Original Research Article

CONTRIBUTION OF ODOBA FOREST RESERVE TO LIVELIHOOD OF THE PEOPLE IN THE SURROUNDING VILLAGES, IN OGBADIBO LGA, BENUE STATE, NIGERIA

Abstract

The study was conducted to assess the contribution of Odoba forest reserve to rural livelihoods of the surrounding villages in Ogbadibo Local Government Area of Benue State, Nigeria. Three hundred and four pre – tested semi-structured questionnaire were administered to households in four villages. Data collected were analyzed using descriptive and inferential statistics. Fifteen different wood and non-wood products were collected by the respondents from the forest reserve with fuel wood products being the product mostly collected from the reserve (65.5%) followed by water supply from the streams in the forest reserve (59%). Others were edible vegetable (56.6%), folder (53.6%), mush room (53.3%), medicinal herbs (52.6%) and timber (50.3%). The result also shows that forest resources contributed very high to the livelihood of the people in the areas of food for household consumption, additional income, medicinal values, water supply and trading of forest products. Furthermore, the study results showed that the most need met by the people from the sale of forest products is feeding of households (19.4%) and investing in farming activities (13.8%). The study recommends modified Taungya system in the reserve to engage households in forest regeneration efforts as well as the sharing of benefits from such efforts for sustainable utilization of the reserve.

KEY WORDS: Odoba forest reserve, forest products, sustainable livelihood, villages, Benue State

1. INTRODUCTION

Forest resources are a key component of the natural resource base of any community, region or country, and they play a fundamental role in the socio-economic well-being of the people of those communities, particularly where large rural population depend on natural resources for their livelihoods. Forests are major source of livelihood, providing numerous benefits to human beings. These benefits may be direct (i.e provision of food and timber products) or indirect through their services and contributions to production process (i.e .protection of agricultural land), they may also be intangible (cultural values) (Popoola, 2002)[1]. Forestry sector which is one of the main pivots on which the nation's welfare is built, serves as resource base for many forest industries; providing one of the highest revenue and employment generating sectors. Abu and Adebisi (2002)[2] stated that the traditional uses of forests are basically for income generation, environmental protection and socio-cultural values. Agbogidi and Eshegbeyi (2008)[3] also maintained that forests play an important role in contributing to carbon sequestration and other global ecological services.

According to World Commission on Forests and Sustainable Development (WCFSD, 1998)[4], fuelwood and charcoal make up 56% of global wood production and approximately 90% of this is produced in developing countries. Firewood is the most important source of energy for developing countries and the only source of energy for most of the world's rural areas (Roper and Roberts, 1999[5]; IEA, 2002[6]).

Unarguably, forest and forest trees are sources of a variety of foods that supplement and complement what is obtained from agriculture. According to Bryon and Arnold (1997)[7], majority of rural households in developing countries, and a large proportion of urban households, depends on plant and animal products of forests to meet part of their nutritional needs.

Agbogidi and Okonta (2003)[8] stated that a large proportion of rural population earn their livelihood from the extraction and sales of forest products thereby improving the quality of life and standard of living of rural population living near forest lands. Millions of people throughout the world make extensive use of biological products from the wild (Koziell and Saunders (2001)[9]; Lawes *et al.,* (2004)[10]).

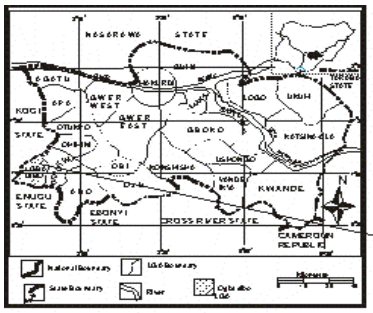
Literatures by scholars in different localities of the world on the contribution of forest reserves to the livelihood of rural communities around such reserves abound. For example, Piya et al., (2011)[11] have written on the collection of forest products for livelihood in Nepal. Others such as Angelsen and Wunder,

(2013)[12], Wunder *et al.,* (2014)[13], Angelsen *et al.,* (2014)[14], Sunderland (2014)[15], Belcher *et al.,* (2015)[16] in India have reported on foods collected, income generation and environmental benefits of the forest resources amongst other. In Africa, Langat et al., (2016)[17] have reported on the role of Forest Resources of East Mau Ecosystem, Kenya to Local Livelihoods. Others scholars as Shackleton and Shackleton (2004)[18], Walelign (2013)[19], Kalinda and Bwalya (2014)[20], Ofoegbu *et al.,* (2017)[21] and Garekae, (2017)[22] have also written on the importance, utilization of forest products and services in rural livelihood and security. In Nigeria, Olujobi, (2012)[23], Adeniyi, (2015)[24], Usman *et al.,* (2016)[25] have also written on roles of forest resources in sustaining rural livelihoods. Odoba forest reserve was established in 1969 for pole production. The dominant tree species found in the reserve are teak (*Tectona grandis).* Since the establishment of the reserve there is no available literature on its contribution to livelihoods of the rural communities. Hence, this research was conducted to provide information on the communities surrounding the reserve, the contribution of the reserve to the livelihood of the people.

2. METHODOLOGY

2.1 Study Area

The study area was conducted at Odoba forest reserve in Otukpa district of Ogbadibo Local Government Area (LGA). It is located between latitude $7^{o}\ 08^{/}\ 34^{//} – 7^{o}\ 10^{/}\ 45^{//}$ N and longitude $7^{o}\ 49^{/}\ 16^{//}$ -$7^{o}\ 51^{/}\ 29^{//}$ E, with an area coverage of 584ha. Odoba forest reserve is adjoined by four villages, Ogonukwu, Epaiegbo, Eloga, and Odoba (Figure 1). It was established in 1969 for pole production.The dominant tree species found in the reserve is teak (*Tectonagrandis).*



Map of Benue State Showing Ogbadibo LGA

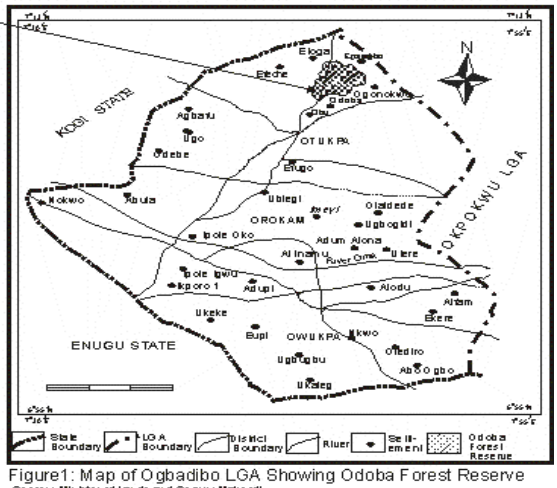


Figure1: Map of Ogbadibo LGA Showing Odoba Forest Reserve
Source: Ministry of Lands and Survey Makurdi

2.2. Sampling Size and Sampling Techniques

The 2006 population figure of adjoining villages was projected to 2016 using 2.8% growth rate as expressed by George et al., (2004)[26].

$P_t = P_o\ (1+r)^t$

Where:

P_t = Projected population figure for 2016 for any community

P_o = Population for any known years of a community

r = Rate of growth

t = Future time in years

Taro-Yamene (1967)[27] formula at 90% confidence interval was then used for determination of sample size of 325 respondents (Table 1).

$n = N/1+N(e)^2$

Where:

n = Sample size

N = Population of a community

1 = the constant of the equation

e = precision level confidence level 90%

The villages were purposely selected due to their proximity to the forest reserve boundary. In each selected villages, households were systematically selected. The head of each household was purposively selected for interview. Three hundred and twenty five questionnaires were distributed for interview out which three hundred and four were retrieved and data collated for analysis.

Table 1 Determination of Sample Size for the Study

S/No	Adjoining Communities	2006 Population Figures	2016 projected figures	Number of Households	House hold Sample Size
1	Odoba	1734	3469	631	118
2	Ogonukwu	954	1908	347	64
3	Epaeigbo	1409	2818	512	96
4	Eloga	689	1379	251	47
Total	-	4786	9574	1741	325

Source: National Population Commission, 2006 projected to 2016 using 2.8 % growth rate.

- sample size (n) = 325

2.3. Data Collection

Pre-tested semi-structured questionnaire which sought questions on socio-economic characteristic of respondents in the study area, types of forest products collected from the forest reserve, contribution of the forest reserve to the livelihood of the people and needs met from proceeds of the reserve were administered to the respondents. Administration of the questionnaire was done with aid of research assistants.

2.4. Data Analysis

Both descriptive and quantitative techniques were employed in the analysis of data obtained. The descriptive techniques used were frequency, percentages, mean and tabular presentation of the results.

Five points Likert weighted scale rating as used by Dagba (2017)[28] was adopted to measure the contribution of the forest reserve to the livelihood of the people in the study area. The weight scale was derived from the following values. Very high (VH) = 5, High (H) = 4, Moderate (M) = 3, Low (L) = 2, Very Low (VL) = 1, contribution of the reserve.

Comment [a1]: Precision level/confidence level. Either of the two suffice.

Comment [a2]: 2006 population figures projected to 2016 using 2.8% growth rate with this formula above will not give you these values 3469, 1908, etc if you have a sound knowledge of simple statistic. These computation needs revisiting.

Comment [a3]: Ditto

Comment [a4]: Ditto

Comment [a5]: Ditto

Comment [a6]: Invariably, this makes your sample size erroneous .

The Mean Score (MS) of the respondents is expressed as $MS = \frac{\sum f}{n}$

Where :

f = Sumation of the five point rating scale and

n = Number of points

Therefore, for a five point Likert scale, MS is expressed as :

$$MS = \frac{1 + 2 + 3 + 4 + 5}{5}$$

$$MS = 3.0$$

The Likert Weighted Score (WS) is expressed as : $WS = \frac{\sum_{i=1}^{n} fxi}{}$

The Likert Weighted Mean Score (WMS) is expressed as : $WMS = \frac{\sum_{i=1}^{n} fxi}{N}$

Where:

f = frequency of respondent

x = Likert scale point

N= Total Number of respondents

Using the interval scale of 0.05, the Upper Limit (UL) cut-off is MS+0.05 (3.0+0.05 = 3.05). The Lower Limit (LL) cut-off is MS - 0.05 (3.0-0.05 = 2.95). Based on these two extreme limits any variable with WMS below 2.95 (WMS<2.95) is considered 'Low'. Variable with MWS between 2.95 and 3.05, 'Moderate' any variable MWS greater than 3.05 (MWS>3.05), 'High'.

3. RESULTS

The result on socio economic characteristic of respondents in the study area are presented in Table 2: Sex of respondents showed that 54% and 46% of the respondents were male and female respectively. Age distribution and marital status showed that 84.2% of the respondents were above 30 years with the mean age of 42 years while 62% of the respondents were married. Educational status showed that 66% had formal education while 34% had non formal education. The result on household size and educational background showed that majority of the respondents 58.9% had household size of 6 members and above with a mean household size of 7 persons. The result on occupation and years of residence showed that 31% of the respondents were farmers while 43% of the respondents had lived in the area above 30 years with a mean years of residence of 21 years. Respondents that generated annual income above

N50,000.00 per annum were 21.4% from sales of the forest resources collected while information on years spent on forest resources harvesting showed that 33.9% of the respondents have harvested forest resources from the reserve for over 30 years.

3.1. Types of Forest Resources Collected from the Reserve

Types of forest resources collected from the reserve are presented in Table 3. The result indicated that fifteen different wood and non-wood products were collected by the respondents from the forest reserve. Fuel wood (65.5%) was the resource that was most collected from the reserve and was ranked first. This was followed by water supply (59%) from the streams in the forest reserve, edible vegetable (56.6%), folder (53.6%), Mushrooms ((53.3%), medicinal herbs (52.6%) and timber (50.3%). These products were ranked second, third, fourth, fifth, sixth and seventh respectively. Other resources collected from reserve as reported by the respondents were Bush Meat (46.7%), Chewing stick (43.0%), Pole (40.5%), Honey (37.8%), Snail (27%), Caterpillar (25%), Cricket20.4%) and Climbers (19%). Consequently, the resources were ranked eighth, ninth, tenth, eleventh, twelfth, thirteenth, fourteenth and fifteenth respectively.

Table 2: Socio economic Characteristics of Respondents in the Study Area

Characteristics	Category	F(N=304)	%
Sex			
	Male	165	54
	Female	139	46
Age (yrs)			
	20-30	48	15.8
	31-40	90	29.6
	41-50	60	19.7
	51-60	54	17.8
	61-70	32	10.5
	>70	20	6.6
Marital Status			
	Single	71	23
	Married	189	62
	Widow/widower	44	14
Educational Status	Non Formal	103	34
	Primary	80	26
	Secondary	69	23
	Tertiary	52	17
Household size	1-5	125	41.1
	6-10	123	40.5
	11-15	42	13.8
	16-20	11	3.6
	21-25	3	1
Occupation			
	Farming	93	31
	Civil Servant	69	23
	Farming/Civil servant	84	28
	Farming/Timber merchant	19	6
	Trading	37	12
Years of Residence			
	1-10	77	25
	11-20	96	32
	21-30	46	15
	31-40	48	16
	>40	37	12

N= No.. of Respondents

Table 2. Cont'd.

Characteristics	Category	F(N=304)	%
Annual income			
	41,000-50,000	64	21.1
	51,000-60,000	45	14.8
	61,000-70,000	14	4.6
	>71,000	6	2
Years of forest resources harvesting (yrs)	1-10	58	19.1
	11-20	64	21.1
	21-30	79	26
	31-40	61	21.1
	41-50	25	8.2
	51-60	14	4.6
	61 Above	3	1

N= No.. of Respondents

Table 3: Type of Forest Resources Collected from the Reserve

	Frequency of Respondents by Villages						
Resources Collected	**Odoba**	**Eloga**	**Epaiegbo**	**Ogonukwu**	**Total***	**%**	**Ranking**
Fuel wood	59	33	63	44	199	65.5	1
Water supply	53	26	62	37	178	59.0	2
Edible Vegetables	57	18	69	28	172	56.6	3
Folder	60	13	62	28	163	53.6	4
Mush Room	56	19	54	33	162	53.3	5
Medicinal Herbs	23	24	54	34	160	52.6	6
Timber	60	16	47	30	153	50.3	7
Bush Meat	54	23	41	24	142	46.7	8
Chewing stick	36	12	69	13	130	43.0	9
Pole	43	15	44	21	123	40.5	10
Honey	42	17	35	21	115	37.8	11
Snail	24	16	21	21	82	27.0	12
Caterpillar	25	19	19	13	76	25.0	13
Cricket	21	6	25	10	62	20.4	14
Climbers	23	7	20	9	59	19.4	15

*Multiple choice responses

3.2. Contribution of the Forest Reserve to the Livelihood of the People

The result on the contribution of forest reserve to the livelihood of the people is shown in Table 4. The result shows that the reserve contributed very high to the livelihood of the people in the areas of food resources (MWS =3.37 > 3.0), income (MWS =3.03 > 3.0), medicine (MWS =3.14 > 3.0) trade (MWS =3.03 > 3.0), water supply (MWS =3.78 > 3.0) and conducive environment (MWS = 3.08 > 3.08). However, the reserve contributed low to the livelihood of the people in the areas of employment (MWS =2.24 < 2.95) and recreation (MWS =2.56 < 2.95).

Comment [a7]: ≥3.00

Table 4. Contribution of the Forest Reserve to the Livelihood of the People

Contribution	VH	H	M	L	VL	WS	N	MWS	Decision
Food	56(280)	93(372)	89(267)	41(82)	25(25)	1026	304	3.37	High
Income	75(375)	40(160)	58(174)	82(164)	49(49)	922	304	3.03	High
Medicine	75(375)	46(184)	66(198)	78(156)	41(41)	954	304	3.14	High
Employ-Ment	18(90)	29(116)	68(204)	83(166)	106(106)	682	304	2.24	Low
Trade	56(280)	64(256)	72(216)	58(116)	54(54)	922	304	3.03	High
Recreation	69(345)	32(128)	25(75)	55(110)	123(123)	781	304	2.56	Low
Water	124(620)	71(284)	52(156)	31(62)	26(26)	1148	304	3.78	High
Conducive Environment	77(385)	39(156)	67(201)	73(146)	48(48)	936	304	3.08	High

Note: WS= Weighted Score, WMS= Weighted mean Score, VH = Very High, H = High, M = Moderate, L = Low and VL = Very Low. Figures outside brackets are frequency of responses and figures inside brackets are Likert weighted Scores of responses.

3.3. Respondents Needs being met from Proceeds from the Forest Reserve

The respondents' needs being met from proceeds from the forest reserve is presented in Table 5. The priority need that was met by the respondents was feeding of households from proceeds obtained from the reserve (19.4%) and was ranked first followed by reinvesting in farming activities (13.8%) which was ranked second. Other needs met by the respondents from proceeds obtained from the reserve are paying children school fees (13.7%), local saving (Bam) (12.3%), building houses (11.1%), raising capital for

other businesses (10.3%), marrying more wives (7.0%), paying medical bills (6.3%) and employment (6.1%). These needs were ranked third, fourth, fifth, sixth, seventh, eighth and nineth respectively.

Table 5: Needs met from Proceeds of the Forest Reserve

Needs Met	(F*)	%	Ranking
Household feeding	223	19.4	1
Reinvesting in farming	159	13.8	2
Paying children fees	158	13.7	3
Local saving (Bam)	141	12.3	4
Building House(es)	128	11.1	5
Raise capital for other business	119	10.3	6
Married wife(s)	80	7.0	7
Pay medical bill	72	6.3	8
Employment	70	6.1	9
	1150	100	-

*Multiple Choice Responses

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4. DICUSSION

Males were more than the females in the collection of resources from the reserve. This result could be attributed to the types of resources collected that had bearing on usage by gender. This finding contracts the findings by Lepetul and Garekae (2015)[29] and Ofoegbu *et al.,* (2017)[21] that women collected forest resources from the reserve more than the men counterpart. Majority of the respondents that collected forest resources form the reserve were above 30 years of age and with the mean age of 45 years, the findings indicates that middle age and agile persons were responsible for the collection of forest products; and perhaps responsible for provision of their family needs. Piya *et al.,* (2011)[11] in a similar study in Nepal found the mean age of 41.5 years for collectors of forest resources. This finding also corroborates the assertions by Oyun, 2009[30]; Olujobi, 2012[23] and Usman *et al*., 2016[25] that forest resources are collected by middle aged people. Respondents' that had formal education were more than that those with non-formal education. This finding is in line with the study of (Lepetul and Garekae, 2015[29]). However, Ofoegbu *et al.,* (2017)[21] contradicts this finding as majority of the communities collecting forest resources around the Kruger National Park in South Africa had non formal education.

The respondents with household size greater than 5 persons were more in this study. This finding in line with the work of Ofoegbu *et al.,* (2017)[21] and also supports the preponderance of large family size among the poor in the rural areas of Nigeria (Eboh, (1995)[31]. Though a very large family size may

constitutes a social burden, larger families use their labour input to an advantage in farming and forest product exploitation. Adhikari *et al.,* (2004)[32] and Baland *et al.,* (2004)[33] have shown in their study that the intensity of forest products exploitation has a direct relation to household size. Majority of the people resided in the area over 10 years. This finding corroborates the assertion by Garekae *et al.,* (2017)[22] in their study of household forest dependency on Chobe enclave, Botswana that most of the household heads lived in the area with a mean length of residency of 40 years. The number of persons involved in farming and in combination with other livelihood activities predominates in the area. This results is in line with the findings of Usman (2016)[25] in their study of communities around Yankari Game reserve, Nigeria that farming was and animal rearing are the most important income generating activities of the neighbouring communities which accounts for 49.3% of the population.

Langat *et al.,* (2016)[17] in their study on role of forest resources to local livelihoods in East Mau Forest Ecosystem, Kenya found 15 forest resources that were utilized by the people to include: Firewood, Timber, Charcoal, Honey, Medicine, Poles, Thatch grass, Fruits, Animal fodder, Agricultural tools, Forest soils, Building stones, Mushrooms, Fibres, and Meat. These forest resources were similar to the ones obtained in this study. The forest resources obtained in this study were also similar to the findings of the reviewed work by Shackleton and Shackleton, (2014)[18] in South Africa and the work of *Lunga et al.,* (2015)[34] in Kipini Division of Tana Delta District, Kenya. The large number of products collected from the forest reserve is a indication that the reserve has positive impact on the livelihood of the people in the villages as they met their economic and house hold needs. This finding corroborates the assertion by Aiyeloja and Ajewole (2006)[35] that forest reserve provides wide range of products simultaneously and at different times for rural population for their immediate house hold needs. Fuelwood was the most collected products by the respondents compared to other products. This is because fuel wood is the major source of energy for cooking and heating among rural households and urban poor in Nigeria Adderson, (1987)[36]). Kalinda and Bwalya, (2014)[20]. also found fuelwood to be the most resource collected among households in Zambia.

Comment [a9]: an

The forest reserve contributed very high in the area of food, income, medicine, trade and water supply. However, the respondents reported low contribution of the reserve in the area of employment and recreation. These finding are consistent with the study Barirega *et al*., (2012)[37] in Uganda which found

that wild plants are increasingly becoming a valuable source of livelihoods for many people through household use and trading as medicine, food or craft materials. Plant medicines are generally the first recourse for rural households. When this fails, they either turn to traditional healers or western-type medicines (Azeke 2002)[38]. Generally, a large number of forest plants have medicinal value hence Abu and Adebisi (2002)[2] regarded the forest as the richest drugstore. Many resources collected from the forest reserve are sources of cash income for many rural households and this have been confirm by many studies. Kaufman, (1998)[39] reported that Non Timber Forest Products (NTFPs) contributed to the average 61% of cash income of households in Nale and Sing districts, Luang Namtha province. Morris (2002)[40] also asserted that cash income of households in Nampheng village, Oudomxay province accounted for 55% of household cash income, which consists of 40% from bitter bamboo and 15% from other NTFPs.

The most need met with the proceeds from the resources collected from the reserve was feeding of household followed by re-investing in farming activities were ranked first and second respectively. This finding is in line with the work of Jumbe *et al.,* (2008)[41] who estimated that 68% of total forest products harvested by rural households were consumed within the household and the reminder (32%) is sold for cash or exchanged for household goods. Also, in line with the finding of this study Yadav *et al.,* (2013)[42] asserted that the pattern of users' product needs and expectations is complex, subject to household livelihood patterns and wealth, forest type and product availability. Men and women also have different priorities as they have different household responsibilities. Women may be concerned with fuel wood, fodder and leaf litter collection, while men may be more preoccupied with agricultural implements and construction timber.

5. CONCLUSION

Comment [a10]: This section should be tagged 'Conclusion and Recommendation 'since imbedded in it recommendation.

The study revealed that fifteen different forest products which consist of the wood and non-wood forest products were collected from Odoba forest reserve by people of the surrounding villages. The people depended on the forest products for different subsistence and commercial purposes. Firewood was the most important forest products collected for cooking and sale by the local people. Households engaged in forest products collection and use to improve their livelihoods as food for household consumption,

additional income, medicinal values, water supply, trading of forest products and contribution of the forest reserve in employment and recreation.

Income generated from the sale of forest products play an important role in the livelihoods of the local villages economically, such proceeds were used in paying children school fees, feeding household, married wife(es), built houses, raised capitals for business, investment in farming, paying medical bills and contribution in local savings. Respondents should be educated on sustainable harvesting /utilization practices to ensure sustainable livelihoods and environmental implication of unsustainable harvesting practices by social forestry programs to create awareness of local people about the sustainable use of forest resources and biodiversity conservation. It is recommended that the State Government and local authorities should provide alternative sustainable sources of fuel energy by establishing village owned fuel wood plantation, solar power and firewood efficient stove. These will reduce dependence on the forest reserve for source of energy and also curtail deforestation of the reserve. Modified Taungya system in the reserve to engage households in forest regeneration efforts as well as the sharing of benefits from such efforts should included in policies of the Government.

Comment [a11]: s

REFERENCES

[1] Popoola, L. (2002). Prevalence of, and conservation strategies for nontimber forest products in the Sudano-Sahelian zone of Nigeria. Nigerian Journal of Ecology. 4 (1):24-33.

[2]. Abu, J. E. and Adebisi, L. A. (2002). A review of traditional forest uses. In: Popoola,(ed). Proceedings of a national workshop organized by FANCONSULT and Edo State Chapter of FAN held in Benin City, Edo State between 5th and 6th of September,2002. Pp. 42-50.

[3]. Agbogidi, O. M. and Eshegbeyi, O. F. (2008). Forestry development for a safe environment. In: Onykwelu, J.C., Adekunle, V.A.J. and Oke, D. O.(eds). Research for development in forestry, forest products and natural resources management. Proceedings of the 1st national conference of the forests and forest products society of Nigerian (FFPN) held at the Federal University of Technology, Akure, Ondo State between 16th-18th April, 2008. Pp. 95-98.

[4]. World Commission on Forests and Sustainable Development (WCFSD) (1998). Our Forests, our Future. March Report, website: www.onuimo.gov.ng/about/the-ioeal-governmeBt

[5]. Roper J., Roberts R.W. (1999). Deforestation: Tropical Forests in Decline. *Forestry Issues No.1999-2001.*

[6]. International Energy Agency (IEA) (2002). Energy and Poverty. In World Energy Outlook 2002.

[7]. Bryon N., and Arnold J.E.M (1997). What futures for the people of the Tropical Forests? *Centre for International Forestry Research (CIFOR), Indonesia (Cifor) Working Paper No. 19.*

[8]. Agbogidi, O. M. and Okonta, B. C. (2003). Role of women in community forestry and environmental conservation. In: Akindele, S. O. and Popoola, L. (eds). Community forestry and stakeholder participation in sustainable development. Proceedings of the 29th annual conference of Forestry Association of Nigeria (FAN) held in Calabar between 6th-11th October, 2003. Pp. 159-165.

[9]. Koziell, I. and Saunders, J. (2001). Living offbiodiversity: Exploring livelihoods and biodiversity in natural resources management. IIED: London. U.K.36pp.

[10]. Lawes, M., Eeley, H., Shackleton, C. M. and Geach B. S. (2004). Indigenous Forests and Woodlands in South Africa: Policy, People and Practice. University of KwaZulu-Natal Press: Pietermaritzburg. 863pp.

[11]. Piya, L., Maharjan, K.L., Joshi, N.P. and Dangol, D.R. (2011). Collection and marketing of non-timber forest products by the Chepang community in Chitwan district of Nepal. MPRA Paper No. 35389, 2011. Website: http://mpra.ub.uni-muenchen.de/35389/

[12]. Angelsen, A. and Wunder, S. (2013). CIFOR Occasional Paper, No 40. Website: http://www.cifor.cgiar.org.

[13]. Wunder, S., Angelsen, A. And Belcher, B. (2014) Forests, Livelihoods, and Conservation: Broadening The Empirical Base. *World Development 64: S1–S11.*

[14]. Angelsen, A., Jagger, P., Babigumira, R., Belcher, B., Hogarth, N.J., Bauch, S., BoRner, J., Smith-Hall, C. and Wunder. S. (2014). Environmental Income and Rural Livelihoods: A Global-Comparative Analysis. *World Development Vol. 64:S12–S28.*

[15]. Sunderland, T., Achdiawan, R., Angelsen, A., Babigumira, A., Ickowitz, A., Paumgarten, F., Reyes-Garcı´A, V and Shively, G. (2014). Challenging Perceptions about Men, Women, and Forest Product Use: A Global Comparative Study. *World Development Vol. 64: S56–S66.*

[16]. Belcher, B. Achdiawan, R. and Dewi, S. (2015). Forest-Based Livelihoods Strategies Conditioned by Market Remoteness and Forest Proximity in Jharkhand, India. *World Development Vol. 66, pp. 269–279, 2015*

[17]. Langat, D.T., Maranga, E.K., Aboud, A.A and Cheboiwo, J.K. (2016). Role of Forest Resources to Local Livelihoods: The Case of East Mau Forest Ecosystem, Kenya. *International Journal of Forestry Research Volume 2016:1-10.*

[18]. Shackleton, C. and Shackleton, S.. (2014). The importance of non-timber forest products in rural livelihood security and as safety nets: A review of evidence from South Africa. *South African Journal of Science **100**, 2004:658-664.*

[19]. Walelign, S.Z. (2013). Forests beyond income: The contribution of forest and environmental resources to poverty incidence, depth and severity. *International Journal of AgriScience Vol. 3(7): 533-542.*

[20]. Kalinda, T. and Bwalya, S. (2014). Utilization of Forest Products and Services for Livelihoods among Households in Zambia. *Research Journal of Environmental and Earth Sciences 6(2): 102-111, 2014.*

[21]. Ofoegbu, C., Chirwa, P.W., Joseph Francis, J. and Babalola, F.D. (2017): Socio-economic factors influencing household dependence on forests and its implication for forest-based climate change interventions, Southern Forests, *Journal of Forest Science, 2017:1-8.*

[22]. Garekae, H., Thakadu, O.T. and Lepetu, J. (2017). Socio-economic factors influencing household forest dependency in Chobe enclave, Botswana. *Ecological Processes (2017) 6:40, 1-10.*

[23]. Olujobi, O. J. (2012). Assesment of nontimber forest products in Ekiti State forest reserves. International Journal of Agriculture, 4 (2), 121-128.

[24]. Adeniyi, A.S. (2015). Contribution of some ornamental plants to the socioeconomic development of urban household in Akure metropolis. *African Journal of Agricultural Research. Vol. 10(4), pp. 264-268.*

[25]. Usman, Y., Danjuma, M.N. and Abdulkarim, .A.I. (2016). Roles of Forest Resources in Sustaining Rural Livelihoods around Yankari Game Reserve, Nigeria. *Pyrex Journal of Geography and Regional Planning, Vol 2(1) pp. 11-15.*

[26]. George, M. V., Smith, S.K., Swanson, D.A. and Tayman, J. (2004). "Population Projections," Chapter 21 in Jacob Siegel and David Swanson (eds.), *The Methods and Materials of Demography.* San Diego: Elsevier Academic Press, 2004. Website: https://www.bebr.ufl.edu/sites/default/files/Research%20Reports/2004_m_m_projections_.pdf

[27]. Yamane, T. 1967. *Statistics: An Introductory Analysis*, 2nd Ed., New York: Harper and Row.

[28]. Dagba, B.I., Azeez, I.O. and Ancha, P.U. (2017). Assessment of Community Based Forest Management Practices in Benue State, Nigeria. *IOSR Journal of Environmental Science, Toxicology and Food Technology. 11, Issue 9 Ver.1:68-75.*

[29]. Lepetu, 1. and Garekae, H. (2015). Attitudes of Local Communities towards Forest Management Practices in Botswana: The Case Study of Kasane Forest Reserve. *International Journal of Agriculture and Forestry 2015, 5(2): 138-145.*

[30]. Oyun, M. B. (2009): The Role of Non-timber Forest Products on the Livelihoods of Fringe Communities of Idanre Forest Reserve, Nigeria. Forests and Forest Products Journal, 2:6-75, 2009.

[31]. Eboh E.C. (1995): Poverty, Population growth and Environmental Degradation: The Vicious Cycle of Human Misery. In: Eboh et al. (eds.): Rural Development in Nigeria: Concepts, Processes and Prospects. Auto-century Publishing Co., Enugu.

[32]. Adhikari B., D., Salvatore, and J.C. Lovett. (2004(. Household characteristics and forest dependency: Evidence from common property forest management in Nepal. *EcologicalEconomics* 48(2):245-257

[33]. Baland J.M.B, Ardhan, P.D., As, S.M., Ookherjee, D. and Rinki S. (2004): The Environmental Impact of Poverty: Evidence from Firewood Collection in Rural Nepal. Paper Presented at the Tenth Biennial Conference of the International Association for the Study of Common Property (IASCP), Oaxaca Mexico, 9–13 August, 2004.

[34]. Olunga, M..A., Kavoi, M.M. and Guthiga, P.M. (2015). Assessment of factors influencing utilization and conservation of forest resources in Kipini Division of Tana Delta District, Kenya. *African Journal of Environmental Economics and Management, Vol. 3 (5): 231-243.*

[35]. Aiyeloja, A. A. and Ajewole, O. I. (2006). Non-timber forest products marketing in Nigeria. A case study of Osun State. *Educational Research and Reviews 1 (2). 52-58.*

[36]. Anderson D. (1997). The Economics of Aforestation. A case study in Africa. The Johns Hopki is University Press, Battimore Maryland, USA.

[37]. Barirega, A., J.G. Agea and P. Van Damme, 2012. Prioritizing wild medicinal and food plants with potential for commercialization and value chain improvement for livelihood enhancement and poverty reduction in Uganda. Res. J. Environ. Earth Sci., 4(6): 668-673.

[38]. Azeke, I.E. (2002). Forestry contribution to Edo State economy. In: *Forest, people and the environment* (Popoola L Ed.) Proceedings of 2nd National workshop organized by *FANCONSULT and Edo State chapter of Forestry Association of Nigeria held in Benin-City, Edo state, 5-6 September, 2002.*

[39]. Kaufmann, S. 1998. Nutrition survey Muang Sing and Nalae, Luang Namtha Province. *GTZ Integrated Food-Security Programme Muang Sing. Luan Namtha, Laos P.D.R.*

[40]. Morris, J. 2002. Bitter bamboo and sweet living: Impacts of NTFP conservation activities on poverty alleviation and sustainable livelihoods. 35 pp.

[41]. Jumbe, C., S. Bwalya and M. Husselman, 2008. Contribution of dry forests to rural livelihoods and the national economy in Zambia. Proceeding of 12th Biennial Conference of the International Association for the Study of Commons. Cheltenham, England, July 14-18, 2008.

[42]. Yadav, N.P., Dev, O.P., Oliver Springate-Baginski, O. and John Soussan, J. *(2003.* Forest Management and Utilization Under Community Forestry. *Journal of Forest and Livelihood 3(1).*