contribute to achieving the Millennium Development Goals (MDGS) by eradicating extreme poverty and hunger [17]. NTFPs provide protein, energy, vitamins and essentials minerals. Some NTFPs supplement staple foods and are consumed during seasonal food shortages when agricultural crop supplies dwindle. Non-timber forest products (NTFPs) especially leaves and nuts supplement rural diets by contributing to sauces that accompany carbohydrate staples. Some forest fruits are often consumed as snacks, as well as buffers food sources during emergency periods [18]. NTFPs provide medicinal materials to many people in Africa especially the rural dwellers. [19] that over 80% of Africa's rural communities extensively depend on herbal medicines for their primary health care. Rural dwellers because of inadequate access to modern health care and financial involvement, subscribe to herbal medicine, which is readily made from plant materials present in their localities at low or no costs.

2. METHODOLOGY

2.1 The study area

Ondo State lies between latitude 5°45[1] and 8°15[1]N and longitude 4°25[1] and 6°5[1]E. Its land area is about 15,823 square kilometer. Edo and Delta states bound Ondo on the east, on the west by Ogun and Osun states, on the North by Ekiti and Kogi states and to the South by the Bight of Benin and the Atlantic Ocean (fig.1).

2.2 Vegetation

Based on Keays [20] classification of Nigerian vegetation, three distinct vegetation belts can be identified in the state. These are mangrove in the south, lowland rain forest in the central and derived savanna in the north. Mangrove forest is dominated by the mangrove tree species. These are *Rhizophora racemosa, Rhizophora*

UNDER PEER REVIEW

mangle, and *Rhizophora harrisonii.* The lowland rainforest consists of tree species such as *Milicia exelsa*, *Antiaris africana*, *Terminalia superba* and *Triplochiton scleroxylon*. The derived savanna consists of tree species like *Anogeissus leiocarpus, Nauclea latifolia, Dialum guineense,* and *Vitex doniana.*

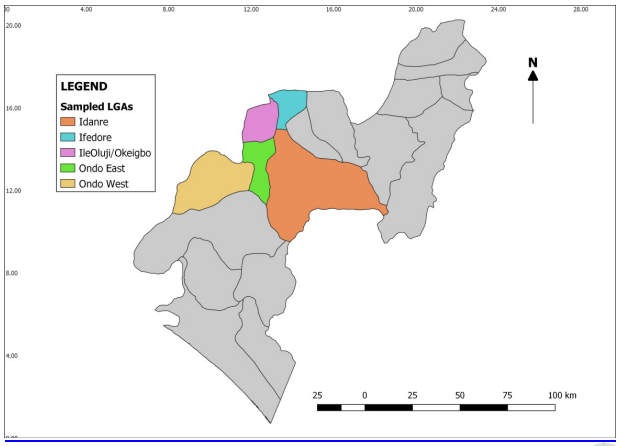

Fig. 1 Map of Ondo State showing sampled LGAs

2.3 Method of Data Collection

Simple random sampling technique was used to select five local government areas out of the eighteen local government areas in the state (28% sampling intensity). Four rural communities were then randomly selected from a compiled list of rural communities in each of the sampled local government areas to make a total of twenty communities (fig. 2 and Table 1). 15 adult rural women were then randomly selected in each of the sampled communities to make a total of 300 respondents. Semi-structured questionnaires were then used to get information concerning how the use of NTFPs has helped to reduce poverty among women.

In addition two (2) key informants were purposefully selected in each sampled community to get information on the utilization of NTFPs by women in that community.

UNDER PEER REVIEW

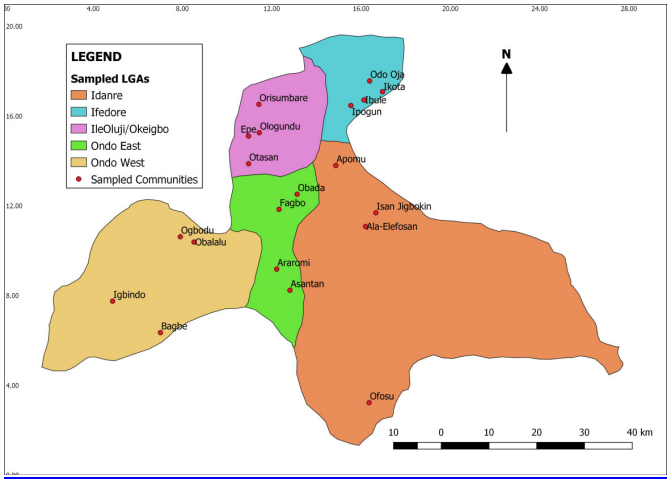

Fig. 2: Sampled LGAs showing sampled Communities

2.4 Method of Data Analysis

Descriptive analysis was used to analyze data obtained for this study. This is in form of bar charts, frequency and percentage distribution Tables. In addition, Chi square was used to test the stated hypotheses.

2.5 Hypotheses Tested

1. Ho- there is no significant association between income earned by rural women from the utilization of NTFPs and their educational qualification in the study area.
2. Ho- The income earned by rural women from the utilization of NTFPs is independent of their age in the study area.

Table 1: List of sampled communities in the study area

LGA	COMMUNITY	LATITUDE	LONGITUDE
Ondo East	Obada	7.15865	4.98800
	Fagbo	7.13218	4.95611
	Araromi	7.02724	4.95196
	Asantan Oja	6.99026	4.97532
Ifedore	Ibule,	7.32393	5.10571
	Ikota	7.33847	5.13847

UNDER PEER REVIEW

	Ipogun	7.31425	5.08277
	Odo Oja	7.35730	5.11576
Ondo West	Obalalu	7.07479	4.80628
	Ogbodu	7.08409	4.78211
	Igbindo	6.97123	4.66271
	Bagbe	6.91603	4.74708
Ileoluji/ Okeigbo	Otasan	7.21215	4.90244
	Orisumbare	7.31628	4.92051
	Ologundu	7.26651	4.92123
Idanre	Epe	7.26059	4.90229
	Apomu	7.20903	5.05619
	Ofosu	6.79321	5.11496
	Isan Jigbokin	7.12610	5.12671
	Ala- Elefosan	7.10217	5.10872

3. RESULTS AND DISCUSSION

3.1 Socio- economic characteristics of the respondents

Table 2 shows that majority (51, 2%) of the respondents are within the age range of 40 -45 years. At this age range majority of the respondents are still very active and can go about their livelihood activities without any difficulty. Table 2 also shows that many of the respondents did not have formal education of had only primary education. 35% and 47% of the respondents in Ondo East LGA of the study area had no formal education and primary education respectively. In Ifedore LGA 37% and 54% of the respondents have no formal education and primary education respectively. In Ile Oluji/Okeigbo LGA only 20% and 2% of the respondents had secondary and tertiary education respectively. This proves the fact that majority of rural women in Nigeria have little or no education. [21] that the level of illiteracy among rural women in Nigeria is very high. This is not a surprise as studies have shown that all over Africa the level of illiteracy among rural women is high. In Nigeria differences exist between enrollment of males and females in all levels of education.

UNDER PEER REVIEW

In addition, the dropout rate of girls is higher than boys [22]. The high level of illiteracy among rural women in Nigeria has a serious drawback on the development of rural women themselves, on their households and on the general rural development. [23] that education plays a very important role in the development of any society. He stated further that there is a positive relationship between the average level of education and the degree of development. With high illiteracy level women lack access to information and new technology. It is therefore difficult for them to adopt new innovations that can bring development to them and their households. In today's globalized world, literacy has become essential to collective advancement. Not only are those who are not literate cut-off from their opportunities for advancement, but the society as a whole is also deprived of the potential contribution that these individuals can make to the good of all [24]. It is commonly accepted that the gains of development cannot reach the general population until basic education and literacy are provided to all, particularly women [24].

Table 2: Socio- economic characteristics of respondents in the study area

Socio-economic characteristics	Ondo East		Ifedore		Ondo West		Ile Oluji/Okeigbo		Idanre	
	N	%	N	%	N	%	N	%	N	%
Age of respondents										
< 30 years	5	8	3	5	7	12	0	0	6	10
30 – 40 years	8	13	16	27	12	20	20	33	10	17
41 -50 years	34	57	30	50	23	38	38	63	29	48
51 -60 years	9	15	10	17	13	22	2	3	13	22
Above 60 years	4	7	1	2	5	8	0	0	1	2
Education										
No formal	21	35	22		17	28	19	32	26	43

UNDER PEER REVIEW

education			37							
Primary education	28	47	32		23	38	28	47	21	35
Secondary education	11	18	54 6		19	32	12	20	13	22
Tertiary education	0	0	10 0	0	1	2	1	2	0	0
Income/year (USD)										
<165	22	37	29		32	53	23	38	20	33
165-222	21	35	48 15		18	30	20	33	18	30
223- 277	12	20	25 14		6	10	11	18	16	27
278- 333	5	8	23 2	3	3	5	6	10	5	8
>333	0	0	0	0	1	2	0	0	1	2

Source: Field Survey, 2018

3.2 Common NTFPs Utilized by Rural Women in the Study area

Table 3 shows that common NTFPs utilized by rural women in the study area include fuel wood, forest vegetables, forest fruits especially *Chrysophyllum albidum* and *Parkia biglobosa*, wrapping leaves, honey, snails, mushrooms and medicinal herbs. Majority of the respondents utilized fuel wood in the study area. 88%, 82% and 93% of the respondents in Ifedore, Ondo West and Ileoluji/ Oke igbo LGAs respectively utilized fuel wood in the study area. This is not a surprise as fuel wood as been identified as the dominant fuel use for cooking not only in Nigeria but all over Africa. As noted by [25] the contribution of forest and tree resources to household energy supply is high in Africa and will remain so for the foreseeable future. This is because nobody has yet found an alternative to firewood (or charcoal its derivative) as the source of household energy for the rural household in Africa.

Table 3 also shows that 28% and 32% of the respondents in Ondo east and Ifedore LGAs respectively utilize forest vegetables as food. Most especially they utilize the

UNDER PEER REVIEW

leaves of species such as *Ocimum gratissimum, Dialum guineense, Vernonia amygadalna* and *Myrianthus arboreus* as vegetables. [25] that through trial and error over generations, African societies have discovered and utilized myriad plant species whose leaves can be used for food. The leaves of these plant species contribute to the richness of diets, hence reducing various dietary deficiencies. Worthy of note are the leaves of *Adansonia digitata, Ocimum gratissimum* and *Vernonia amygdalina* which are widely used as vegetables by rural dwellers in Nigeria [11].

Twelve and 15% of the respondents in Ondo east and Idanre LGAs respectively utilized plant leaves as wrapping leaves. Most especially the respondents utilize the leaves of *Thaumatoccoccus danielli* as wrapping leaves to wrap food items like pounded yam, 'Eba' 'amala' and 'moinmoin'. 12 and 17% of the respondents utilized NTFPs medicinal purpose in Ifedore LGA and Ileoluji / Okeigbo LGA respectively. [26] that rural women are known to play prominent role in the use of medicinal plants among rural households in Nigeria and all over Africa. This is because in Africa rural women have always had a close relationship with the forest. [27] that rural women are often referred to as the 'real forest workers' because of the vast relationships between them and the forest environment. This close relationship has provided them with the basis on how trees, tree parts and other plants can be collected and used for medicinal purposes. [9] that rural women in Nigeria as a result of their close relationship with the forests provide medicinal materials for the use of their households. They went further to state that the close relationship between rural women and the forest enables them to know the different plant plants and their medicinal values. Rural women through their access to tree barks, tree

UNDER PEER REVIEW

leaves and herbs provide medicinal materials to their households which enable them to be in a state of good health.

45% of the respondents in Idanre LGA utilized snails as food. 30% of the respondents in Ifedore LGA utilized mushrooms as food. [28] that snail meat serves as a ready source of meat to the rural communities in Nigeria where majority cannot afford the high cost of cow meat. Rural women easily collect snail on the forest floor in the study area.

Mushrooms also serve as meat substitute to most rural households. The mushrooms are collected on the forest floor by women and children in the study area.

Table 3: Common NTFPs utilized by rural women in the Study Area

	Ondo East		Ifedore		Ondo West		Ile Oluji/oke igbo		Idanre	
NTFPs Utilized	F	%	F	%	F	%	F	%	F	%
Fuel wood	50	83	53	88	49	82	56	93	37	62
Chrysophyllum albidum	6	10	7	12	5	8	10	17	9	15
Forest Vegetables	17	28	19	32	14	23	27	45	13	22
Medicinal Plants	6	10	7	12	5	8	10	17	19	32
Locust bean	17	28	9	15	23	38	14	23	19	32
wrapping Leaves	7	12	2	3	4	7	3	5	9	15
Honey	16	27	9	15	7	12	13	22	15	25
Snails	10	17	13	22	5	8	11	18	27	45
Mushroom	3	5	18	30	5	8	7	12	6	10

Source: Field Survey, 2018.

3.3 Impact of NTFPs utilization on income earned by rural women in the Study Area

Table 4 shows that in Ifedore and Idanre LGAs 80% and 83% of the respondents respectively earned less than USD 223 annually from the utilization of NTFPs in the

UNDER PEER REVIEW

study area. Only 10% and 2% of the respondents in Ondo East and Ileoluji/Okeigbo LGAs respectively earned more than USD 278 per annum from the utilization of NTFPs. In Ondo west LGA 13% of the respondents earned between USD 222 – USD 278 annually from the utilization of NTFPs in the study area. From the foregoing it therefore follows that rural women depend so much on NTFPs for the supply of income, fuel, food and other necessities of life.[11] noted that NTFPs have great potentials in providing income to many people especially the rural dwellers and some urban dwellers not only in Nigeria but all over Africa. [9] further that rural women in north central Nigeria earned a reasonable income from the sale of forest fruits which is an important NTFP in the area. [29] and [30] noted that though NTFPs may not be the most important income generating products for local people living close to the forests, they contribute significantly to household income, food security, and household health care as well as, provision of multiple social and cultural values . [31] noted that exploitation of NTFPs plays an important role for the rural poor as gap filler and source of income in situations where alternative livelihood activities are scarce. Chi- square test ($p > 0.05$) shows that educational qualification of respondents has no significant association with the income they earned from the utilization of NTFPs in the study area (hypothesis 1 of Table 5). This shows that educational qualification of rural women is not an important factor in the determination of income realized by rural women from the utilization of NTFPs in the study area. Though education is generally known to be very important in all spheres of life and it affects almost everything an individual does or achieve, it is not important in this regard probably because majority of the rural women in the study area either have no formal education or have only primary education. As such there

UNDER PEER REVIEW

is no significant association between educational qualification of rural women and the income they earned from the utilization of NTFPs in the study area. In addition chi- square test ($p<0.05$) shows that there is a significant association between age of respondents and the income they earned from the utilization of NTFPs in the study area (hypothesis 2 of Table 5). This shows that the age of rural women is an important determinant in the amount of income realized by rural women from the utilization of NTFPs in the study area. The reason for this is because most rural women are involved in the exploitation of NTFPs directly on the field (i.e. in the forest). As such younger rural women have more energy to exploit more NTFPs (which they sell) than older rural women. They therefore earn more money from the NTFPs they have exploited than the older women. As such age has a significant association with the income rural women earned from the utilization of NTFPs in the study area.

Table 6 shows that 12% and 17% of the respondents earned less than 40% of their income from NTFPs in Ondo East and Ondo West LGAs respectively. Majority of the respondents in the study area earned more than 50% of their income from the utilization of NTFPs. As such in Ileoluji/Okeigbo LGA 76% of the respondents earned more than 50% of their income from the utilization of NTFPs. In Idanre LGA 64% of the respondents earned more than 50% of their income from the utilization of NTFPs and in Ifedore LGA 72% of the respondents earned more than 50% of their income from the utilization of NTFPs. This shows that the utilization of NTFPs contribute significantly to the income of rural women in the study area. [10] noted that NTFPs provide small but significant sources of income, particularly for women and for families that do not have access to agricultural markets. [32] also stated that

UNDER PEER REVIEW

researchers and some environmental NGO's and agencies noted that NTFPs offer additional economic benefits for local communities. It is therefore not a surprise that in the study area NTFPs had a significant impact on the income earnings of rural women.

Table 4: Annual Income realized by respondents from the utilization of NTFPs in the study area

Income (USD)	Ondo East		Ifedore		Ondo West		Ile oluji/oke igbo		Idanre	
	n	%	n	%	n	%	n	%	n	%
<165	24	40	27	45	26	43	28	47	27	45
165-222	20	33	21	35	25	42	22	37	23	38
223- 277	10	17	7	12	8	13	9	15	6	10
278- 333	5	8	4	7	1	2	1	2	3	5
>333	1	2	1	2	0	0	0	0	1	2

Source: Field Survey, 2018.

Table 5: Chi-square values of hypotheses tested

Hypotheses	χ2 cal.	χ2 tab	DF	Remark
1.Association between income earned by rural women from the utilization of NTFPs and their educational qualification in the study area.	17.18	21.00	12	Not significant
2.Association between income earned by rural women from the utilization of NTFPs and age of respondents in the study area	99.69	23.70	16	significant

Table 6: Proportion of respondent's income derived from NTFPs utilization in the Study area

Proportion	Ondo East	Ifedore	Ondo	Ile Oluji/Oke	Idanre

UNDER PEER REVIEW

					West		igbo			
	n	%	n	%	n	%	n	%	n	%
<40%	7	12	5	8	10	17	4	7	3	5
40-50%	11	18	12	20	20	33	10	17	18	31
51-60%	29	48	28	47	22	37	32	53	26	43
61-70%	12	20	13	22	7	12	14	23	11	18
>70%	1	2	2	3	1	2	0	0	2	3

Source: Field Survey, 2018.

3.4 Problems faced by Rural Women in the Utilization of NTFPs in the Study area

Table 7 shows that 12 and 8% of the respondents in Ondo East and Ifedore LGAs respectively faced the danger of snake bite or insect attack during the utilization of NTFPs. These are the respondents that exploit NTFPs directly from the forest. They are exposed to the danger of snake bite or attack from bees and ants. 31% of the respondents in Idanre LGA are faced with the problem of bad weather during the utilization of NTFPs. Bad weather is a problem because many people find it difficult to exploit NTFPs when the sun is overhead and the temperature is very high. It is difficult to exploit NTFPs under the scorching sun. In the same vein it is also difficult to harvest NTFPs when it is raining heavily. As such high scorching sun and heavy rain are seen as bad weather and is a problem to the utilization of NTFPs.

47% and 53% of the respondents in Ifedore and Ileoluji/ Okeigbo LGAs respectively are faced with the problem of poor road network. Poor rural road is really a problem for the utilization of NTFPs in the study area. This is because it is necessary to transport NTFPs from the point of exploitation (forest site) to the point where they

UNDER PEER REVIEW

will be transformed into useful products. As a result of poor rural road network transporting NTFPs from point of exploitation to the point of utilization often involves huge cost. This is a problem because it often reduces the profit margin that can be realized from the sale of NTFPs. 12% of the respondents in Ondo West LGA stated the problem they face in the utilization of NTFPs is too much of stress during collection. This is a problem because collecting some NTFPs can be highly tasking and involving. The stress is occasioned by the fact that there is increasing scarcity and seasonality of NTFPs in many places in Nigeria. It takes deliberate effort of searching and trekking before a reasonable quantity of some NTFPs can be exploited. For instance exploiting NTFPs like medicinal plants, snails and mushrooms are not only seasonal there scarcity have been noticed in many places in Nigeria. [11] noted that long distance covered in search of NTFPs, increasing scarcity of many NTFPs, bad roads and seasonality of NTFPs have been the major problems that have plagued the utilization of NTFPs in Nigeria. [33] also noted that NTFPs market in Ghana is highly characterized by seasonality. This shows that seasonality of NTFPs is a problem that cuts across the West African sub region.

Two and 3% of the respondents in Ondo East and Idanre LGAs respectively stated that the problem they face in the utilization of NTFPs is poor market pricing of NTFPs. Poor market pricing of NTFPs is a problem because the market price of a product will go a long way in determining the level of profit that can be realized for a product. When the market price of an NTFP is low it becomes a problem to those that are involved in the utilization because they will realize they will make little or no gain. As such they are discouraged.

UNDER PEER REVIEW

Table7: Problems faced by Rural Women in the Utilization of NTFPs in the Study area

	Ondo East		Ifedore		Ondo West		Ile oluji/oke igbo		Idanre	
Problems	n	%	n	%	n	%	n	%	n	%
Danger of snake bite or Insect attack	7	12	5	8	10	17	4	7	3	5
Bad weather	11	18	12	20	20	33	10	17	18	31
Poor road network	29	48	28	47	22	37	32	53	26	43
Too much stress during collection	12	20	13	22	7	12	14	23	11	18
Poor market pricing of NTFPs	1	2	2	3	1	2	0	0	2	3

Source: Field Survey, 2018.

4. CONCLUSION

This study has shown that common NTFPs utilized by rural women in the study area include fuel wood, forest vegetables, forest fruits, wrapping leaves, honey, snails, mushrooms and medicinal herbs. Majority of rural women in the study area earned reasonable income from the utilization of NTFPs. As such the utilization of NTFPs provided additional economic benefits to many rural women in the study area. Majority of the respondents in the study area earned more than 50% of their income from the utilization of NTFPs. Many rural women are however faced with some problems in the utilization of NTFPs in the study area. These problems include danger of snake bite or attack from bees and ants, bad weather,

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UNDER PEER REVIEW

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