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Bush Meat Harvesting and Human Subsistence Nexus in the Oban Hill Communities of Nigeria

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ABSTRACT Wildlife is an important socio-cultural and economic resource in West and Central Africa. The declining wildlife population in the recent time is as a result of a combination of factors, namely, increased access and demand for wildlife resources by rural and urban dwellers, population growth, improved hunting technology and lack of protein alternatives in many households.. This paper investigates the contribution of bush meat extraction to household's livelihood (income, health, nutrition, etc); the role of beliefs and taboos in wildlife conservation and the attitude of community members towards wildlife hunting and conservation in Oban Hills, Nigeria. Data for the study were generated through a triangulation of qualitative and quantitative methods using primary and secondary sources. It was revealed that majority of the people of Oban Hills are farmers although some also engaged in quarry business, civil service, trading, lumbering and hunting. However, there has been a decline in income generated from hunting and dependence on bush meat as protein source due to restrictions on hunting in and around forests in the protected area. It was also observed that beliefs and taboos in form of totems played a major role in wildlife conservation in the past; therefore involving existing cultural institutions in conservation efforts will facilitate sustainable wildlife exploitation in Oban Hills. However, the involvement of the cultural institution in the conservation agenda and the integration of these values into the overall conservation strategy will be achieved through a formal process of recognition and consultation by the responsible government agencies.

INTRODUCTION

West and Central Africa are experiencing a fast decline in wildlife populations due to the increasing trade in bushmeat, as well as problems of forest encroachment from farmers and large-scale plantation development. This decrease in wildlife populations has been acknowledged as a major concern not only by conservationists but also by local inhabitants (Akumsi 2003). Previous studies have demonstrated that bush meat consumption is an integral part of the livelihood both as protein requirement and important source of supplementary income but it is also of a major socio-cultural importance (de Merode et al. 2003). Over exploitation of various species has been found to be the key reason for forest wildlife declines in Africa (Bennet et al. 2007). Exploitation as a phenomenon is noted to be on the increase as a result of growing human populations, improved access to undisturbed forests, changes in hunting technology, and scarcity of alternative protein sources (Robinson and Bodmer 1999; Bennett and Robinson 2000; Fa et al. 2002). Fa et al. subsequently enunciated that bushmeat depletion in the Congo Basin in real existence and supply may lead to 81 percent drop in less than 50 years, if current rates of harvest continue, which may further aggravate the dramatic increase in protein malnutrition (Fa et al. 2003). There is no doubt in concluding that overexploitation of wildlife for bushmeat in West and Central Africa is a serious issue which can lead to local, national or worldwide extinctions of targeted species, with tragic ecological and economic repercussions. Sustaining various species of wildlife both for future economic and social reasons therefore becomes an important point of direction if the balance in the ecosystem must be sustained invariably.

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Thus, effective wildlife management models need to be developed to secure bushmeat as resource and make it available for future generations. While wildlife resources in some countries in Africa is communally owned, in most countries, wildlife is a state property and hunting often illegal, leading to a situation of low ownership and non-recognition of user rights by the communities and even criminalisation of use in the extreme cases . In order to address this situation, many countries are seeking ways to devolve and cede user rights to communities to create an incentive to invest in the long-term sustainable use of resources (Pailler 2005) in the form of community wildlife management arrangement (CWM). It is therefore a scientific guess that community wildlife management (CWM) models may be one of the key mechanisms to engender support for attempts to make the bushmeat harvesting more sustainable. The focus of this is on enhancing the livelihoods of the people living in and around the forest that are often the resource poor farmers and most marginalised in their country who engage in other subsistence livelihood strategies. (Ashley et al. 2002). CWM is a strategy that is based on the assumption that it is possible to improve rural livelihoods, conserve the environment, and promote economic growth (Roe 2001). However, detailed analyses combining socio-economic and ecological data on forest wildlife hunting are few and it is debatable if such systems can serve both economic and ecological purposes under current conditions (Songorwa et al. 2000).

The Korup-Oban Hills region of Cameroon and Nigeria, particularly the Oban hills forest area of Cross-River in Nigeria is a very important conservation region with unique bio-diversity, with many endangered species being confined to this region. Several communities have depended solely on these forest resources for centuries. The region was also the first transboundary conservation initiative in the Guinea-Congolian forest zone, which contains a network of protected areas of various status and a huge amount of scientific reports have been prepared by researchers in the past.. While bushmeat trade and marketing has already been subject to research, the extent to which wildlife resources and bushmeat extraction play important roles in the peoples' daily livelihood and subsistence strategy is yet to be substantiated. The researchers are concerned that most often, indigenous beliefs and practices are treated with utmost disregard and suspicions, especially from the western scholars who appear either not to understand the basis and functions of various socially accepted cultural practices and knowledge patterns in Africa or ignorant of their benefits. The demonstration of cold attitude of the western scholars or disinterest in understanding the fundamental elements of social values in many aspects of African life stems from the much suggested ethnocentrism and euro centrism with little or no regard to post modernistic approach to understanding of human society. In this regard a critical explication of the functions and limits of taboos and customary practices attached to wildlife harvesting among Oban hills communities of Nigeria will illuminate sufficiently on what the society stands to gain from various taboos and how these taboos can be constructively repositioned to achieve ultimate conservation of natural resources, wildlife species for example.

Specifically, the study examined the contributions of bushmeat extraction to household's livelihood (income, health, nutrition, among others), document the role of beliefs and taboos in wildlife conservation and investigates local community members' attitudes towards wildlife hunting and conservation.The major questions that guided this study include:- What long-term livelihood benefits could local communities have from sustainable exploitation? How can social beliefs and taboos have a long-term influence on wildlife management systems?

MATERIALS AND METHODS

Study Area Description

The Cross River National Park (CRNP) is located in Cross River State, Nigeria, which situates 8^{o} 35.00' East 5^{o} 25.00' North. It was created by Act Nos. 36 and 46 of 1991 and 46 of 1999 respectively. The park is made up of two sectors namely, *Oban and Okangwo*. The present study was carried out at the Oban Hill sector.. The Oban Hill Sector of the National Park was carved out of Oban group Forest Reserve in 1991. The total area is 3,000km^2 and it shares boarder with Korup National Park, Cameroon in the east and about 42km from Calabar. It could be accessed through the Ikom-Calabar high way. The Oban sector of CRNP is further divided into two corridors: the Obong/Nsan corridor and Oban corridor. The

predominant ethnic group is Ejagham with Ibibio migrant form Akwan Ibom state settling in some places. The following are the four villages and the population where this study was carried out; *Old-Netim* (3,750), (1,221); *Oban town* (2,163); *Aking* (1,614) and *Osomba* (471). These villages have relatively large amount of tropical high forest and also consists primarily of hills and swamps. The terrain is rugged with hills ranging from 100 to more than 1,000 meters above sea level. Annual rainfall is estimated to range between 2,500 mm and 3,000 mm. The park is under the control of the Federal Government of Nigeria with a legal instrument promulgated through Decree No. 46 of 1991 (Act No. 46 of 1991) in the Laws of the Federal Republic of Nigeria. The flora and fauna composition of the Oban hill sector has been described by Schmidt (1996), who identified 1,303 species of plants, 141 lichens, and 56 mosses, seventy-seven of which are endemic to Nigeria. Fauna biodiversity included 134 mammals, 318 birds, 42 snakes, and over 1,266 butterflies. The vegetation of the Oban sector is currently dominated by tropical rainforest at various stages of degradation and recovery. There are patches of closed canopy, open canopy secondary vegetation, farm fallows and oil palm plantations. The buffer zone is dotted with oil palm, cocoa, cassava, banana, plantain plantations and maize and cocoyam farms. There are also numerous stone quarries around the buffer zone of the park.

Methods of Data Collection and Analysis

Data were collected from both primary and secondary sources. For primary data collection, the Oban Hill Sector was stratified into two, based on the administrative divisions of the park that is, Oban Corridor and Obond/Nsan corridor. Two communities were selected for detailed surveys from each corridor and altogether four communities namely: *Old Netim, Aking, Oban* and *Osomba* were surveyed. Data were collected on farming and hunting techniques, species hunted, those prohibited by traditional laws and taboos, vegetation and land use types as well as habitat quality.

Primary data were collected through the use of participatory rural appraisal tools such as semi-structural interviews, seasonal calendar, activity profile and profitability margins, participant observations, focus group discussions, village meetings and in-depth interviews. Stakeholders who were considered to have direct influence on the management of the park were identified and various levels of interaction were carried out. These include: households, hunters, CRNP staff, Non Governmental Organizations; staff of Cross River Forestry Commission and Community leaders. Personal interviews were held with community leaders, key members of staff of the National Park, State Forestry Commission and Non Governmental Organizations. Secondary data were retrieved from literature such as annual reports, government gazettes, policy documents and commissioned project reports. At the end of the fieldwork which took place between December 2008 and December 2010, two waves of data emerged, namely qualitative and quantitative data. While content analysis was employed to analyse and synthesize various qualitative data, which resulted to an output of useful qualitative information, the quantitative data were analysed by the use of uni-varate and bi-variate analytical tools in the Statistical package for the Social Sciences (SPSS). Results were presented in summary tables containing frequency counts and percentages.

RESULTS AND DISCUSSION

Socio-Demographic Characteristics of the Sample Population

The result presented in Table 1 shows that 22(88%) of the respondents were males, while only 3(12%) were females. Majority (40%) of the respondents were within the age bracket of 41-60years, 36% were between 61-80 years. Marital status analysis indicated that 96% were married while only 4% were single. Also 91.7% had only one wife, while 8.33% had more than one. Number of children per household ranged between 1 and 10. Those with between 7-10 children were the highest, followed by 4-6. Thirty-eight percent had between one and three other relatives staying with them, this was followed by those with 4-6 (30.77%). The major languages spoken were: Ejagham (80%); Efik (12% and Igbo (8%). The main occupation in the study area is farming and it is practiced by 48% of the respondents, this was followed by those who combined farming and trading (24%) while others are into

various other activities such as public service, quarrying and commercial transport operations. Majority (52.17%) of the respondents had only primary education, followed by those with secondary education (24%). Duration of stay in the villages ranged between 31 and 90 years.

Bushmeat Extraction and Harvesting Strategies

Hunting which is found to be one of the major economic activities that sustain many households in the study area is done throughout the year. The hunters do not have any particular period of time to for hunting activities but there are seasons and periods that are more favourable than others. Raining season is the period that more hunting activities are done, compared to the dry season. This is because as rain falls, most animals come out to look for food. In the various communities, there is no singularly accepted way of hunting for bushmeat extraction in the Oban Hill sector communities. There are various methods that hunters adopt, depending on the exigencies and appropriateness of each method for any particular situation. In terms of instrument, the study revealed that locally made long guns and traps are mostly used, some of these traps are made of wire cable.

There are also wooden boxes, *'Ekwo'*, stones and ropes used for the purpose of catching the animals (hunting). With recent scientific development, chemicals are also used to kill the animals. As the chemical substance is introduced on the animals' baits such a cassava, any animal that eats such chemical substance dies immediately. Unfortunately, most of these chemicals are also believed to be injurious to man when consumed as indicated by some of the key informants interviewed.

Contribution of Bush Meat Extraction to Household Livelihood in Oban Hill Sector Communities

Household livelihood is an important aspect of every society's social and economic system, especially with regards to sustainability and human survival. Around the Oban Hill Sector area of Cross River State of Nigeria, an average household engages in series of activities in order to generate income, food, and native medicine. These livelihood patterns are both collectively and individually pursued. For instance, in a family, there may be a collective family known strategy and other individual member's strategies. The livelihood areas investigated in this study include: occupation, income, nutrition and medicine.

Contributions of Bush Meat Extraction to Household Occupation and Income Level

Bushmeat extraction as a full time occupation forms a on significant aspect of the peoples' subsistence strategies. The above conclusion stems from the observation that the peoples' participation in the social and economic production of bushmeat exist to supplement other occupations of people of Oban area, as only very few (8.33%) of the households participate in the trade on bush meat (Table 2). The study revealed that most of the local community members are involved in quarry business as entrepreneurs or working in the quarry that has recently been established in the area. They also farm and trade in both food and cash crops, including latex from rubber tree, plantain plantation and cocoa. There are also other members of the communities that engage in logging and lumbering activities. Even though it appears that various villages specialize in different occupations (for example, lumbering or logging is common in Osomba village), in reality there is no clear distinction among communities or community members on the trades that they engage on. Every member of the community appears to be doing a bit of all the known occupational trades in the area. From all indications across the villages, including *Oban, Etim, Aking* and *Osomba*, bush meat hunting and extraction is not a stable and lone occupation that most people of the communities involve in. The non stable nature of hunting as a lone occupation in the area was found to be as a result of two reasons. First, there have been official restrictions on hunting activity by the government in order to protect the park that is located in the vicinity. Secondly, as other livelihood strategies are seasonal in nature, hunting which is an activity that solely depends on the benevolence of nature is also seasonal as there have been differences between the rainy and dry seasons with regard to the quantity and to some extent the quality of harvest.

Generally the average income level among communities' members is very low, where about

Table 1: Personal data on household of respondents in the surveyed communities

	Old Netim	*Aking*	*Oban*	*Osomba*	*Total*	*Percentage*
Sex						
Male	3	4	10	5	22	88.00
Female	2		1		3	12.00
Total						100.00
Age						
20-40	3		2		5	20.00
41-60	1	4	2	3	10	40.00
61-80	1			1	9	36.00
81 above				1	1	4.00
Total						100.00
Marrital Status						
Married	5	4	10	5	24	96.00
Single			1		24	4.00
Total						100.00
Ethnicity						
Ejagham	3	3	9	5	20	80.00
Igbo	1	1	0	0	2	8.00
Efik	1	0	2	0	3	12.00
Total						100.00
Duration of Stay in the Village						
1-30						
31-60	4	1	1	1	7	28.00
61-90	0	3	4	2	9	36.00
Total						100.00
Occupation						
Farming only	1	2	6	3	12	48.99
Farming and trading	1	1	2	1	5	20.83
Pensioner	0	0	1	1	2	8.33
Teaching and farming	1	0	0	0	1	4.17
Business only	1	0	1	0	1	4.17
House wife and trading	0	0	1	0	1	4.17
Farming and hunting	1	1	0	0	2	8.33
Total						100.00
Number of Wives						
1	4	4	10	4	22	91.67
2	0	0	1	1	2	8.33
3	0	0	0	0	0	
Total						100.00
Number of Children						
1-3	1	0	3	0	4	16.00
4-6	3	2	2	1	8	32.00
7-10	1	2	5	4	12	48.00
11-13	0	0	1	0	1	4.00
Total						
Other Relative						
1-3	1	1	2	1	5	38.46
4-6	0	0	3	1	4	30.77
7-10	0	1	1	1	3	23.08
11 above	0	1	0	0	1	7.69
Total						100.00

half of the respondents earning between NGN 1,000- NGN10,000 in a month were the highest 11(45.83%), while very few earned up to NGN 50, 000 in a month, as indicated in Table 2). Bushmeat extraction is also recognised as one of the important sources of income for most villagers in *Oban Hill*. They do not depend solely on it because it does not contribute much to the market economic dynamics and exchange within the communities of Oban Hill. During the study, one of the interviwees, a bush meat seller in Oban village claimed that she used to make much profit in the past, according to her there is very little profit margin or gain from sale of bushmeat in

recent time. She estimated about 20% profit or gain from a bush meat bought for about NGN 1,000.

Different income levels per months were indicated by the hunters (Table 2). The data indicate that farming remains the only other alternative source of income for the hunters (100%) as shown in the Table 2. This alternative source also fetches them different levels of income, as fifty percent of them indicated an income level of NGN 2,000 per month, while the other 50% earn NGN 12,000 per month. While many local community members perceive hunting as non lucrative, which makes them engage in other occupations for income generation, some believe that they have achieved quite a lot for their households' welfare through hunting and sale of bushmeat. This conclusion was reinforced by the response from one of the interviewees, a professional hunter from Osomba village who claimed that he sent his children to tertiary institutions, including one of them abroad in overseas country from the money that he made from the bushmeat and related trade. In his words he reiterates as follows: '*I was once a hunter when I was young and it as through hunting activities that I sent my children to school. One of them is in overseas country…..... It was through hunting that I sent my children to higher institution. I also engaged in logging businesses.'*

Another hunter from a different village also claimed to make quite substantial amount of money from hunting in the range of NGN 20,000 to NGN 30,000 per month if the weather is good without rain or moon light. The observation showed that since it is illegal to kill animals in any of the villages around the hill, it may equally be difficult to have an open market where bushmeat from the forest is sold. According to a trader who sells cooked bushmeat at Oban village, she said: 'I used to go to *Nyamag, Iwuru* and *Akpet* to buy bushmeat.' Her statement corroborates the fact that traders have to travel far away from the villages around the Park in order to buy bushmeat because of the restrictions imposed and the illegality of the business in the area. One of the traditional Chiefs in the area and a Park Ranger coincidentally agreed that those who may be involved in the sale of bush meat smuggle them to Calabar City, about 45 kilometres from the study area, due to the fear of arrest by the forest commission law enforcement agents. Therefore, it is a highly secretive business that a family or household cannot depend on as a major source of income. In addition, two other markets, namely- *Ekong* and *Aninage were mentioned as the major* selling points for the hunters, as revealed from the survey (Table, 2).

Bushmeat as Source of Household Nutrition

In most households, bushmeat was indicated as one of the affordable and available sources of protein. According to most household members, bush meat is significantly more delicious compared to the domesticated animals. Observations revealed that though hunting is not the major work of most communities' members, but the bushmeat from the games compliment the household nutrition sources, as shown in Table 2 which indicates that it is not the most important source of protein for many families. However, most of the people (70.83%) feed three times in a day, while only one household 1(4.17%) feeds four times daily. The table also reveals that fish is the major source (31.03%) of protein in the area, and closely followed by bush meat (22.41%), while beans diet was the least (12.07%). Most of the respondents (42.11%) eat meat every day while only 5.26% indicated that they eat bush meat only seldom. Furthermore, 41.18 percent of the households said that they eat bush meat once in a week, while 35.29 percent eat it twice a week. Those who rarely and sometimes eat bush meat constitute only 5.88 percent. In real terms, the contribution of bush meat to the family nutrition is negatively affected by the existing taboos attached to various animal species. It was revealed (Table 3) by all the households/respondents that some species of animals are forbidden in the Oban area. Among other reasons, personal dislike (56.52%) and cultural taboos (34.78%) are also playing very important role in this attitude.

Bushmeat as Source of Household Medicine and Traditional Healing

For the household health purposes, some of the body parts of the hunted animals are useful in preparation of medicinal concoctions. For example, elephant faces and python fat are medicinal. The fat and oil of Python is used as pain reliever and soothing balm, although it is also believed to be harmful and injurious to humans when swallowed. Some animal parts are also sig-

Table 2: Income and feeding habits of the informants

	Old netim	*Aking*	*Oban*	*Osomba*	*Total*	*Percentage (%)*
Income (N in Thousands)						
1-10						
11-20	1	2	6	2	11	45.83
21-30	1	1	3	2	7	29.17
31-40	2	0	0	0	2	8.33
41-50	0	0	0	1	1	4.17
51-60 above	0	1	0	0	1	4.17
Total						100
Feed Times in a Day						
2	1	2	3	0	6	25.00
3	4	2	7	4	17	70.83
4	0	0	0	1	1	4.17
Total						100
Source(s) of Protein						
Fish	1	3	9	5	18	31.03
Vegetable	0	1	7	1	9	15.52
Beans	0	0	7	0	7	12.07
Livestock meat	4	0	7	0	11	18.97
Bush meat	2	1	10	0	13	22.41
Total						100
Times in a Day/Week Eat Bush Meat						
Sometime	1	0	0	0	1	5.00
Once	2	1	4	0	7	35.00
Twice	1	1	1	0	3	15.00
Three	1	1	3	1	6	30.00
Any time	0	1	0	1	2	10.00
Rare	0	0	1	0	1	5.00
Total						100
Do You Trade in Bush Meat						
Yes	0	2	0	0	2	8.33
No	5	2	10	5	22	91.67
Total						100
Hours Spend on Bush Meat Marketing						
48 hours	0	1	0	0	1	100
Total						100
Other member of the family whom are into the business	Nil	Nil	Nil	Nil	Nil	Nil
Any Species of Bush Meat Forbidden from Eating						
Yes	5	4	10	5	24	100
No	0	0	0	0	0	0
Total						100

nificantly important in the traditional sacrifices during healing exercise by the traditional healers or native doctors.

Wildlife as Materials for Crafts and Rites of Passage

Apart from other economic importance of wildlife, python skin is also used to make drums, shoes, and clothes and apart from this **t**here are other traditional importance attached to some of the parts of these animals that are hunted. For instance, the people of Aking use various animal skins for cultural plays and for chieftaincy symbol. One of the Aking community leaders revealed that 'in the past, the type of animal you kill also attract chieftaincy positions that existed in the past.' This significance of animal killed in determining chieftaincy position appears to be minimal in existence or on decline at the moment in the communities studied. However, those chieftaincies that have been acquired in the past through this source have added pedigree to various families' which is still being recognized even at the present time in these communities. Beside the chieftaincy and status attached to various

animals, animal parts on their own are significant in symbolism in the society. For instance, while adorning eagle feathers symbolizes an achiever and a man of high esteem, various animal parts like tortoise shell are remarkable for traditional healers in most societies.

Community Wildlife Exploitation and Conservation Rules and Strategies

Most people in the communities studied are mainly Christians, which may be as a result of the early influence of Christian missionaries in the area. Traditional religion, which includes ancestor worship and reverence to other gods, is no longer popular or common. The presence of shrines and places of worship and sacrifices for the local communities have drastically reduced in these communities. However, in spite of the increasing decline in traditional religion, beliefs and taboos form very strong part of the guidelines for both extraction and consumption of bushmeat in the various communities of Oban Hill. Taboos and beliefs come in form of totems for different villages, families, households and even individuals. They underlie the 'ought not' with regard to animal killing and consumption. More importantly, reasons, especially traditional oriented ones are attached to theses totems, which make these animals forbidden creatures. In most communities, for those who have taboos, anybody that breaks such law may be infected by diseases that are believed to be inflicted by ancestors, which usually requires some particular sacrifices to appease the gods of the land in order to cleanse or heal the infected. Most communities' members of the Oban Hill understand both in principle and practice with regards to totems and taboos of various animals. Speaking from a relatively modern and alien conception a school teacher at Oban maintained that there is no animal that is meant not to be killed or eaten. Though he knew that the decision by some people not to kill a particular animal or eat a particular meat may be for spiritual reasons, which implies that taboos are sometimes religious observances and preferences. In his words: *'There is no general rule or laws that say that a particular animal should not be killed or eaten. Though individually, many people may not want to kill or east certain animals based on their individual life experience or through spiritual instruction……there is no animal that I cannot eat except black snake because it looks so dreadful and more also when it is not properly cooked it can cause body rashes and itching.'*

The above position differs remarkably across villages. According to one of the interviewees who is one of the Park Rangers he said: ' in some communities among the *Ishobo*, they have some animals that should not be killed based on culture and tradition of the people, but in this part of the Oban sector of the Park, most communities do not have such taboos any longer.' The position by some interviewees that various taboos are either no longer in existence or are rendered ineffective and that there is no animal that is forbidden in the area of study at the present time hugely contradict what exists in reality in the study area. Those who are inclined to such positions are either ignorant of the reality or are merely pretending to the contrary due to their belief in the non-traditional religion such as Christianity. Observation from the study sufficiently supports the notion of the existence of taboos and totems which constantly guide the peoples' choice of what to eat and what not to eat. It is a common practice as the study revealed that buyers of cooked bushmeat usually ask for the identity of the meat or the animal source of the meat before they purchase. One of the bushmeat sellers interviewed at Oban village claimed not to have known why people usually ask for the identity of meat before they can purchase or eat them, though she pointed that some ethnic groups do not usually ask for or eat particular types of meat. According to her: *'Anybody who wants to buy cooked bush meat from me usually asks for the type of animal before buying. For instance the Igbo (Ibo) people do not like monkey meat, while the Akwa Ibom people of mainly Ibibio and Annang ethnic groups also do not like monkey. It is forbidden in their areas.'* The comments from the bushmeat seller sufficiently indicate that she understands that people from various ethnic groups observe taboos that are attached to the killing various animals and consumption of some meats proceeds.

From this study it is obvious that the notions about taboos by most communities in the Oban Hills sector may not be really emphasised, even though such de-emphasis does not automatically lead to or mean the denial of the existence of such ideals. Rather, taboos are disre-

garded and broken by contemporary generations who do not believe that such action can lead to fatal consequences as they have been made to believe by their custom custodians. Taboos as observed from the fieldwork in the study area would have been very strong in the past, which has considerably declined leading to little or no recognition of such in the recent time. However, the survey revealed as indicated previously (Table 2) that all the households responded in a unanimous affirmation to the fact that there are animal species that are forbidden to be eaten by different people due to one reason or the other. Table 3 indicates species of wild animals that are forbidden among respective communities around the Oban Hill.

Table 3: Some forbidden wild animals species among communities around the park

Species	*Old Netim*	*Aking*	*Oban*	*Osomba*
Alligator (Alligator mississippiensis)	Yes	Yes	Yes	Yes
Bush pig (Potamochoeus porcus)	Yes	No	Yes	Yes
Boar (Sus scrofa) Elephant	Yes	Yes	Yes	Yes
Elephantidae (Loxodonta cyclotis)	Yes	Yes	Yes	Yes
Monkey (Catrol Vancliechin)	No	Yes	Yes	Yes
Snail (Helix aspersa)	Yes	Yes	Yes	Yes
Snakes	Yes	Yes	Yes	Yes
Tortoise (Testudinidae)	Yes	Yes	Yes	Yes

Further effort by the community members to protect the wildlife species shows more vividly in their formation of functional cultural associations which are involved in the wildlife conservation in the communities where they exist. Among these groups, *Mgbe* has the widest recognition among villages followed by *Angbu*. Other cultural associations include *Adenwa, Momikin, Obon, Egbe, Nabor* and the Women Association. Jimoh et al. (forthcoming pers.com) recorded these cultural associations and the seven laws and taboos in practice, which are relevant to sustainable use of natural resources in the Oban Hill communities (Table 4). For instance, *Ofu Anakae* is a traditional law which forbids women from hunting on some days. The violators of *Ofu anakae* may be asked to go to the 'evil forest', present four bottles of native gin and one jar of palm wine to the community as a fine and penalty for cleansing. Similarly *Ofu Dibu* is a traditional law which forbids men from hunting on selected days. Usually, there are strict penalties imposed on the violators of these traditional laws or taboos. For *ofu dibu*, anyone who contravenes the rule is made to bring a live goat, some tubers of yams, bunches of plantain and two cartons of beer.

In recent time, the community members have the impression that they are being marginalized by government in the process of conserving the forest resources through the statutory laws only, without involving relevant institutions of the communities that are effective and respected in social control. They believed that at least some of their cultural associations should have been involved in the conservation so as to reduce the feeling of marginalization. These include the youths who can assist in protecting the park against external encroachment, which is based on the fact that they believed to be very physically endowed, aggressive, strong, fast and active. It is also a strong opinion from the community members that the community leaders and the *Mgbe* deity should be involved due to some attributes that they possess. The reasons given for the involvement of community leaders is that they possess the wisdom to guide the youths and other members, while the deity possesses some spiritual characteristics that are capable of producing social control on the majority of the people.

Table 4: Indigenous cultural institutions, traditional laws and taboos in the communities

Cultural institutions	*Traditional laws/Taboo*
Mgbe	Ofu Anakae
Angbu	Ofu Dibu
Ademwa	Law against use of chemical for fishing
Momikim	Law forbidding women from touching Civet cat
Obon	Law or taboos that forbid hunter from killing pythons
Egbe	Law forbidding pregnant women from eating elephant
Nabor	Law or taboos thatforbid hunter from killing leopard
Women Association	

Local Community Members' Attitudes towards Wildlife Hunting and Conservation of Wildlife

From the study, there is an understanding on the local peoples' and community members' attitude toward wildlife hunting and conservation policy. However, there is no clear perspective on whether they actually understand the policy document. For instance, a school teacher from Oban village affirmed that he is aware of the animals that are labelled 'endangered species' such as pangolins, the monkey, and elephant among others. He actually knew that killing such animals is seriously forbidden and anybody caught hunting such animals will be seriously punished by the law. Knowing quite well that the policy is made in order to avoid total elimination of the endangered species as it is known that some animal species in various parts of the world had since gone into extinction; even some of the educated members of the community are hard to believe the main thrust of this policy. It is a common believe in the Oban Hill communities that animal species cannot be totally eliminated in the bush. The reality that it takes a hunter longer time to reach the animals in the bush does not mean that they are no longer there in the bush. Their believe is that the animals that are no longer seen are not necessarily in extinction, rather the hunting activities and the quarry industry make them to run far away from the Parks due to noise and human activities factor..

In spite of the above opinion, some community members really believe that some animals have disappeared and have probably gone into extinction. The pangolins, bush cow etc are believed to have been eliminated in this area, according to the Chief of *Aking*, one of the villages around the Park: The major concern among the people is that most of their children do not know such animals that have disappeared. The preserving of such animals that are nearly extint in the environment through strict conservation policies and enforcement are necessary in order to allow the natural cycle of regeneration of the animals concerned. Put differently, another concern is that the incoming generation may not know most of the animals if they are not preserved. A school teacher from Old Netim succinctly puts is thus: *'Like our children, most of them do not know some of these animals. If they are better preserved, they will produce more and will not be destroyed. Continuity makes our children to see these Animals. It will also contribute to education and preservation of our natural environment. It also gives animal nutrition for body development.'* There are other consequences that are contemplated by the people when the animals are no longer available or within reach to be extracted. Most community members believe that, if these animals are getting reduced it means the human protein required by the body for development and growth will also reduce, which may lead to diseases and sickness. From a political point of view, most village members and their Chiefs and the community members are not happy about the fact that the government has instituted this conservation policy, by using their bush/forest for that purpose as most households depend on the forest for their livelihood.

An understanding of the wildlife species that abound in the area of study will add more value in future studies in the area eventually if they have gone into extinction or nearly in extinction. It is evident that while some species are disappearing or have disappeared in some locations they are present in other locations and communities. For instance Boar, Chimpanzee, Crocodile, and Gorilla are no longer found in Old Etim. Table 5 shows the varieties of species that are found in the four villages of Old Netim, Aking, Oban and Osomba in the Oban Hill.

Table 5: Wildlife species present or absent in the communities

Animal species	*Old Netim*	*Aking*	*Oban*	*Osomba*
Antelopes	Yes	Yes	Yes	Yes
Boar	No	Yes	Yes	Yes
Bush pig	Yes	Yes	Yes	Yes
Chimpanzee	No	Yes	Yes	Yes
Crocodile	No	Yes	Yes	Yes
Duikers	Yes	Yes	Yes	Yes
Elephants	Yes	No	Yes	Yes
Grass cutter	Yes	Yes	Yes	Yes
Gorilla	No	Yes	Yes	Yes
Monkey	Yes	Yes	Yes	Yes
Pangolin	Yes	Yes	Yes	Yes
Porcupine	Yes	Yes	Yes	Yes
Python	Yes	Yes	Yes	Yes
Tiger	Yes	Yes	Yes	Yes
Tortoise	Yes	Yes	Yes	Yes
Snakes	Yes	Yes	Yes	Yes

NB: Yes = Present No = Absent

It is a common opinion among the Chiefs and village heads that, when the bush was taken away from their control, government promised to support the local people and provide alternative means of livelihood for them, as they are not allowed to hunt in the (their) forests any longer. The government promised to establish fishponds, snailing, open farm lands, access roads and to give micro loans to members of the community to engage in the above mentioned ventures and piggery farm. The extent to which theses promises have bore fruits is highly contestable because the reality on ground appears to suggest that nothing has been done to assist members of the communities who at the same time were restricted from accessing the bush to hunt for their animals as a source of daily sustenance, hence there is limited space to use as farm land. Apparently, there is high level of unemployment coupled with non- employment of their youths in the National Park, which according to them is of no benefit to them. They seem not to be in tone with the government ownership and control policy which they believed would have been more beneficial if a private company manages the forest and its resources. It is evident that the community members are not happy about conversion of their hitherto farmland and hunting forest to National Park, following the enabling laws which have impoverished most community members and would have been better in a 'without situation.'

Most members of conservation authorities like the NGOs, and some officials are not particularly optimistic that the policy on ground which established the National Park will end hunting and related activities in the Oban Hill. In this regard, a conservationist with one of the NGOs reiterated by summarizing the notion as follows; '*If anyone tells you that hunting activities should stop such as person is not being realistic. I have been an educator for over 12 years; it is not realistic that hunting of wildlife will stop*. The conservationists position has always been that ordinary members of the communities, including the hunters do not yet understand the scientific logic and rational for wildlife conservation when they do not have alternative sources to meet up with the needs which the forest resources have served them. Therefore conservation idea can only succeed when the hunters and community members understand some of the concepts before the conservation idea will then be internalized within the hunter.

General information on households' perception on the Park revealed that the CRNP establishment is known to many members of the communities as the study revealed that a majority of the respondents (85.8%) from various villages agree to be aware of the existence of the CRNP around their vicinity, while only 14.7 percent claimed not to be aware. The Majority of the respondents also expressed the community members' desire to be part and parcel of the Park management. On this basis, 96 percent of the respondents welcome the idea of communities' involvement in park management in some aspects such as park vigilantism, policing and protection (35.29%), decision making (32.35%), advisory services (20.59%), and park maintenance operations (8.82%). However, there were some community members who did not welcome the idea of the communities' involvement in the Park because they felt that the existence of the park is of no benefit to them and that the management of the park does not carry the communities along..

DISCUSSION

This study addressed the question on how important is bushmeat extraction for smallholder's livelihoods currently in Oban Hills communities of Nigeria. Previous studies have documented that Bushmeat (non-domesticated forest mammals harvested for food) is an important contributor to food security (Fa et al. 2003), however, we are only starting to understand the bushmeat's contribution to household economies, its value in poor people's lives, and its importance to different social groups (Ashley et al. 2002; Davies and Brown 2007). It appears that many traditional forest peoples completely depend on bush meat and lack an alternative source of income and protein (de Merode et al. 2004). Depending on the remoteness of the areas under study, bushmeat may constitute between 30-80% (SW Cameroon), 80-98% (E Cameroon) or 73% (Gabon, see CBD 2008) of the protein intake. It is pertinent to note that in as much as bush meat harvesting and extraction remains one of the sources of livelihood for the people of Oban Hills in Nigeria; this study did not confirm it as the most important source of income, protein, and nutrition, and health service. The

people of this area are engaged in other lucrative activities like farming, lumbering, stone work or quarry and even civil service, which are regarded as more important occupations than hunting. Similarly, meat from the harvested wild life ranks second after fish as protein sources followed by beans. However, one cannot rule out the omnibus importance of bushmeat harvesting and extraction in the people's livelihood in the past, when other activities like quarry were not yet established. Even though the results from this study differ from those of the previous scholars, it indeed conforms with and re-validates the findings of those who believe that bushmeat consumption does not entirely constitute the greatest source of protein intake, mainly among rural dwellers, whose main concern is to make financial and monetary gains from the sales, in which process the bushmeat becomes a very active part of a complex commodity chain, linking rural hunters to urban and rural consumers. According to Bowen-Jones et al. (2002), bushmeat is considered as a delicacy in urban areas where people are willing to pay a premium for it, while in some areas, especially in the rural areas where they are derived, it is evident that bushmeat contributes little to the diet and more to their income (de Merode et al. 2004).

The benefits with bushmeat economic activity are its low barrier to entry and high returns with minimal investment, perfect for risk-aversive small farmers whose main constraint is labour. The trade is mostly unregulated and decentralized and so a considerable proportion of the product value remains with the hunter (Brown and Williams. 2003). Usually, men profit as hunters and women as traders (Bowen-Jones et al. 2002). The extent of the volume of bushmeat production in Oban communities remains uncertain, as this current study has not finalised the economic portfolio of the hunters and traders in the business. However, the extent of the volume will be quite considerable as information from other African regions has shown quite a huge production. Bennett (2002) estimated the scale of the bushmeat trade in Africa at between 1 and 3.4 million tonnes per year (Bennett 2002), in which Central Africa alone may be responsible for harvesting over 2 million tonnes per year (Fa et al. 2003).

On the long run, the local community members perceive bush meat as a source of long-term livelihood benefits. In addition to those already mentioned above, the people perceive sustainable exploitation of the wildlife resources in terms of adhering to the conservation policy as advantageous for the future of their communities. For instance they understand through their local intelligence that adhering to the rules of wildlife conservation will lead them to having enough wildlife to eat in the near future as the conservation practice allows the animals to reproduce. Besides, sustainable exploitation will ensure non total elimination of the species, especially those that have been labelled endangered species, which as most of the community members reiterated may achieve the purpose of retaining various animals' species from the present generation to the future. In other words, the preservation of the animals will make it possible for their children and the generations yet unborn to see these animals. Sustainable exploitation of the animals will also translate to sustainability and continuity of cultural practices where parts or whole of an animal or animals may be required. For instance, in traditional medicine and rites of passage from one social status to another, various animal parts still play important roles in the contemporary communities.

How social beliefs and taboos have a long-term influence on wildlife management systems was revealed in this study. A taboo can be defined as "a prohibition imposed by a social custom or as a protective measure". Taboos represent informal institutions based on cultural norms and like many other aspects of culture, are mostly ignored in wildlife management despite the fact that biodiversity hotspots are frequently associated with traditional societies where many taboos occur (Posey and Dutfield 1997). Taboos, as expressive notions representing informal institutions are decentralized and self-enforced (Knight 1992) in traditional societies.. Taboos are more common in communities with pool or communal resources that can exclude outsiders and regulate their use (Berkes in Hanna et al. 1996). The existing taboos in the Oban hills communities with regard to wildlife harvesting can be described or classified within the six major categories of resource and habitat taboos (RHTs) that may play a role in nature conservation, as has been previously identified and defined by Colding and Folke (2001).[1] These include segment taboos, temporal taboos, method taboos, life history taboos, species–specific taboos, and habitat taboos.

At present among Oban Hill communities there are still social beliefs and taboos attached to killing and eating of various animal species. These taboos are 'ideal' type consideration with strong superlative 'ought' and 'ought not' in relation to animals. Ideas or the existence of totem was not identified as a factor in maintaining wildlife conservation as most of the community members subscribe to Christian religion. However, the study revealed that there are specific animals that are neither killed nor eaten by different villages, which raises the question of seeming ignorance or pretence about the existence of the taboos in the communities as the explanation is still vague from the local communities on the reasons why some individuals and groups do not eat or kill certain animals. The extent to which the 'idea of forbidden animal' may enhance wildlife management is not certain in these communities because the local community members are not the only people that poach the forests in search of these anaimals. Even the animal species that are supposed to be in abundance due to the existence of some social beliefs or taboos in one community may be target for strangers within the same community or hunters from outside the communities as was revealed in the study. What has manifested as an important factor for preservation is peoples' taste especially dislikes for bush meat from various species. However, adhering to social beliefs and taboos may actually have a long-term positive influence on wildlife management systems if it is sustained, refined or integrated into the body of modern wildlife conservation protection mechanism in Nigeria.

Generally, even though the local community members are aware of the conservation policy in practice, they seem to unanimously agree that the implementation of the policy is non inclusive as far as they are concerned, in which case the responsible government authorities have excluded the local authorities in the conservation efforts. The success of conservation policy such as the one under this study can only succeed if there is a wide consultation between the community leaders and the National Park authorities who are statutorily mandated to manage the protected areas in order to make it look home grown. The above revelation from the current study corroborates the notion of institutional challenges of community wildlife management from previous studies (Hurst in Davies and Brown 2007). These challenges are pitched on the basis that wildlife management models in forests have often favoured the exclusion of potential users and local communities as it is the case in Oban hills, from the resource, which leads to cultivating an opportunistic and "grab-it-first' mentality among stakeholders and leaving no incentive for long-term oriented management. The present study revealed those community members beliefs that wild life hunting should be allowed to some extent, rather than their total ban, which indicates the level of understanding and importance that the people attach to the wildlife resources over the years as an important source of livelihood. It could be that these local beneficiaries from the forest resources are not very clear on the intentions of the government for the restrictions on the harvesting of these wildlife resources, which in their social and cultural space are deemed theirs. It is against previous observation such as this that Brown et al. (1999) suggested innovative strategies which should cultivate a sense of resource ownership and stewardship among local communities. Involvement of local communities in management schemes however, requires well thought out planning, long-term commitment and thorough practically oriented research in advance (Bowen-Jones et al. 2002). Coordinated efforts involving diverse players and groups such as hunters, consumers, traders, logging companies, forest managers and moving away from the "one tool for all approach" is needed. The current study shows that the people of various communities in Oban hills are not particularly happy that the government reneged on her promises of creating alternative livelihood for them when their land was taken away for the CRNP project. The quagmire of providing alternative sources of livelihood for communities that are dependent on natural resources, wildlife for example have been echoed sufficiently in previous studies. It is a common belief by many scholars that alternative sources of livelihood for receiving communities have to be considered and their feasibility examined on a case-by-case approach since social, ecological and political factors differ between locations (Ngoufo and Temgoua 1997).

The question on whether sustainability can be achieved under current socio-cultural, economic, policy and environmental conditions in the Oban Hill region ignites arrays of res-

ponses. Such question has a very broad implication towards addressing the sustainability of any forest resources management approach, such that collection of good baseline social and natural science data are required during the planning process of any initiative, as previously indicated by previous scholars (Ngoufo and Temgoua 1997; Olsen et al. 2001). An evaluation of the Oban Hill region situation, incorporating the above conditions suggests some expert interventions to achieve sustainability. With the present economic, social and cultural situation in the area, sustainability can only be achieved given the availability of alternative sources of livelihood open to the people to choose from. However, the policy environment and implementation condition at its present shape may not be able to lead to sustainability of wild life harvesting without a more inclusive design that incorporates the local knowledge and ideas. From a more realistic point of view, there are some critical issues and conditions to be monitored very closely, as exploitation is increasing due to growing human populations, improved access to undisturbed forests, changes in hunting technology, and scarcity of alternative protein sources (Robinson and Bodmer 1999; Bennett and Robinson 2000; Fa et al. 2002) irrespective of the local community in question.

CONCLUSION

Empirical evidence from this study indicates that bushmeat is not the main source of income, protein requirement and health for the people of Oban Hills, Nigeria. The inhabitants of this area are predominantly farmers while some engage in other occupations like quarry business or work in the query, trading, logging, civil service and hunting. Some farmers also combine farming with hunting in order to increase the household income and nutritional supplement. Despite the restrictions on hunting of wildlife in and around the Cross Rivers National Park, the potential profits derivable from the activities compared to its low labour input has sustained the extraction of wildlife resources in the area. Furthermore, the demand for bushmeat by urban dwellers who are willing to pay a premium for the commodity also improves household income from trade in bushmeat. This thrives against the backdrop of failed promises by the government to provide alternative sources of income and protein intake for the inhabitants of Oban Hills.

The existence of beliefs and taboos related to wildlife extraction which played a significant role in wildlife conservation in the past should be integrated into current conservation efforts. These taboos prescribed wildlife species that are prohibited from hunting and/ or killing with varying degrees of punishment for defaulters. This study revealed the existence of taboos and totems related to wildlife harvesting which is in operation among communities and individuals in the study area. Sustained community wildlife management approaches which involve important stakeholders like hunters, bushmeat traders, consumers, logging companies, NGOs, the academia, and the forests manager is perceived as the right approach to ensuring sustainable exploitation of wildlife in Oban Hills, Nigeria.

RECOMMENDATIONS

Based on the concluding remarks that emerged from the study, the following recommendations are made in order to achieve sustainable harvesting of the bushmeat resources in the area.

- The already alternative sources of livelihood engaged by the people need to be supported by the government by abiding to their promises of establishing small scale ventures and micro-finance outlets for the people.
- The strategies for harvesting bush meat, especially the use of poisons and traps should be discouraged through a very strong penalty.
- The conservation policy and its importance should continuously be made clearer to the people, across different generations.
- Similarly, local community representatives should be incorporated into the wild life management policy or advisory committee and implementation in Oban Hill.
- The conflicting laws with regard to enforcement and monitoring should be harmonized and if there is no available laws that can control international poaching, there is a need establish or to adhere to any existing cross border legislation.
- Public enlightenment and education with regard to promotion of cultural taboos and

totems should be encouraged wherever they are identified.

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NOTES

1. Segment taboos function to decrease hunting and harvesting pressure on local populations of wildlife and plants by banning the use of particular species at particular times for people of a particular age, sex, or social status, probably to avoid game depletion (Ross 1978, cited in Colding and Folke 2001). Temporal taboos, banning access to resources during certain times, and method taboos, banning certain exploitation techniques, function in the same way. Life-history taboos, banning the use of certain vulnerable stages of a species' life history maintain stock recruitment (Gadgil 1987, cited in Colding and Folke 2001). Species-specific taboos give total protection to particular species, while habitat taboos function by restricting access to certain areas (Colding and Folke 2001), which are most well known from sacred forests in Africa, e.g. in Ghana, Kenya and Nigeria (Adebisi 1999; Colding and Folke 2001).

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