

The study analyzed the contributions of plant and animal species of Non-Wood Forest Products (NWFPs) to farm household's income and food security. Three agricultural zones, Nsukka zone, Enugu Ezike zone and Udi zone, were purposively selected for the study. One hundred and twenty (120) respondents were selected through multistage sampling technique. Descriptive statistics, and Probit model were used for the analysis. The results indicated that majority (63.33 %) were males, with a mean age of about 56 years. Most (53.3%) of the respondents were farmers. The average household size was about 5 persons. The respondent's mean years spent in school was about 7 years (at least completed primary school) and belonged majorly (50.83%) to the medium wealth category. The most commonly collected plant species of NWFPs were bitter kola (*Garcinia kola*), breadfruit (*Treculia africana*), bush mango (*Irvingia gabonensis* and *wombulu*), kola nut (*Cola nitida*), cashew (*Anacardium occidentale*), Icheke (*Dalium guinese*), African star apple (*Chrysophyllum albidum*), Avocado pear (*Persea americana*), African bush mango (*Dacryodes edulis*) and Oil bean (*Pentaclethra macrophylla*) while the most commonly collected animal species of NWFPs were bee products (*Apis mellifera linnaeus 1758*), flying termites (*Reticulitermes flavipes*) and fish (*Ictalurus punctatus*). Wealth category ( $p < 0.01$ ) and occupation ( $p < 0.01$ ) positively and significantly increase the contributions of NWFPs to household food security. Educational level ( $p < 0.05$ ) had negative and significant effect on the contributions of NWFPs to household food security. On the daily inclusion of NWFPs in respondent's meals, NWFPs appeared in the meals of the households for a total of 2,150 times (78.5%). The result of the proportion of household food from NWFPs shows that 53.33% indicated that species of NWFPs constituted over 50% of their household food. Based on the food security analysis results, derived using the USDA (2000) approach, few of the urban farmers' households (47.5%) were food secure, while most of them (52.5%) were food insecure at different levels of food insecurity. The result shows that 25.83% of farm households were food insecure without hunger, 25% were moderately food insecure with hunger and 1.67% was severely food insecure with hunger. Household size and occupation positively and significantly ( $p < 0.01$ ) increased the contributions of NWFPs to household income. On the market wares inclusion of NWFPs by households, NWFPs appeared in the market wares of the households for a total of 381 times (79.4%). The result of the proportion of household income from NWFPs shows that 54.43% indicated that species of NWFPs constituted over 50% of their household income. The extent of perceived impediments to the continuing use of NWFPs in the area was identified as underdeveloped market (3.44), lack of capital (3.26), lack of storage facility (3.33), poor transportation system (3.38), lack of adequate information (3.13), poor harvesting technique (3.56) and inefficient processing facility (3.2). Remedial measures such as the incorporation of NWFPs in national accounting systems in order to attract the deserved attention from policy makers, public enlightenment campaign on the economic and health benefits of NWFPs by the national orientation agencies and the provision of infrastructural amenities by the government and humanitarian organizations.

## TABLE OF CONTENTS

	PAG
ES	
Title page	i
Certification	ii
Dedication	iii
Acknowledgement	iv
Abstract	v
Table of Contents	vi
List of Tables	ix
<b>CHAPTER ONE: INTRODUCTION</b>	

Background of the Study		1
Problem Statement	- - - - -	4
Objectives of the Study	- - - - -	6
Research Hypotheses	- - - - -	6
Justification of the Study	- - - - -	7
<b>CHAPTER TWO: REVIEW OF RELATED LITERATURE</b>		
2.1 Conceptual Framework	- - - - -	9
2.1.1 Non Wood Forest Products in Rural Livelihood and Economy	- - - - -	9
2.1.2 Nigeria Forest Resources and Management	- - - - -	18
2.2 Theoretical Framework		21
2.2.1 Theories of Household Production Choices	- - - - -	21
2.3 Analytical Framework		26
2.3.1 Probit Model	- - - - -	27
2.3.2 Likert Scale Rating Technique.....		28
2.3.3 Food security status using the USDA Approach		29
<b>CHAPTER THREE: RESEARCH METHODOLOGY</b>		
3.1 The Study Area	- - - - -	30
3.2 Sampling Procedure	- - - - -	31
3.3 Validity and Reliability of instrument.....		31-3
3.4 Data Collection	- - - - -	31
3.5 Data Analysis.....		32
<b>CHAPTER FOUR: RESULTS AND DISCUSSION</b>		
Socioeconomic Attributes of the Respondents		40
Gender of the respondents		40
Age of Household heads		40
Occupation of household heads		41
4.1.4 Household size		42
Years spent in school		42
Wealth category		43
4.1.7 Average income realized from spp of NWFPs		44
Commonly collected NWFPs		45
Plant species of NWFPs		45
Animal species of NWFPs		47
Perception of the respondents on the extent of certain impediments to the continuing use of NWFPs		47
Contributions of NWFPs to household food security		49
Contributions of NWFPs to farm household income		52
<b>CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION</b>		
5.1 Summary		55
5.2 Conclusion		57
5.3 Recommendation		58
5.4 Suggestion for further Research		59

## References

...5555555555556656...56.....  
56 383833333336666

## LIST OF TABLES

		PA
GES		
Table 2.1:	Nigeria Forest Land Statistics	- - - - -
-	18	
Table 3.5:	Wealth Definition of Households.....	34
Table 3.6:	Structured survey questions on food security of the household	
37		
Table 3.7	USDA food security scale	39
Table 4.1:	Distribution of the respondents according to gender	40
Table 4.2:	Frequency distribution of the respondents according to their age	
41		
Table 4.3:	Frequency distribution of the respondents based on their occupation.	
41		
Table 4.4:	Frequency distribution of the respondents according to their	
of households.		S i z e
		42
Table 4.5:	Frequency distribution of the respondents based on the number of	
in school		y e a r s s p e n t
		43
Table 4.6:	Frequency distribution of the respondents based on the size of their	
category		w e a l t h
		43
Table 4.7:	Average income realized from species of NWFPs.	
44		
Table 4.8:	Plant species of NWFPs often used, part used, form of use, and	
acquisition.		m e t h o d o f
		46
Table 4.9:	Animal species of NWFPs often used, and method of acquisition	47
Table 4.10:	Perception of the respondents on the extent of impediments to the	
	continuing use of NWFPs.	
		48
Table 4.11:	Result of the contributions of NWFPs to Farm household food security.	50
Table 4.12:	Result of the distribution of the respondents according to their inclusion	
of		N W F P s i n t h e i r b r e a k f a s t , l u n c h a n d
supper.		51
Table 4.13:	Result of the distribution of the respondents on their proportion of food	
a n d		i n c o m e
from NWFPs.		51
Table 4.14:	Result of the food security status of the respondents	
52		
Table 4.15:	Result of the contributions of NWFPs to Farm household	
income.		53
Table 4.16:	Result of the distribution of the respondents in their inclusion of NWFPs	
in		t h e i r m a r k e t w a r e s .
		54

## 1.1 BACKGROUND OF THE STUDY

A forest, also referred to as a wood or the woods, is an area with a high density of trees. Depending on various cultural definitions, what is considered a forest may vary significantly in size and have different classifications according to how and of what the forest is composed (Lund, 2006). Forests can be classified in different ways and to different degrees of specificity. One such way is in terms of the "biome" in which they exist, combined with leaf longevity of the dominant species (whether they are evergreen or deciduous). Another distinction is whether the forests are composed predominantly of broadleaf trees, coniferous (needle-leaved) trees, or mixed.

The contribution of forests to the sustainable livelihood of the rural farmers around the world is immeasurable including the wood and non-wood forest resources. Forests which include all resources that can produce forest products namely woodland, scrubland, bush fallow and farm bush and trees on farms, as well as ecosystem dominated by trees (Arnold, 1998), provide households with income, ensure food security, reduce their vulnerability to shocks and adversities and increase their wellbeing. Research on non-farm rural employment and income as a whole has shown that small scale production and trading activities in forest products constitute one of the largest parts of rural non-farm enterprise employment (Liedholm & Mead 1993). It is in acknowledgement of the importance of forests for livelihood and environmental stability that its conservation is included in the Millennium Development Goals of the United Nations. In Nigeria, poverty has led to the dependence of over 90% of the rural population on forests for some livelihoods and economic survival (UN, 2002).

Among the products obtained from forests are those classified as wood forest products and non-wood forest products (NWFPs). Non-wood forest products consist of goods of biological origin other than wood, derived from forests, other wooded land and trees outside forests (FAO, 1999). The United Kingdom's Forestry Commission defines non-wood forest product (NTFPs) as "any biological resource found in woodlands except wood (timber and other forms of wood), United Kingdom Forest Research (UFR, 2013). Part of the reforestation Scotland project, defines them as "materials supplied by woodlands – except the conventional harvest of wood, Scotland Forest Harvest (SFH, 2013). These definitions include wild and managed game, fish and insects, Center for International Forestry Research (CIFOR, 2013). When wood other than timber is included it is referred to as non-timber forest products (NTFPs). Generally NWFPs are grouped into: sponges, chewing sticks, tooth cleaners, fibers, bast fibers, jute, cloth, foodstuffs, water, beverage, wine, medicinal plants, latex, rubbers, gums and resins, and decorative beads (Wyatt, 1991). Furthermore, a large portion of NWFPs have medicinal properties. For at least three quarters of the world's population, traditional medicine is the only source of medicinal treatment (70-80% in Africa) (Van Rijsoort & De Pater, 2000). On the use of NWFPs in meals, observation of household in Western Burkina Faso identified that some thirty NWFPs were used, raw or cooked, and that they came from 17 tree species of the savanna or traditional forestry parklands (Lamien & Bayala, 1996). This study will focus on flora (plant) and fauna (animal) species of non-wood forest products. Some of the plant species of NWFPs found in Nigeria, according to Osemeobo and Ujor (1999) include *Gnetum africanum*, *Gongronema latifolium*, *Pterocarpus soyauxii*, *Ocimum gratissimum*, *Treculia africana*, *Irvingia gabonensis*, *Dennettia tripetala*, *Chrysophyllum albidum* (white straw apple), *Piper guineense*, *Aframomum* spp and *Garcinia kola*. Fauna species include snails, bee product (honey), grass cutter etc.

Non-wood forest products have attracted considerable global interest in recent years because of increasing recognition of their contribution to household economies and food security to some national economies and to environmental objectives such as the conservation of biological diversity. Some 80 percent of the population of the developing world use NWFPs to satisfy health and nutritional needs (UN, 2002). Indigenous population in Nigeria have benefited historically from natural ecosystems through the use of NWFPs.

Although NWFPs typically lack statistics on official commerce, they provide a wide range of raw materials and inputs for a diverse array of rural enterprise. Non-wood forest products provide off-farm employment to a large segment of the rural population and account for an enormous share of household income. For example, in 1996 in southeastern Nigeria, 35.7% of the rural population collected NWFPs daily and it accounted for 94% of total income from minor sources (Nweze & Igbokwe, 2000).

Bisong and Ajake (2001) found out that women in southern Nigeria depend heavily on NWFPs. In fact, many Nigerians depend on NWFPs for food, fiber and herbal medicines. In recent times, there has been a reasonable and noticeable shift from the earlier bias in favor of orthodox medicine to greater acceptance of traditional (herbal) medicines in Nigeria as in many other countries worldwide (Akunyili, 2003). Over 90% of Nigerians in rural areas and over 40% in urban areas depend partly or wholly on traditional medicine (Osemeobo & Ujor, 1999). NWFPs also provide raw materials for large-scale industrial processing including processing of internationally traded commodities such as foods and beverages, confectionery, flavorings, perfumes, medicines, paints and polishes. At present at least 150 NWFPs are significant in terms of international trade; they include honey, gum arabic, rattan and bamboo, cork, forest nuts and mushrooms, essential oils, plant and animal parts for pharmaceutical products. Thus promotion of NWFPs can complement the objectives of rural development and appropriate forest management (Hammet, 1993). Since the early 1990s, the role of Non-Wood Forest Products for sustainable forest management and poverty reduction has received increased attention (Sheil & Wunder, 2002). They play an important part in supporting household livelihoods and therefore can be used to raise the perceived value of forest resources. In developing countries, including Nigeria, majority of rural household and a large proportion of urban household depend on NWFPs to meet some parts of their nutritional, health, construction material and income from selling these products. Elsewhere, NWFPs are the only source of income for the local communities (Wollenberg & Septianinawir 1998). Therefore, NWFPs form an integral part of the rural economy where the majority of the rural populations live especially around the forest resource base. In this perspective, sustainable forest management will be achieved through encouraging participatory management of forest and woodland resources.

FAO, (2002) defined food security as a situation that exist when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Conceptually, food security is broken down into four different components— availability, access, utilization and vulnerability – each capturing different, but overlapping dimension of the phenomenon (Migotto, Davis, Carletto, & Beegle, 2007). To date, a lot of people in the developing world are still suffering from malnutrition despite the efforts made and inclusion of food security as part of the Millennium Development Goals (MDG). Worldwide, approximately 840 million people are undernourished or chronically food insecure and as many as 2.8 million children and 300,000 women die needlessly every year because of malnutrition in developing countries (Guha-Khasnobis, Acharya, & Davis, 2007).

The Thrust of this research is to evaluate the contributions of Non-Wood Forest Products (NWFPs) to farm household income and food security in Enugu state. This is with a view to gain better insight into farm household's income and food security and an attempt to strengthen the link between development policies and food security.

## **EVALUATION OF NONWOOD FOREST PRODUCTS TO FARM HOUSEHOLD INCOME AND FOOD SECURITY IN ENUGU STATE NIGERIA**

The complete project material is available and ready for download. All what you need to do is to

**order for the complete material. The price for the material is NGN 3,000.00.**

**Make payment via bank transfer to Bank: Guaranteed Trust Bank, Account name: Emi-Aware technology, Account Number: 0424875728**

**Bank: Zenith Bank, Account name: Emi-Aware technology, Account Number: 1222004869**

**or visit the website and pay online. For more info: Visit <https://researchcub.info/payment-instruct.html>**

**After payment send your depositor's name, amount paid, project topic, email address or your phone number (in which instructions will sent to you to download the material) to +234 70 6329 8784 via text message/ whatsapp or Email address: [info@allprojectmaterials.com](mailto:info@allprojectmaterials.com).**

**Once payment is confirmed, the material will be sent to you immediately.**

**It takes 5min to 30min to confirm and send the material to you.**

**For more project topics and materials visit: <https://researchcub.info/> or For enquiries: [info@allprojectmaterials.com](mailto:info@allprojectmaterials.com) or call/whatsapp: +234 70 6329 8784**

**Regards!!!**