Factors Affecting the Collection and Utilization of Non- Timber Forest Products in Rural Communities of North Central, Nigeria

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ABSTRACT

The study focused on factors affecting the collection and utilization of non- timber forest products in rural communities of Kogi State, North Central, Nigeria. The data for this study was collected from 155 rural households through a multistage field survey in 2010. The study revealed that most of the Non-Timber Forest Products (NTFPs) collectors were females, married and had large household size, earning between N10000-N20000 from the sale of these products. It was further revealed that herbs, fuel wood, locust bean, bush meat, palm fruit, ogbono (Irvingia gabonenses), and palm wine were the major NTFPs collected in the area. The outcome of the logistic regression revealed that gender and distance were found to significantly reduce the odds in favour of collecting NTFPs while family size was found to significantly increase the odds in favour of collecting NTFPs. The policy recommendation from this study suggest that the government should embark on policies and reforms that will enhance the participatory approach to forest management so as to ensure its sustainability and continued supply of the fast depleting forest resources.

Keywords: Collection, Utilization, Non- Timber Forest Products, Rural.

INTRODUCTION

Non-Timber Forest Products (NTFPs) consist of goods of biological origin derived from the forest, other wooded land and trees outside the forest (FAO, 1999). Shiva and Mathur(2007) referred to all products obtained from plants of forest origin and host plant species yielding products in association with insect and animals or they are parts and items of mineral origin except timber as Minor Forest Products (MFP) or Non-Wood Forest Products(NWFPs) or Non-Timber Forest Products (NTFPs).

Non- Timber Forest Product (NTFPs) contributes significant to the livelihood of Nigeria's fast growing population. It has gained global attention due to its contribution to the household economies and food security. Nweze and Igbokwe(2000) asserted that about 80 percent of the population of developing countries use NTFPs to fill health and nutritional needs. He also asserted that women heavily depend on NTFPs in southern part of Nigeria. Another research carried out by Bisong and Ajale (2001) also points to the fact that there is a heavy dependence on NTFPs in the western part of the country. Individuals in rural areas collect this product in large quantities and most cases daily because they are needed for the local people's livelihood, income, food and medicine (Wiersum, 1999). The importance of these forest products makes it imperative to employ a sustainable management mechanism for the rapidly depleted forest resources so as to maintain an uninterrupted supply of these resources for the future generation. Sustainable development implies development which while protecting the environment allows a type of economic activity that can be sustainable into the future with minimum damage to people or ecosystem (Goudie, 2000).

The inhabitants of rural communities in Kogi State depend largely on forest product, especially Non-Timber Forest Products (NTFPs) due to its nutritive and economic importance. Their collection activities has led to the over exploitation of the forest resources without paying corresponding attention to the sustainability and continued supply of these resources. This of course has its own contribution to unpleasant environmental situations such as global warming and climate change, desertification, loss of species and habitat etc. For instance about 10.4 million hectare of the tropical forest were permanently destroyed each year in the period from 2000-2005 (FAO, 2005).this Situation give rise to the following research question;

a. what are the major NTFPs collected in the area
b. what factors affect the collection and utilization of these products in the study area.

Thus, it is against this background that this study is out to undertake the factors affecting the collection and utilization of NTFPs in the study area.

METHODOLOGY

This study was conducted in 2010 in the agro-ecological zones of Kogi State, North Central, Nigeria. The data for the study was obtained through a multi stage sampling technique. The first stage involved the random selection of one local government each from the four agro-ecological zones in the state. These are Mopamuro, Dekina, Koton-Karfe and Idah local Government area. The second stage comprised of the random selection of two villages from the each of the selected local government area. The final stage was the administration of questionnaire to twenty randomly selected households in each of the villages. This gives a total of 160 respondents. However only 155 copies of the administered questionnaire were used for analysis based on correctness and appropriateness.

Analytical Technique

The factors affecting the collection of Non- Timber Forest Products was analyzed using the logistic regression model. The probability of the respondents to Collect NTFPs or not depends on a set of variables x such that

$$\text{Prob } (Y=1) = f(\beta x) \text{ ----------------------1}$$
$$\text{Prob } (Y=0) = 1-(\beta x) \text{ ----------------------2}$$

Using the logistic distribution, we have

$$\text{Prob } (Y=1) = \frac{e^{\beta x}}{1+e^{\beta x}} \text{ ------------------------3}$$
$$= A(\beta x) \text{ ------------------------4}$$

Where A is the logistic cumulative distribution function. Then the probability model of the regression:

$$E(Y/Xi)=0[1-F(\beta x)]+1[f(\beta x)]=F(\beta x)\text{----5}$$

Where Xi is defined as the set of variables including:

$$Y=\beta_o+\beta_1X_1+\beta_2X_2+\beta_3X_3+\text{----------------}+\beta_7X_7$$

Where, Y= dependent variable taking values of 0 and 1, 1= if the respondent collect NTFPS and 0 = otherwise; and the X variables are:

X_1 = age ; X_2 = gender where 1 = male, 0 = female
X_3 = Marital status (1= married, 0= otherwise); X_4 = family size
X_5 = income from sale of NTFPs (N), X_6 = availability of NTFPs
X_7= distance of NTFPs from home

RESULTS AND DICUSSION

The following socio economic characteristics of the respondents were considered on table 1.0 based on their perceived influence on the collection of NTFPs in the study area. The gender analysis of the respondents revealed that females dominated (58.06%) in the collection of the NTFPs in the area as shown in table 1.0.

Similarly, majority (85.81%) of the NTFPs collector had above five (5) persons in their households as presented in the same table 1.0. This implies that collection of NTFPs will be easier and more due to the large hands that will be engaged in the collection process.

Socioeconomic Characteristics	Frequency	Percent
Gender		
Male	65	41.94
Female	90	58.06
Family Size		
<5	22	14.19
5-10	83	53.55
11-15	31	20
16-20	10	6.45
>20	9	5.81
Marital Status		
Single	24	15.48
Married	105	67.74
Divorced	13	8.39
Widow	9	5.81
Widower	4	2.58
Educational Status		
Illiterate	83	53.55
Primary education	44	28.39
Secondary education	24	15.48
Tertiary education	4	2.58
Total	**155**	**100**

Source: Field Survey, 2010

Table 1.0 further showed that married people consisted the bulk (67.74%) of the non-timber forest product collectors. This implies that the respondent will be faced with several family responsibilities alongside with collection activities.

In addition, Table 1.0 indicated that most (53.55%) of the collectors has no formal education. This implies that most of the NTFPs collection activities is done among the illiterate in rural areas.

Table 2.0: Types of Non-Timber Forest Products(NTFPs) Collected

Type of NTFPs Collected	Frequency(Percentage)
Herbs	141(90.97)
Fuel wood	130(83.87)
Locust Beans (*Parkia biglobosa*)	113(72.90)
Bush meat	92(59.35)
Palm Fruit	90(58.06)
Ogbono(*Irvingia gabonenses*)	82(52.90)
Palm wine	79(50.97)
Snails(*Archatina marginata*)	68(43.87)
Honey	67(43.23)
Thatches	56(36.13)
Mushroom	40(25.81)
Others	27(17.42)

Source: Field Survey, 2010. **Multiple Response**

Analysis of the data according to types of Non-Timber Forest Products(NTFPs) collected by the respondents as presented on table 2.0 indicated that the respondents exhibit high level of collection(over 50 percent) to collecting herbs, fuel wood, locust bean, bush meat, palm fruit, ogbono(*Irvingia gabonenses*), and palm wine. This is probably because they are readily available within the reach of the respondents and are of great importance to the locality.

However, less than 44 percent of the respondents collected snails, honey, thatches, mushroom and other NTFPs. this might be as result that it is not within the reach of the respondents and alien to the respondents.

Table 3.0: Income From Non-Timber Forest Product(NTFPs)
Source: Field Survey, 2010

Income From NTFPs	Frequency	Percentage
<10000	43	27.74
10000-20000	64	41.29
21000-30000	18	11.61
31000-40000	10	6.45
41000-50000	13	8.39
> 50000	7	4.52
Total	155	100.00

Table 3.0 revealed that majority (41.29%) of the respondents earn between N10, 000 and N20,000 from collection and sale of NTFPs. This is quite low, therefore it is important to increase the income from this sources given the level of abundance of NTFPs in the country. However only 4.52 percent earned above N50000 from the sale of these products.

Table 4.0: Summary of the Logistic Result of the Factor Influencing the Collection of Non-Timber Forest Products in the Study Area

Variables	Coefficient	Standard error	Significant level
Age	-0.052	0.027	0.159
Gender	-0.832	0.059	0.050
Marital status	0.673	0.517	0.193
Family size	0.383	0.100	0.000
Income	0.000	0.000	0.698
Availability	0.353	0.380	0.353
Distance	-0.071	0.042	0.096
Constant	-1.497	1.423	0.293

Source: Field Survey, 2010

The result of the logistic regression on table 4.0 shows that the chi-square of 38.937 at 7 degree of freedom and significant at 1% .This implies that all the independent variables jointly accounts for the variation in the dependent variables. The result revealed that the following variables; (gender, family size, and distance) are the factors that affect the collection of NTFPs. An increase or decrease in any of the said variable will lead to a corresponding increase or decrease in the collection of NTFPs However family size was significant at 1% and shows a positive relationship with the collection of NTFPs, implying that an increase in the family size of the respondents will lead to a corresponding increase in the collection of the non-timber forest products. Also gender and distance of the NTFPs sources from home were negatively related to the collection of the product and are significant at 5% and 10% respectively. The negative relationship between gender and collection implies that female is more likely to collect NTFPs than their male counterparts. Similarly the negative relationship between distance and collection of the product implies that an increase in the distance of NTFPs sources the less likelihood of it been collected.

CONCLUSION AND RECOMMENDATION

Findings from the study indicated that herbs, fuel wood, locust bean, bush meat, palm fruit, ogbono, and palm wine were highly collected in the area. It was also revealed that gender, family size, and distance are the factors affecting the collection of NTFPs in the area. The importance of non-timber forest products (NTFPs) cannot be over emphasized in that it provides income and meet the food and nutritional as well as the health needs of the respondents. The policy recommendation from this study suggest that the government should embark on policies and reforms that will enhance the participatory approach to forest management so as to ensure its sustainability and continued supply of the fast depleting forest resources. This will enable the product to continue to meet the income and food needs of the people without jeopardizing the hope of future generations on enjoying this same provision of nature.

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