

Chimpanzee in Ethno-Primatological Practices and Its Implications for Biodiversity Conservation: Kimbi-Fungom National Park and Kom-Wum Forest Reserve, Cameroon

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Abstract: Chimpanzees (*Pan troglodytes ellioti*) in ethno-primatological practices among the indigenous people and the implications for biodiversity conservation in the Kimbi-Fungom National Park (K-FNP) and Kom-Wum Forest Reserve (K-WFR), was undertaken to investigate indigenous people perceptions of human-chimpanzee interactions and the effects on wildlife sustainability and biodiversity conservation. Data collections were obtained with the help of interviewer-administered questionnaire, informal interview using unstructured script, palaces/markets gathering discussion and direct field observations of trade. Surveys were carried out in twenty two villages purposefully selected based on their locations and human activities within the proximity of the park and reserve. A total of 288 interviewers were completed during the study. Most of the respondents 94%, 72% and 98% reported that chimpanzee's body parts/meats are used for medicinal value, rituals and as food in special occasion respectively. About 36 diseases/conditions were randomly reported to be treated by 22 different chimpanzee's body parts/meat. The usual price of a matured chimpanzee was reported to be in between 75,000-250,000 francs.cfa. Equally, the unsustainable hunting of chimpanzees for body parts/meat was explored to be caused by loss of traditional taboos and totemic beliefs, influx of new cultural practices from Nigeria and within, poverty increment that hinders modern health assurance couple with the fact that protective laws are both less well known and less appreciated. As such, it is imperative that strategies should be put in place to effectively get rid of human activities that negatively impact on biodiversity conservation of chimpanzees in the vicinity of the park and reserve.

Keywords: Chimpanzees, Ethno-Primatology, Biodiversity, Conservation, K-WFR, K-FNP

1. Introduction

Pan troglodytes ellioti, just like all other Chimpanzees and their products constitute essential ingredients in the preparation for traditional medicine (Gaski and Johnson, 1994). In addition, to their significant role in traditional healing practices, they are equally used for fetishes, magic ritual, ceremonial/festivals, religions practices and used as pets, as performing entertainers or in biomedical research of societies all over the world (Redmond, 2010 and Fuentes and Wolfe, 2002). In Africa, the exploitation of chimpanzee and some primate species is largely prohibited because local

communities adorned them with ritual meanings, regard them as animal totems, or value them as fetishes or aids to traditional medicine practice as well as to achieve spiritual enlightenment and elevation (Osemeobo, 1991, Adams, and McShane, 1996, Sawandi, 2006, Dedeke et al., 2006). This means that "Ethno-primatology" which studies the complex interactions between humans and non-human primates (Wolfe and Fuentes, 2007) are practices among the indigenous people which existed long before the advent of modern health facilities in Africa (Adeola, 1992). People were especially depended largely on traditional medicine as their only source of health care (Soewu, 2008). Today,

despite the increasing number of western medical practitioners and modern medicine, the availability of traditional medicine invariably outweighs that of modern medicine and the number of traditional practitioners in most remote regions of Africa is far greater than the number of western medical practitioners (Soewu, 2008). As such, Chimpanzees and other primates are already becoming very rare in most of their suitable habitats due to indiscriminate killing for their body parts/meat as a result of high demand for traditional practices (Kakati and Doulo, 2002 and Tsi and Chuo, 2016). Equally, increase in human population density combined with increases in agricultural and pastoralist activities, plus increased exploitation of non-humans primates as bush-meat (Peterson and Ammann, 2003 and Fa et al. 2002), are major causes for their continuous decline.

In Cameroon, ethno-primatological uses of chimpanzee's body parts/meat for traditional medicine, rituals and festivals are very common especially in many remote areas of the country (Ekinde et al., 2005). Equally, the use of chimpanzees and other primate's body parts/meat for traditional medicine continues to actively live side by side with modern medicine (Etiendem, et al., 2011). However, in areas where social facilities such as pharmacies, health clinics, electricity, and piped water are largely absent; people rely heavily on traditional healers for health care (Atem, 2000). As such, many of the traditional practitioners in remote areas have made new discoveries, which now cured major ailments in the society (Marshall, 1998). Such discoveries stem from the consistent efforts of traditional healers to eradicate dangerous diseases which are believed to be caused by sorcery and/or loss of ancestral protection (Atem, 2000), and which are apparently incurable through modern medicine (Tsi and Chuo, 2016). Major diseases such as epilepsy, cancer, convulsion, paralysis, snake bites, mental illness, and even other ailments having hereditary origins are now being cured using chimpanzee and other primate body parts (Ekinde et al., 2005). This has given room for their unsustainable hunting.

The K-FNP and K-WFR are among the priority sites of the Bamenda Highlands, reported to support high levels of biological diversity and endemism (Doumbé, 2014; CIRMAID, 2015). The Nigerian-Cameroon chimpanzee (*Pan troglodytes ellioti*), which is the sub-species commonly found in some priority sites of the study areas is the most endangered of the four subspecies of chimpanzee. It has been estimated to have experienced a significant population reduction in the past years due to high levels of exploitation, loss of habitat and habitat quality as a result of human pressure (Morgan et al., 2011). It has the smallest distribution and smallest population size, estimated between 3,500–9,000 individuals (Morgan et al., 2011). As such, the species is classified by IUCN as Endangered (Oates et al. 2008a), and classified in CITES list of Appendix I, and is also strictly protected by the Cameroon wildlife law and placed in class A (MINFOR, 2007). The common dilemma facing *Pan troglodyte ellioti* species in these areas is the soaring demand for their body parts for use in traditional medicine, nutritional, rituals, ceremonies, festivals and “animistic myths”. As such they are becoming very scarce

due to indiscriminate killing to achieve spiritual enlightenment and elevation (Ekinde et al., 2005 and Tsi and Chuo, 2016). Poaching and the bush meat trade display of body parts/meat to markets and restaurants and display of chimpanzee and other primate pets is more frequently found near the border of Western Cameroon and Eastern Nigeria (Chuo and Tsi, 2017). Here, protective laws are both less well known and less appreciated. The smuggling of chimpanzees and body parts is so common in this area and it is transported over bushy land on foot, through boats and rarely on motorbikes (Chuo and Tsi, 2017). Anthropogenic disturbances such as habitat loss and fragmentation, the hunting of infant chimpanzees for the pet trade, and casual deaths from crop raiding are the main threats of *Pan troglodytes ellioti* and other primates in the study areas (Oates et al., 2008b and Morgan et al., 2011).

2. Method

2.1. The Location of the Study Area

2.1.1. Location of Site I: (Kimbi-Fungom National Park)

The K-FNP is situated in the North West region of Cameroon where it covers a total area of 95380 hectares. It is located between latitude 6° N and 7° N and longitude 9° E and 10°E. It has an altitude of about 900m to 2140m above sea level in the mountains and about 200m to 600m in the valleys (COMAID, 2014). It was created by prime ministerial decree number 2015/0024/PM of 3 February, 2015 and spreads within 3 divisions of the region as follows;

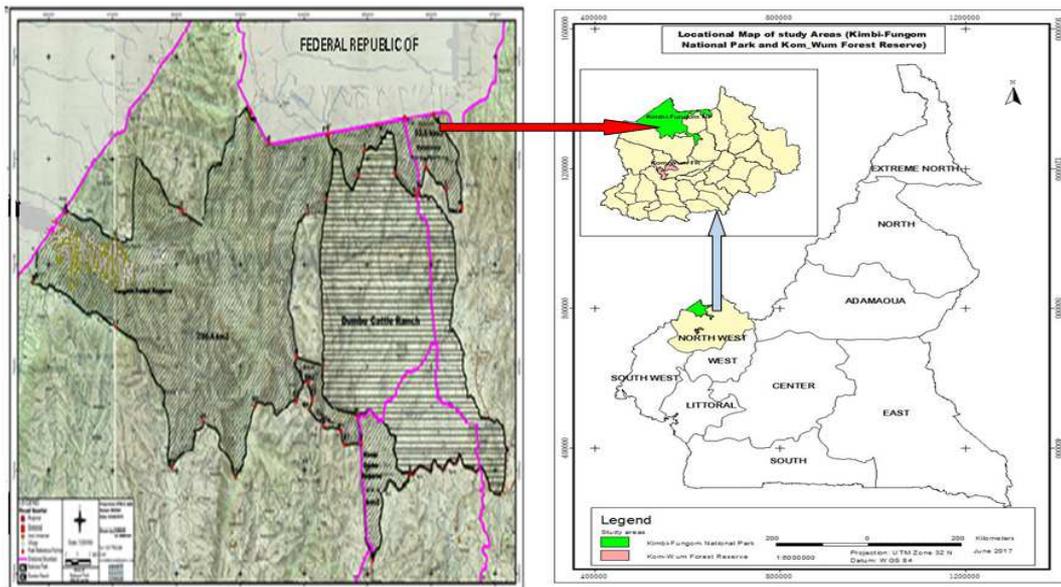
Donga Mantum within Misaje Sub-Division and Ako Sub-Division

Boyo Division within the Sub-Division of Bum

And Menchum Division within Fungom and Furu Awa Sub-Divisions

The northern section of the park runs along the Cameroon-Nigeria border, while the Eastern, southern and Western parts of the park are within Cameroon territory (Tata, 2015). It equally share boundary with the Dumbo Cattle Ranch in the north eastward site. The main rivers flowing through this area are the rivers Ivin, Menchum, and Kimbi. All of these join the Kasina-la, which flows into Kasina-la State, Nigeria.

This national park was realized after the merging of two reserves; the Fungom Forest Reserve (created in 1936) and the Kimbi Game Reserve (created in 1964 and situated in the Western High Plateau region of Cameroon and falls within the Mount Cameroon chain of volcanic mountains range that extends from Mount Cameroon (4,095 metres altitude) on the coast, through Mount Oku (3,011 metres altitude) to the Adamoua plateau, (Tata, 2015). The K-FNP is surrounded by the following main villages: Dumbo, Sabon-Gida and Gida-Jukum to the north, Kimbi, Su-Bum, Buabua, Cha and Fungom to the south, Mashi, Mundabili, Munkep, Nkang, Akum, Nser, Badji, Turuwa, Sambali, Lutu, to the west and Esu, Kwept, Gayama to the east. Figure 1 shows the map of the Kimbi-Fungom National Park in then North West Region of Cameroon.



Source: Adapted from COMAID map drawn for MINFOF, (2014)

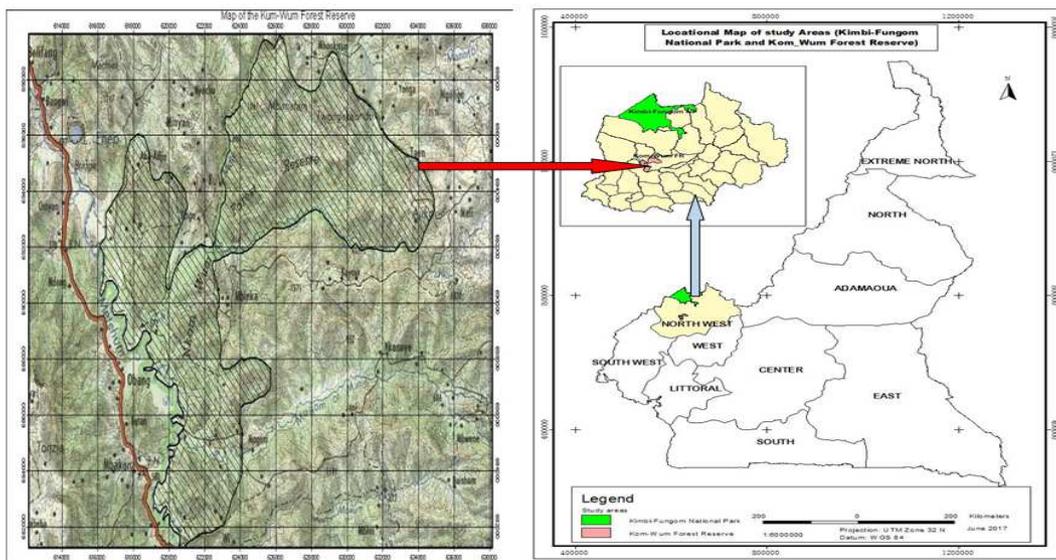
Figure 1. Map of Cameroon showing location of the K-FNP in the NW Region of Cameroon.

2.1.2. Location of Site II: (Kom-Wum Forest Reserve)

The K-WFR is situated in the North West region of Cameroon where it covers a total area of 17000 hectares. It is located between latitude 6° N and 7° N and longitude 9° E and 10°E. It has an altitude of about 500 and 1,500m above sea level in the mountains and about 200m to 600m in the valleys (Morgan et al., 2011). It was created in 1951 and was followed by reforestation initiatives that were implemented (but later neglected) by the National Forestry Fund. It spreads within 2 divisions of the region as follows;

- Boyo Division within the Funding Sub-division
- And Menchum Division within Wum Sub-Divisions

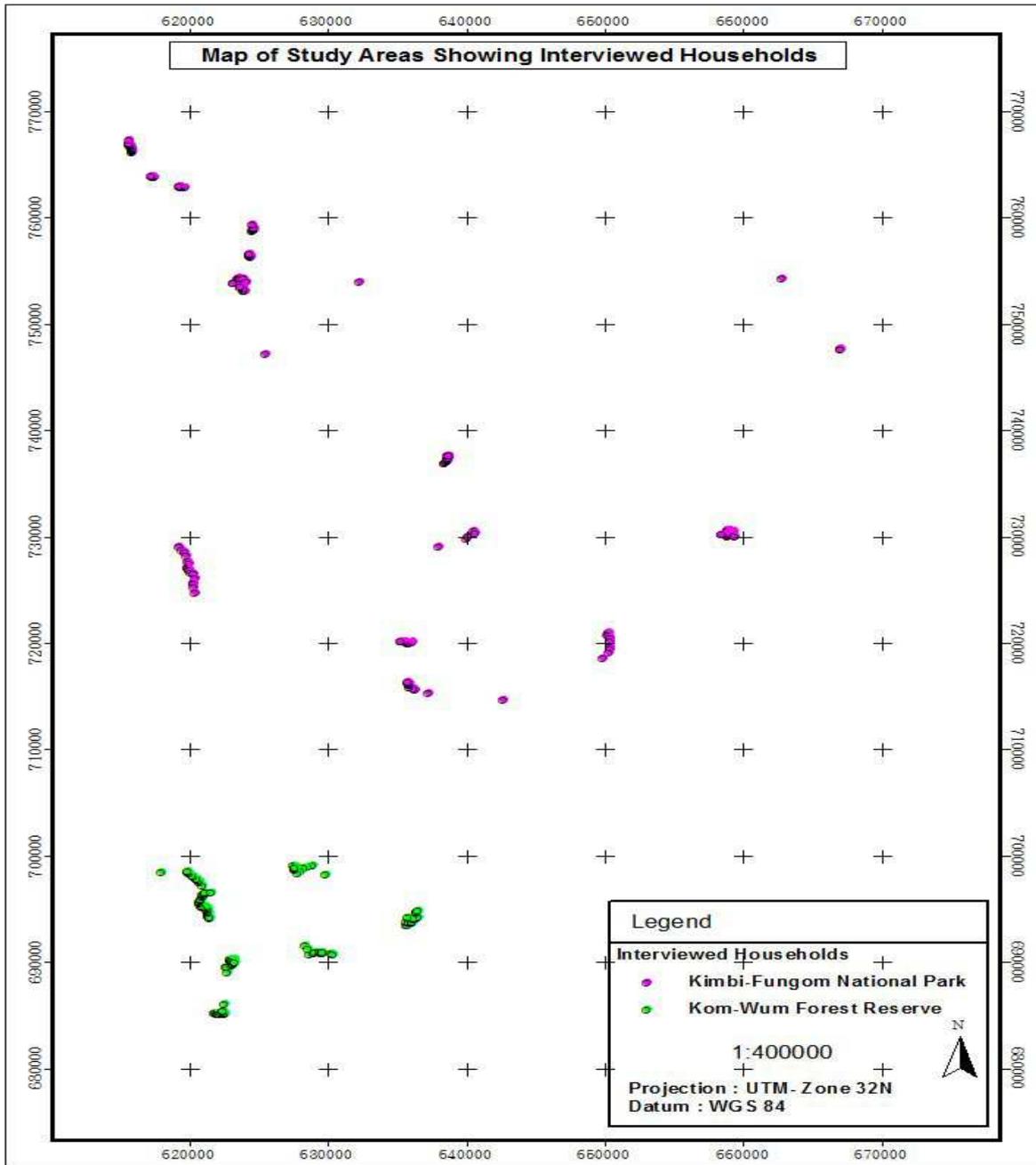
The K-WFR extends towards the western boundary of the region which stretches along the international border between Cameroon and eastern Nigeria. The main rivers that flow through this area are the rivers Ivin, Menchum, Nzele and Kimbi. All of these join the Kasina-la, which flows into Kasina-la State, Nigeria. It is presently managed by the Fundong and Wum councils. The K-WFR is surrounded by the following main villages: Maholm, Mbengkas, Biaso, Mentang, Mbongkesu and Bu. Figure 2, shows the map allocation of the Kom-Wum Forest Reserve in Boyo and Menchum Divisions, North West Region of Cameroon.



Source: Adapted from COMAID map drawn for MINFOF, (2014)

Figure 2. Map of Cameroon showing location of the K-WFR in the NW Region of Cameroon.

2.2. Data Collection and Data Analysis



Source: Field Survey, March, 2015-November 2016.

Figure 3. Map of the study areas, showing interviewed household.

Data collections for *Pan troglodytes ellioti* in ethno-primatological practices among the indigenous people and the implications for biodiversity conservation in the K-FNP and K-WFR, were carried out with the help of interviewer-administered questionnaire survey, informal interview using unstructured script, palaces/market gathering discussion and direct field observations of trade. To bring out the knowledge and awareness of ethno-primatological practices of the indigenous people, questions were especially formulated as to which body part/meat are used for traditional

medicine/rituals/food, if they exist traditional beliefs/taboo, folklore/myths and practices that can determine the conservation of this species. More again, questions were link to the geographical origin of Chimpanzee body parts/meat, the prices and the scale of the trade (i.e. whether at a national, regional, or transnational level) and if they are still being hunted. Direct observations of the trade and practices were conducted in the market and borders and field notes taken. Every observation heard and/or seen was noted. Surveys were carried out in twenty two villages, in which

sixteen villages (Gida-Jikum, Sabon-Gida, Kimbi, Su-Bum, Cha, Fungom, Mashi, Mundabili, Nkang, Nser, Badji, Turuwa, Sambali, Lutu, Kwept and Esu) were from K-FNP and six (Moghom, Mbengkas, Biaso, Mentang, Mbongkesu and Bu) from the K-WFR. Purposefully selected based on their locations and activities within the proximity of the Park. A total of 384 interviews were attempted and up to 288 valid household heads responded to complete interviewed administered questionnaires. Households along village paths were randomized by sampling every second household encountered as the interviewers moved through the village. The track log on the GPS was activated to avoid interrogating the household twice and the coordinate of each household interviewed taken. Adult men, women, youths, hunters, traditional practitioners and vendors, were targeted. In sampling the population of each household, the interviewed was attributed to the older family member and any other contribution from family members were considered same for that interview. But the sex, age, educational level and

Data analysis recorded from people's perception began by decoding data sheets and information obtained from respondents during interviewer administered questionnaire survey were entered into Microsoft excels computer software and analyzed in line with the objective. Equally, the analyses of data proceed in three stages: identification of themes, descriptive accounts and interpretative analyses. Based on the research questions, themes were identified from the data and derived inductively from the theoretical framework. The identified themes were given meaning through descriptive account and interpretative analyses. The themes were analysed and presented in the words of the households and in some cases, direct quotes were used to embody the voices of all identified and interviewed stakeholders (wildlife officials, state personnel, NGO, traditional authority/chairpersons, local security guards) as well as information gathered from group discussion in palaces/market places, local people/elites, hunters/traditional healer encountered randomly during survey. This assisted to ensure a more reliable and credible research findings. Field data Results were presented in the form of tables and graphs, frequencies, and percentages. Furthermore all the GPS coordinates of the household recorded during field inventory were exported to ArcView GIS computer program version 3.3 and geo-referenced to produce a representative sample of household interviewed in the 22 villages that surround the study areas. Figure 3 shows a representative sample of households interviewed in surrounding villages of the study areas.

3. Results

3.1. Demographic Factors of the Interviewees

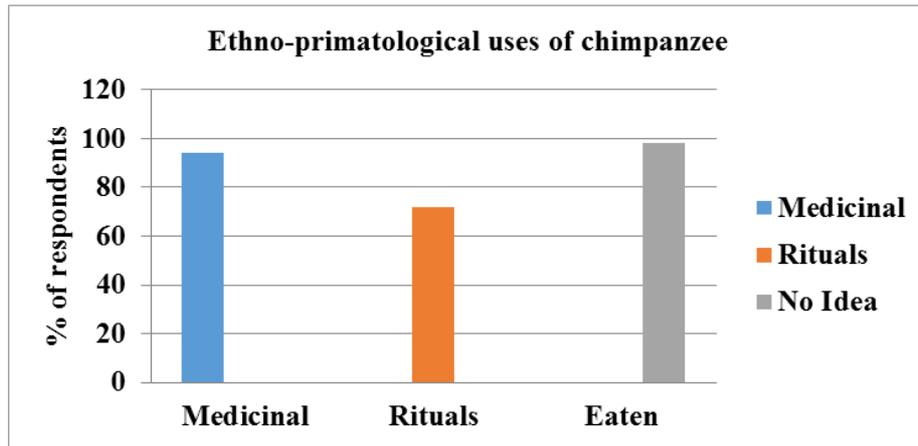
Computing for the age, sex, education and livelihood activities of interviewee's shows that about 52.3% of the respondents surveyed were males while 47.9% were females. With respect to the age structure, majority 87% of the respondents were within the economic active group (20-59)

occupation of the same household interviewed were recorded separately to ease data analysis. Furthermore, the morphological identification of the specimens viewed was made and with the help of a digital camera, photographs were taken where possible. Equally information on other animal body parts encountered during the surveys was noted. At the beginning of each interview, informants were briefed on the subject and objectives of the research and assured that the purpose of the work was not to condemn or report their practices to the legal authorities. During field inventory, two research assistants chosen by the chief of each village, were recruited and further trained on the principle of the research to assist the senior author in conducting the survey. Interviews were conducted in Pidgin English (a language similar to English and used in English-speaking regions of Cameroon) and took approximately 25-30 minutes. But in cases were informants could not understand or interpretation was difficult, a translator chosen by the chief who could speak or understand the local dialects, assisted in the process. and the old (60+) constituted 13%. The educational status of the interviewees was also computed for the survey. Result indicates that 35.5% of the respondents did not have any form of formal education. While 48.5%, 18.5% and 2.5% had elementary, secondary and tertiary level of education respectively. The main sources of livelihood activities of the interviewees in the study areas were grouped into farming, hunting, logging, traditional healing, gathering NTFP and others. Farming (94%) was the major occupation as most of the other activities; hunting (74%), logging (24%), traditional healing (24.5%) gathering NTFP (35.5%) and others (10.5%) like artisan works and constructions were reported being undertaken alongside farming. Income levels of the informants were investigated and about 34.5% of interviewees were earning income between 20.000-50.000cfa per month while 15.75 were earning income level below 2000.00cfa per month. This indicates that the income levels of the household's livelihood sources are not enough to support their basic needs thus the reason they undertake more than one kind of occupation.

3.2. The Indigenous People Awareness of Ethno-Primatological Practices of *P. t. Elliotti*

Interviewees were also questioned on their knowledge of ethno-primatological practices on chimpanzee's body parts/meat around the study areas. Figure 4 show the shows the percentages of respondent's awareness of ethno-primatological practices within the study areas.

During the survey, almost all the respondents 98% (n=282) interviewed were aware of the ethno-primatological practices of *Pan troglodytes ellioti* either for medicinal, rituals and for special traditional meals in the study site. As shown in figure 4, most of the respondents 94% (n=271), 72% (n=207) and 98% (n=282) reported that chimpanzees body parts are used for medicinal, rituals and meats are eaten in some special occasion respectively. The percentages of respondents were graded on 100 for each aspect because respondents were permitted to give more than one response.



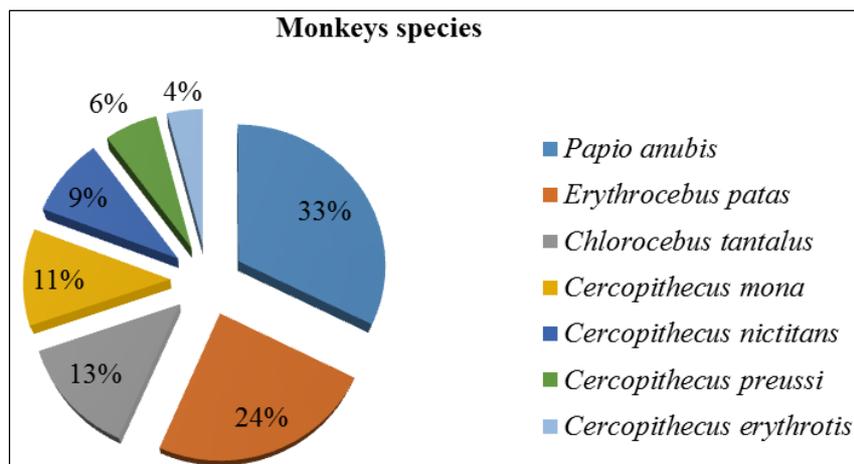
Source: Field Survey, March, 2015-November, 2016.

Figure 4. Percentage of respondents to ethno-primatological practices in the study areas.

3.3. Primate's Species Reported Used in Ethno-Primatological Practices

During interviews surveys, many of the respondents pointed out other species of monkeys whose body parts/meat were equally used in ethno-primatological practices within

the study areas. Even though much attention was not paid to these monkey species since they were not species of interest. Figure 5 shows the other primate's species identified to be commonly used in ethno-primatological practices around the study areas.



Source: Field Survey, March, 2015-November, 2016.

Figure 5. Primate's species reported to be used in ethno-primatological practices.

From figure 5, most of the respondents 33% reported *Papio anubis* bones for the treatment of fractures, head, skulls, skins toes and fingers for treatment of diseases/conditions and in rituals practices. In addition, 24%, 13%, 11%, 9%, 6%, and 4% respondents respectively reported *Erythrocebus patas*, *Chlorocebus tantalus*, *Cercopithecus mona*, *Cercopithecus nictitans*, *Cercopithecus preussi*, and *Cercopithecus erythrotis* body parts/meat used for medicinal, rituals and as special food in some traditional celebration or festivals. However they were reported as feasible substitute species for the same kind of disease/condition mostly handle with chimpanzees body parts/meat.

3.4. Ethno-Primatological Practices of *Pan troglodytes ellioti* Body Part/Meat

3.4.1. Traditional Medicine Practices

The escalations of spiritual diseases or illnesses that are difficult to handle through modern medicine or detected in modern laboratories have greatly evolved in recent time. This has led to rush for traditional medicine whose combination demands the use of chimpanzee, gorilla, primates and other animal's body parts/meat for their treatment. As such, interviewees were interrogated on the different body parts/meat of chimpanzees used for traditional medicine in their villages. Most of the respondents (94%) accepted that chimpanzees body parts/meat were used in traditional

medicine while the rest (06%) of the respondents doubted the used of chimpanzees body parts/meat in their villages. The table 1 shows some identified disease/condition for which

traditional treatment is commonly sought with chimpanzee's body parts/meat in the K-FNP.

Table 1. Identified Disease/condition for which traditional treatment is commonly sought with Chimpanzees body parts/meat in the study sites.

Some Diseases/Conditions for which is treatment commonly sought	Preferred Chimpanzee Body Parts/Meat
Bone fractures/sprains,	Bones, skull
Body strengthening,	Bones, skull
Calcium deficiency,	Soft bones, meat
Cell rebuilding,	Marrow bones, meat
Joint pains,	Bones, skull
Side pain,	Warm bones
Swollenlimbs/parts,	Liquor of cooked bones
Tooth ache,	Grind bones
Waist pain,	Warm bone, grind burnt bones applied to cuts
Diarrhea/dysentery,	Bones, skull, head, furs, when burnt
Poisoning,	Bones, gall bladder, liver, skin, furs, nails
Stomach ache,	Grind burn bone mix with other substance
Swollen Belly,	Boil suck bones
Intestinal problems,	Liver, tower, intestines, bones skulls
Frontal headache, nerves,	Skull, head, bones
Rheumatism, spleen trouble,	Bones, fats, fore and hind limbs
Antibiotic,	Bones, furs, skin,
Asthma,	Bones, jaws,
Epilepsies,	Fore and hinds limbs
Heart Diseases,	Internal organs, heart, liver, chest bones,
Hypertension,	Bones,
Paralysis/stroke,	Veins of limbs and Hinds
Tuberculosis/cough,	Bones, skin, furs
Eczema,	Furs, bones
Scabies/rashes,	Bones and furs
elephantiasis,	Fore and hind limbs, skull, head
Sore throat/goitre,	Bones, furs,
Convulsion,	Anus, furs,
Sleeping sickness,	Fore and hind limbs, head,
Wounds /sores, heart attack,	Bones, furs, skull
Bed wetting,	Bones, skull, skin, carcass, head
Bewitchment,	Bones, skull, skin, carcass, head
Divination,	Bones, skull, skin, carcass, head and whole
Night mares/demons,	Bones, skull, skin, carcass, head
Wed dreams, unstable,	Bones, skull, skin, carcass, head
Marriage, protection,	Bones, skull, skin, carcass, head
Deliverance evil,	Nails, bones, skull, skin, head, fore &hinds limb
Fertility for women,	Internal organ of female, placenta, meat, fur bones
Menstrual problems,	Bones, skin, meat, furs
Miscarriage/bleedings,	Placenta, bones, furs
Sexual weakness,	Testes, male organ, furs
Potency for men,	Male organs, testes, meat
During child delivery,	Skin, bones
Appeasing gods,	Skull, hind and limb bones
Fortune rousers,	Skulls
Prevention of accidents,	Limbs and hind bones
To produce charms,	Burnt hinds, limbs, skulls and other concussion
For incantation,	Skull, head, fore and hind limbs
Madness/mental problems,	Bones, skull, head, fore hind arms

Source: Field Survey, March, 2015-November, 2016.

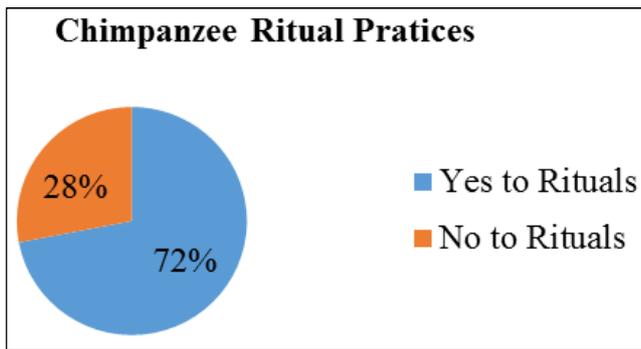
From the table 1, up to 36 kinds of diseases/condition were reported treated directly or in combination with over 22 chimpanzee's body parts/meat. Most of the respondents

reported that illnesses afflicted by witches, wizards and occultism manipulations cannot be treated through modern medical technology as it is easily handle by traditional

practitioner.

3.4.2. Rituals Practices

Many traditional culture in Menchum, have fast change from humanitarian sacrifices in appeasing the gods to animal sacrifices especially gorilla, chimpanzee and primate’s species (Tsi and Chuo, 2016). Their body parts/meat are interestingly used for different kinds of rituals. As such, questions were also designed to find out chimpanzees ritual practices associated to their body parts/meat around the villages of the study area. The figure 6 shows the percentage of respondents to rituals practices associated with chimpanzees around the villages of the study areas.



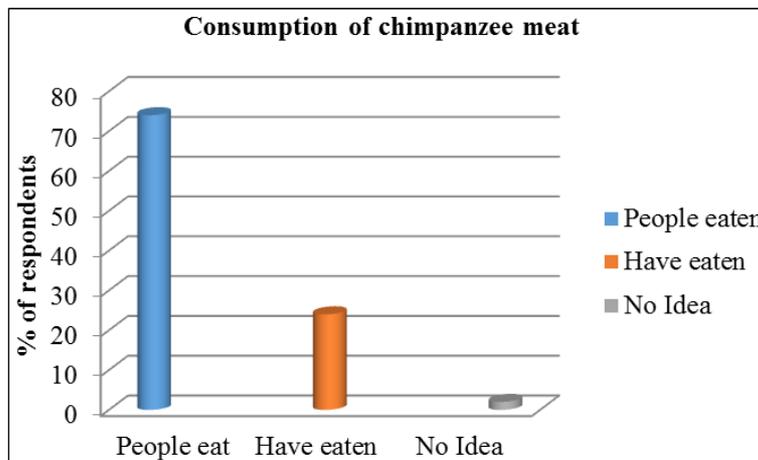
Source: Field Survey, March, 2015-November, 2016.

Figure 6. Percentage of respondents to rituals practices associated with chimpanzees.

From the figures 6, about 72% of the respondents accepted the used of chimpanzees and it body parts/meat for rituals sacrifices within the villages closer to the national park. While 28% of the informal had little idea or doubted the performance of chimpanzee rituals sacrifices. Many of the respondents accepted rituals practices with chimpanzees said, they are sacrifice to the gods, use to produce charms for protection, obtain traditional title, during power transition after the death of a chief, as totems in medicinal harvesting/hunting of other animals, for fortune tellers, to initiate new associates into certain traditional dances, to destroy the power of witches and wizards, to obtain spiritual power from the spirit of the forest, to invoke the spirit of the death, to release attack against human enemy especially during war, during festivals and celebrations.

3.4.3. Nutritional Practices

In ancient days, as lamented by one of the responder it was hardly heard of that somebody eat the meat of any monkey species not to talk of chimpanzees meat. This is because they were considered human-like. There were many bush meat with very better taste as compare to primate species which no one belief they could be eatable except in the cure of certain illnesses were traditional medicine demand the individual to consume it. But today, villagers do not more have bush meat preference they eat everything, it is terrible as he concluded. The figure 7 below shows the percentages of respondents to the consumption of chimpanzee meat around the study area.



Source: Field Survey, March, 2015-November 2016.

Figure 7. Percentage of respondents to the consumption of chimpanzee meat.

From the figure 7, out of the 98% of respondents who accepted that chimpanzees are eaten, 74% reported that people do eat chimpanzee’s meat while 24% said they have eaten chimpanzee’s meat and only 2% said they had no idea if chimpanzee’s meat were eaten. Reasons given for the consummation of chimpanzee meat is presently base on the belief that they are medicinal, help in blood regeneration, strengthen pregnant women and their children and ease delivery, wash the stomach from all infections, gladdens the heart among initiate as they feel honoured to the expense of non initiate, sharpens the mind especially for young children.

Many of the respondents reported chimpanzee’s meat to have been nicknamed as “fine boy”, “law beaf” and “tailless man” to hide it identity from wildlife officials. Many other species of primates were reported eatable around the study area. Even though most of the respondents confirmed that chimpanzees are eaten by people, monkey’s species were reported to be frequently eaten due to their abundant than chimpanzee. The consumption of chimpanzees meat were reported to be common near bushes in the Cameroon-Nigeria borders and in big restaurants in the citiesas compare to the villages near the national park and local market.

3.5. The Implications Ethno-Primatological Practices of *P. t. ellioti* for Biodiversity Conservation

3.5.1. Hunting of *Pan troglodytes ellioti*

Informants responding to questions relating to the hunting of chimpanzee gave convincing evidence of weekly or monthly or yearly illegal trafficking of chimpanzee’s body parts and other monkey’s species. Hunting of chimpanzees was confirmed by 98% of respondents and a majority of respondents (78%) had seen carcass/body part of chimpanzee in less than a year. In fact, two hunters in Lutu showing prove of recent chimpanzees skins (picture 1) confirmed that 7 and 4 chimpanzees were killed in 2015 and 2016 respectively. Another hunter presented an old skull (Figure 8). Many of the respondents refused taking of photographs of some chimp’s body parts seen with the claim that they have inserted charms in them as well as some well afraid of being betray. It is evident because most of the respondents who responded sincerely to these questions lives in border villages of Cameroon- Nigeria where hunting is optimal and law enforcement are almost absent or inapplicable.

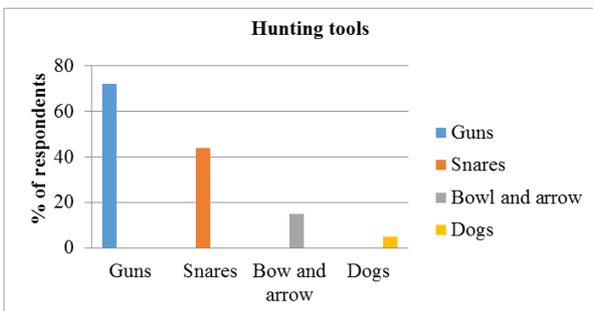


Chimpanzee skin (1) Old skull of chimpanzee (2)

Source: Field Survey, March, 2015-November, 2016.

Figure 8. Skin and old skull of chimpanzee.

Here, hunting equipments are being exchanged at very low cost along the Cameroon-Nigeria borders and are commonly used. Figure 9 shows the percentage of respondents to equipments commonly used in the hunting of chimpanzees in the study sites.



Source: Field Survey, March, 2015-November, 2016.

Figure 9. Percentage of respondents to equipments commonly used in the hunting of chimpanzees in the study sites.

Guns were the most commonly cited (72%) hunting weapon, followed by traps (72%). The use of spears or bow and arrow (15%) were reported to be an ancient technique

that was rarely used by experience hunters because they were often poisoned to hunt live chimpanzees. Many respondents (88%) did not abide the hunting of chimpanzees with dogs. However, 12% of the respondent said even though it is difficult, it is another means to set chimpanzees into confusion while targeting them at specific areas.

These hunting materials were reported to be used through many techniques. For instance, one of respondents said chimpanzees are fun of imitating people so at time when a chimpanzee is seen, they will cut a stick tied a small shape spear to it and dipped it into a poisonous liquor pretend to stab themselves with it and lance it to the chimpanzee. If the chimpanzee catches the sticks, he does the same thing and launches it back. This paralyses the chimpanzee and it is then caught alive and used for sacrifices or sold to other villages. Another said they used snares made of powerful wires along the tracks of chimps. Hunters were reported to cry like an attacked younger chimpanzee were group is suspected to be found this bring the chimpanzees closer to the sound and they are either caught in wire traps or shot. Another technique reported, occurs if calls of chimpanzees are heard during late hours of the day, hunters quietly follow and hide and sleeps near the areas they perceive nests are to be constructed. When the chimpanzees are belief to have sleeps off, especially before dawn the hunters open fire on them. Other hunters pointed out that some of their colleagues use charms to hunt chimpanzees; however this technique is cumbersome to understand.

3.5.2. Trade of *Pan troglodytes ellioti* Body Parts/Meat and as Pets

Questionnaires interviewed were equally designed and administered to find out the level, prices and the scale of the trade (i.e. whether at a national, regional, or transnational level) around the study areas to give majors for alternative sources of livelihood. The intensity of hunting of chimpanzees was reported to be very high due to encouraging prices. The table 2 shows the main traded body parts of chimpanzees with respect to varying prices as reported by some interviewees.

Table 2. Trade of *Pan troglodytes ellioti* with respect to varying prices.

Body parts	Ranges of prices francs.cfa
Fresh head	10,000-25,000
Hind/fingers	10,000-25,000
Limb/toes	10,000-25,000
Skull	20,000-50,000
Skin	10,000-30,000
Bones	7,500-25,000
Infant live/death	35,000-150,000
Adult chimpanzee live/death	75,000-250,000

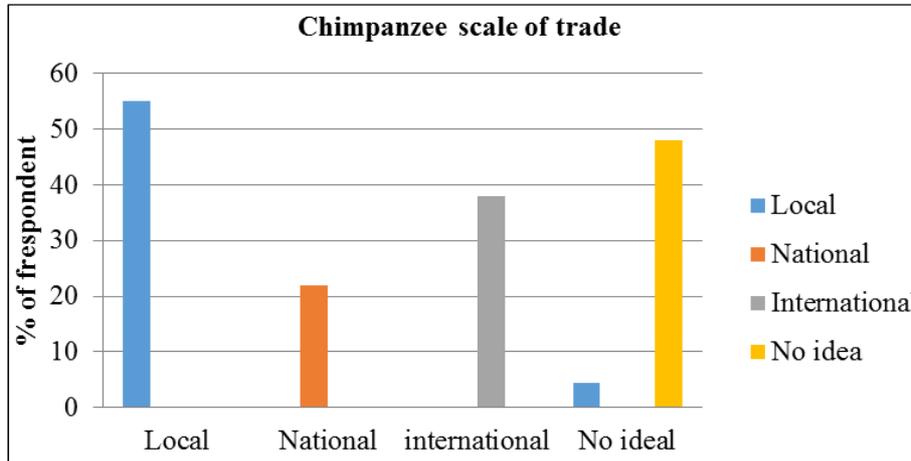
Source: Field Survey, March, 2015-November, 2016.

From table 2, an adult chimpanzee when hunted cost 75,000-250,000 francs.cfa and its enfant 35,000-150,000 francs.cfa. The amount can rise more than this especially when the chimpanzee/enfant is caught alive. The prices of the head, toes, fingers, skull, skins and bone equally vary

depending on the duration of time (old/fresh), size, demand from traders and if they are already possessed with charms. The amount for the meat and other body parts ranges from 500-5,000+ franc.cfa/slice/part. The average price of a matured chimpanzee which is was estimated to be in between 75,000-250,000 francs.cfa which is an equivalent amount for the salaries of a wildlife official. When compare to other monkey species such as Colobus, baboons, mona, putty-

nosed, tantalus and patas monkeys in which prices for their body parts/meat ranges from 7,500-50,000 francs.cfa shows that the prices for chimpanzee body parts/meat are relatively high.

Equally, respondents reported that the scale of the trade for chimpanzee’s body parts/ meat occurs both at local, national and transnational level. Figure 10 show the scale of trade of chimpanzee’s body parts/meat in the study areas.



Source: Field Survey, March, 2015-November 2016.

Figure 10. The scale of trade of chimpanzee’s body parts/meat in the study areas.

From figure 10, most of the respondents (55%) reported the scale of trade of chimp’s body parts at local level. Equally, 22% and 38% reported the scale of trade at national and regional levels respectively especially in big towns like Wum, Mesaje, Bamenda, Buea and eastern part of Nigeria. Despite the level of trade, high demand for body parts/meat by traditional practitioners for traditional medicine and rituals around the neighboring villages, nationwide and internationally couples to the fast acquisition of hunting equipments coming up from Nigeria and at times offer to hunters in a kind of business known as “Trade by Bata” remains a greater trade to biodiversity conservation in the study areas.

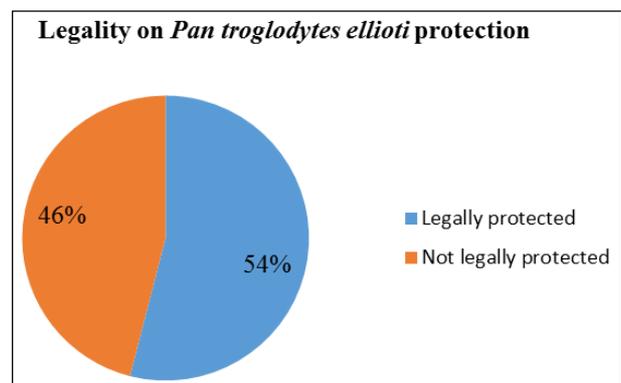
3.5.3. *Pan troglodytes ellioti* as Pets

The smuggling of chimpanzee was reported common along the Cameroon-Nigeria borders. During interview surveys about 35% of the indigenous people reported chimpanzees to be more demanded on sale as pets. This is not really because people want to keep them at home or in private zoos or hotel but because most buyers want to grow them up for rituals sacrifices or for special traditional occasions. Equally, up to (57%) of respondents had seen pet chimpanzees. Baby chimpanzees are usually transported from Lutu, Nser, Nkang, Kwept and other rural areas to big towns like Bamenda, Bafoussam, and Douala and especially and frequently to Nigeria cities. The method of transportation involves cunning bushy roads, through river banks or carefully tied in cargo or on the individual inside large worn dresses. During transportation, the pet’s chimpanzees are injected or given a tablet, which weakens them and makes

them sleep on transportation without causing problems on the road or notice by eco-guards.

3.6. Attitudes of Indigenous People Towards Protection of *Pan troglodytes ellioti*

Open acceptances of indigenous people in conservation projects usually facilitate the task of management (Tsi et al., 2006) of natural resources as objectives are easily attained. While the indisposition of local people, frustrates conservation efforts. Figure 11 shows the Attitudes of indigenous people towards the Protection of *Pan troglodytes ellioti* in the study site.

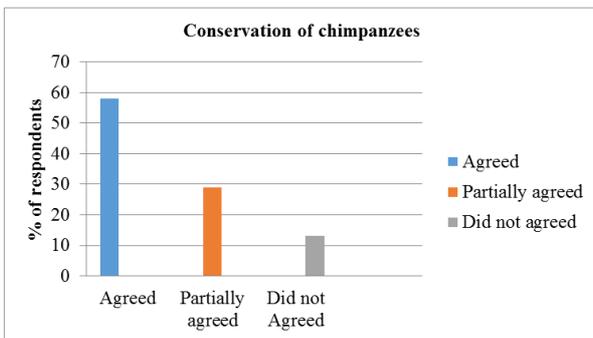


Source: Field Survey, March, 2015-November, 2016.

Figure 11. Attitudes of respondents to Protection of *P. t. ellioti* in the K-FNP and K-WFR.

From figure 11, up to 54% of respondents in the survey areas accepted that chimpanzees were legally protected to

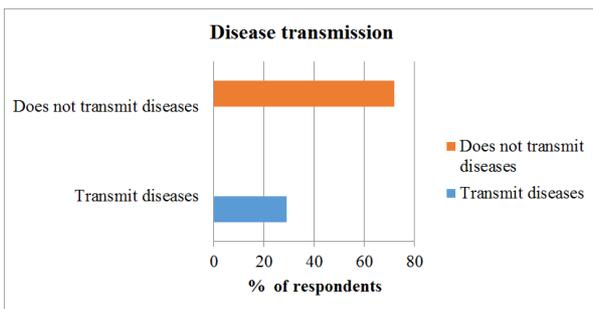
46% who seems to be ignorance to the legal protection of chimpanzees by the state. This gives reasons while constant and continuous sensitization campaign is necessary within the study areas to build up positive attitude toward the conservation of chimpanzees. Furthermore, informants were again interrogated if they agree to the conservation of chimpanzees in the study areas. Figure 12 show the percentages of respondents to the conservation of chimpanzees in the K-FNP and K-WFR.



Source: Field Survey, March, 2015-November 2016.

Figure 12. Percentages of respondents to the conservation of chimpanzees in the study areas.

Figure 12 illustrate that about 58% of the informants agreed that chimpanzees should be protected in all their habitat range, 29% were those who accepted the conservation of chimpanzees only inside the national park but not outside the park and 13% were of those who did not response to the question or didn't support the ideal to protect chimpanzees in their areas. Informants were almost ignorance to the question suggested if chimpanzees transmit diseases. Figure 13 shows the percentages of respondents to the perception of disease transmission by *Pan troglodytes ellioti*.



Source: Field Survey, March, 2015-November 2016.

Figure 13. Percentages of respondents to the perception of disease transmission by *P. t ellioti*.

Although majority (71%) of respondents said that do not transmit diseases or did not know. A few (29) however believed that chimpanzees could transmit diseases such as Ebola and AIDS as they said they have heard of it but it has never been notice in their villages. A lesser proportion (24%) of respondent's perceived chimpanzees as crop raiders. The kind of crops reported to raided by chimpanzees and other

primates included: cocoa, maize, vegetables, maize, guinea corn, ground nut, orange, mango, palm nut and cola nut. This is one of the reasons that push respondents to be less interested, to the protection of chimpanzees because they raid crops. However, questions were further designed to investigate indigenous people attitude toward *Pan troglodytes ellioti* crop raiding and assess to natural resources exploitation in the K-FNP and K-WFR.

4. Discussion

Due to the damaging of traditional taboos and totemic beliefs, hunting of chimpanzees have become a common practice as chimps are hunted for their body parts/meat for used in traditional medicine, rituals and as food for special occasion.

4.1. Used of Chimpanzee Body Parts/Meat for Medicinal Purposes

The escalations of spiritual diseases or illnesses that are difficult to handle through modern medicine or detected in modern laboratories have greatly evolved in recent time around the study sites. This is making the indigenous people to rush for traditional medicine whose combination demands the use of chimpanzee and other primate's body parts/meat for their treatment (Tsi and Chuo, 2016). For instance:

4.1.1. Healings with Chimpanzee Bones

Bones were reported to treat humans with bone fractures. The bone is tied to the area affected with other traditional concussion and is belief to reduce healing time and less costly Back bones help to relief west pains in human when warm and place on the paining side. There also existed a strong belief that the bones of chimpanzee are very useful as an antibiotic to make children strong. Equally, medicines were reported to be produced from chimpanzee bones. For instance, pregnant women and new born children, were advice to constantly drink the liquor of soaked chimpanzee's bones which is slightly boil alongside other substances with water on daily basis to develop the bones of the child in the womb and to reduce the effect of calcium deficiency in newly born. Moreover, to ease fast walking ability in children and to further strengthen the bones harder as they grow older chimps bones were reported to be tied on children foot during the night. Chest bones were used to heal people suffering with asthma. Furthermore, bones when boil and mix with other concussion were reported to treat joints, strengthen children with weak walking abilities and empower fertility rate in women.

4.1.2. The Used of Male and Female Chimpanzee Organs

The placenta, ovaries and womb of a female chimpanzee when removed and prepare with other concoction were reported to treat infertility in barren women and to strengthen fertility in young girls. It was equally said used to relief women suffering with menstrual problem, miscarriage and bleeding. The testis and scrotum of killed male chimpanzees

were said to heal men suffering with impotency sexual weakness.

4.1.3. Healing with Chimpanzee Skull/Head

Skulls when warmed on fire, rubbed with herbs help to relieve human suffering with chronic frontal headache. The cooked head of a chimpanzee was reported to hold the traditional belief that it gives intelligence and wisdom to young growing children. After eating the fleshy parts of the head, the skull is sucked in water couple with some herbs and the liquid is given to school children in the morning to improve their brilliance.

4.1.4. Healing with Chimpanzee Meat

The eating of chimpanzee meat was a matter of choice as reported by one of the respondents but in cases of illnesses, patients are recommended to eat the meat with id usually accompany with other concussion. For instance fresh chimpanzee's meat was reported to greatly assist in blood regeneration. Childless mothers are often recommended to eat and drink the soup of chimpanzee cooked meat to cleanse their wombs. The soup from the boiled meat was given to pregnant women to strengthen the child in the womb. Others held the belief that women of child bearing age shouldn't eat chimpanzee because they will give birth to chimpanzee-like babies. Chimpanzee's meat was said to play a good role in treating poisoning, stomach ache, swollen belly and intestinal problems in humans.

4.1.5. Healing with Chimpanzee Fur and Hair

Chimpanzee's hair/fur was reported very valuable in treating many kinds of illnesses. Their used demand that the hair/fur should be burnt and the mix with many other substances such as "kasi" oil, "kenet" oil, and "palm" oil. The hairs gotten from the belly of female chimpanzees, when burnt with other herbs and made to be inhaled by a pregnant woman on labour, was reported to ease child bearing. Hairs when burnt and mix with other leaves treat burnt areas on human body. The substance produced with hair/fur, were reported to treat people suffering with diarrhea/dysentery, eczema, scabies/rashes. It was used to produce charm for protection. It was applied to cuts, treat poisons, just to name a few.

4.2. Used of Chimpanzee Body Parts/Meat for Rituals

Being a remote area, it was noticed that most of the cultural practices observed in the villages was based on rituals. As compared to ancient generation, said by one of the respondents many of the cultural practices around the village have fast change from humanitarian sacrifices in appeasing the gods to animal sacrifices especially chimpanzees, gorilla and primate's species whose body parts/meat are interestingly used for different kinds of rituals (Tsi and Chuo, 2016). For instance:

4.2.1. Sacrificing Chimpanzees to the Gods

Chimpanzees were reported used for sacrifices on village gods or individual shrines. One of the respondents in Lutu,

reporting on this said in ancient times, healthy human beings especially stranger or stubborn fellows were being slaughtered on village gods or by some powerful shrine owner to appease the gods during particular festival seasons. But today, this inhuman tradition has been replaced by sacrificing chimpanzees due to the fear of law coupled with the fact that many of these practitioners are dead.

4.2.2. Sacrificing Chimpanzees to Obtain Traditional Title

Some of the interviewees gave facts that, due to the extinction/rareness of lion, elephant, leopard and other large mammal's species in some of their suitable habitats around their forest which were used to award the "Red Feather" cap title to any hunter who successfully hunt one, is now being awarded to someone who shot a common chimpanzee. In awarding this title, the killed chimpanzee or interestingly if it is hunted alive or half dead, it is slaughtered then passed three times over the spiritual pot allowing the blood to drop into the pot three times, it is then placed near the shrine where the pot is placed, starting with the chiefs then the elites will pass through the chimpanzees touching it as they sing songs of victory. Finally the hunter's legs are placed on the chimpanzee and the red feather from the pot is removed, inserted in the cap and placed in his head with powerful words of blessing. He is then welcome into the "Ngomba" house and given authority to enter any juju house in the village.

4.2.3. Sacrifice of Chimpanzees for Oath Bearing

Chimpanzees were equally said to be used in ancient times during alliances between neighbouring villages for oath bearing. During such event, a live chimpanzee will be hunted and after invocation of the spirit, the chimpanzee is killed at the boundaries and each Fon backing the opponent and facing his people will leak the blood of the chimps on the boundaries three times under oath to the terms of the treaty the boundaries limit.

4.2.4. Used of Chimpanzee for Power Transition

Chimpanzee skin, bones of the head, toes and fingers were reported used as symbols of power transition which usually occurs when a chief dies, his successor is taken into the "Ngomba" house where rituals are performed. He is made to sit on the chimpanzee skin; the skull is then put on his head, the toes bones on his feet and the hand bones on his hands coupled with other items. This is followed by powerful enchantment as he is given authority and power above villager and animals with the strength to defend the land.

4.2.5. Used of Chimpanzee for Traditional Celebration of Festivals

Some traditional festivals/celebrations such as male child circumcision and some "Nkoh", "Muambouh", "Foubuh" and other juju dances, were reported to use chimpanzee's body parts/meat for the preparation of rituals linked to these practices. For instance, Chimpanzee's black skins were reported sacred because they are used to perform ritual in "Nkoh" dance the skin is folded in the form of a baby toy and the "Nkoh" carries it on his back. Chimpanzee's pink skin

faces, hinds and toes were reported to be placed in some shrines linked to these juju which symbolizes powerful meanings in these traditional sects and are used to initiate others new members.

4.2.6. Used of Chimpanzee Body Parts to Produce Charms

Most commonly, respondents reported that the skins of chimpanzees were used to make important trophies such as medicine bags used for the storage of powerful traditional medicine. Traditional handbags with symbolic designs, mostly used by elite or given to important traditional strangers as symbol of fruitful relationship. Equally, Chimpanzee's skull and bones were reported used to form protective charms. The openings in the skull/bones are used to put in charm. Other bones without openings were reported to be possessed with spiritual materials and distributed to associates who place them on their door poles, window, roofs, farm and other properties to protect them and their families as well as properties from witches and wizards.

4.3. Used of Chimpanzee's Meat in Special Occasion

One of the respondents said in ancient days, chimpanzees were special meals in some particular ceremonies. For instance, as he continues in ancient days when ever a chief priest in a family that were practicing totemic belief with chimpanzees dies, a chimpanzee was killed to prepare for his funeral as well as to introduce his successor. The occasion is spiced up with a special dish of chimpanzee meat meant only for associate. One of the respondents reported that in ancient days in their chiefdom, when a new chief was to be crowned, a chimpanzee was killed. After performing the rituals required, the chimpanzee is skinned preserving the important parts necessary for the palace, the rest of the meat is cooked and eaten only by elites. However, as said by one of the respondents, that it was hardly heard of that somebody eat the meat of any monkey species not to talk of chimpanzee's meat which was considered sacred and human-like. Couple to fact there were many bush meat with better taste as compared to primate species which no one believed they could be eaten except in the cure of certain illnesses were traditional medicine demand the individual to consume it. But today, villagers do not more have bush meat preference they eat everything it is terrible as he concluded. Viewing from the respondents, many do not consider traditional beliefs valid in this present time. As such the eating of chimpanzee is as normal as eating any other meat. Even though eating of chimpanzee's meat in the villages near the park and local markets is very rare, their meats are consumed greatly in hidings especially in the bushes of Cameroon- Nigeria borders and also in big restaurants in the cities as well as in "Ngumba" houses. Only a few of the respondents said chimpanzees are not eaten. They were mostly the old who still holds ancient beliefs about chimpanzees. Equally, chimpanzee's meat from the survey areas was reported not only for local consumption but also transported to Nigeria cities and some big towns nationwide such as Bamenda, Bafoussam, Douala and Yaounde.

4.4. Ancient Indigenous Beliefs That Aided in the Conservation of Chimpanzees

4.4.1. Traditional Taboos

Most of the ancient traditional practices such as taboos/beliefs reported around the study areas were shown to be valuable tools that aided chimpanzee's conservation. For instance, one of the respondents in Nkang said in the days of old, chimpanzees were considered as human being. As such, it was a taboo to kill chimpanzees because they behave like human beings, the way they eat, feed their young, cry and shout like human, imitate human, carry their young and play about. So shutting at them is like during it to a human being. In Fungom, chimpanzees were greatly forbidden to be killed because they were among the animals that belong to the palace which signify power, protection and guidance they held the belief that chimpanzees are strong and will help them during war when their enemies attack them. Chimpanzee in the olden days, were highly respected and feared by all because they foretold mysterious event likely to happen in the community as reported by one person in Sabon-Gida. For instance, the death or birth of a Fon, sudden attack of enemies and other calamities were usually announced by the way they cry or drum. This alert were interpreted by the elites who prepares the minds of the villagers either to gather enough food or weapons or perform rituals base on the kind of mysteries. Now our days, these signals are very rare due to over hunting of chimpanzees and most of those who were expert in this are dead he ended.

In Nkang, one of the respondents said at first, their tradition and culture did not permit the hunting and eating of chimpanzees because in the early days, they were reported to cause miscarriage in women if hunted. They were reported to be devils that move with masquerade in the night. They were believed to be witches and wizards and anyone who had a nightmare in which a chimpanzee touches the person died the following day. In the days of old added by one of the interviewees, when ever chimpanzees came into the village, all the villagers will lock themselves indoors as on the chief priest, the king and high ranking elites will sit in the village shrine and communicate with the chimpanzees. During this period, no one goes out or comes into the village until after three days where the ritual sacrifices are over and chimpanzees most have gone back to the forest. But these traditional practices have completely disappeared.

In the ancient time, chimpanzees were considered as gods as said in Nser, and no one had the courage to kill them or wound them. Whenever they was an outbreak of any dangerous illness, or a disease without cure, powerful traditional herbalist consult chimpanzees, and any grass that the chimpanzee cut and eat help in the curing of such disease. So it was a taboo for someone to hunt or eat chimpanzees because they aided in traditional medicine findings. Equally one of the respondents said whenever a dead body of chimpanzee was found in the bush, it was traditionally buried in an identify area and the previous day was declared to mourn with the perception that the god has lost one of its members.

Food and drinks were offered to the god as a sign of appeasing the god and after some months, the bones were removed, washed and rubbed with camp wood and placed beside the village god. But this tradition is far forgotten.

In Turuwa, a man reported that chimpanzees were hunted in ancient times in their village but after some time, a group of hunters went to the forest and one of them found a chimpanzee nursing its young, it pleaded with the man not to shoot but the man fired at it unfortunately he missed it and before he noticed, the chimpanzee grasped him and gave him a serious slap below the armpit. The man cried out and pleaded with the chimpanzee that had sympathy on him but seized his bag, gun and cutlass and sent him away. From that day, news spread around the village that chimpanzees are more merciful than humans and it became a taboo to hunt chimpanzees. In Kwept, one of the respondents said that a hunter meets a nursing chimpanzee and when it pleaded with him to spare its life the hunter was merciful and did not shoot it. On his way to his hunting hut, he saw the nursing chimpanzee pointing to him two killed duikers and a bush buck as gifts for its kindness when the information reached the village, no hunter dared to kill a chimpanzee because they held the belief that chimpanzees give good luck especially the nursing mothers. Many respondents said it was a taboo to kill chimpanzees because it was not eaten by the villagers. Those who ate it complained of nausea, running stomach, general body weakness as they had the feelings that they had eaten a human being. Some even went further to say that the meat when eaten by women, it causes infertility and miscarriages in pregnant women.

4.4.2. Totemic Beliefs

Decades of years ago totemic beliefs associated with chimpanzees were very common and the roles governing them were effective. The value relating to totem shows its importance in chimpanzee conservation. For instance, one of the respondents in Nser village said in ancient days, some individuals transformed into chimpanzees for the benefit of the village. Thus anyone who willfully or accidentally killed a chimpanzee was considered an unlucky man. Not only did he receive automatic sanctions from the gods that led to incurable illnesses or death if the gods were not appeased, his chances in shutting even a common rat were lost and his entire family was looked upon as cursed people. Even though most of the respondents knew little about totemic beliefs relating to chimpanzees existing in their village, a few however said they had heard stories of their forefathers saying their chiefs usually transformed into chimpanzees to escape from enemies during war. Equally, traditional medicine men usually turned into chimpanzees to harvest medicinal plants and that village warriors turned into chimpanzees to guide, frighten and fight enemies during times of wars. As such any hunter, who dares to kill a chimpanzee, was considered to be a wicked and laziest hunter thus his hunting materials will be seized and he will never be given any traditional title within the village.

Conservation priority

Cameroon Forestry and Wildlife Law (No.04/01 of

20/01/1994), section 101 states any person found at any time or place with part of live or dead of a protected animal shall be considered to have captured or killed it. For sanction, section 158 states: a fine of, from 3,000,000 to 10,000,000 and of imprisonment of one to three years shall be imposed on whoever kills or captures a protected animal. This is pertinent and can effectively assist to remove or reduce the human activities of chimpanzees that have negative impact on the preservation of biodiversity around the park and reserve if MINFOR and NGOs Wildlife Managers applied conservation strategies. For instance, create and strengthen community conservation programmes including conservation education, park advisory committees, and support for local livelihoods and conservation plans for surrounding community forests. Improve awareness on wildlife laws governing chimpanzee protection in all surrounding villages. Investigate and develop opportunities for community engagement, including employment, boundary clearance, livelihood improvement, monitoring, and ecotourism. Establish a chimpanzee survey and monitoring programmes with greater involvement of local communities. Support ancient and build new traditional taboos that are environmentally friendly regarding chimpanzee hunting. Organize frequent campaigns as means to stop the live trade of infant chimpanzees and the sale of chimpanzee body parts/meat for rituals, medicine, and celebrations by diverting indigenous people's minds on the use of domestic animals such as fowls, goats and by providing beautiful and well equipped health centers in all the surrounding villages.

5. Conclusion

The escalations of spiritual diseases or illnesses that are difficult to handle through modern medicine or detected in modern laboratories have greatly evolved in recent times. Equally, population growth and poverty increment makes it more complex for the indigenous people to meet up with modern medical treatments. This has led the indigenous people to rush for traditional medicine which combination demands the use of chimpanzee's body parts/meat believed to be cheapest and fastest. Furthermore, the evolution of old and new cultural practices whose rituals demand the sacrifice of chimpanzees or use of its body parts is very rampant around the villages. The eating of chimpanzees which were anciently a taboo in a whole community either because they were considered human-like, ghosts, gods, protectors, ancestors and totems by villagers around the surveyed area, is now an individual issue to choose whether to eat it or not. They are also eaten in special ceremonies/festivals such as during male child circumcision, in "Ngumba" houses during titles and juju initiation. The continued increase in prices of chimps body parts has become so competitive among local people than their engagement in traditional custodians as they seek to grace themselves with praises. As such, attempts to conserve chimps around the study areas are resulting to conflicting bargains between the local people and wildlife officers. All this have eventually led to the continued decline or extinction of chimpanzees in some of their

suitable habitats. Therefore, there is need to bring all the stakeholders involve in conservation processes for an effective dialogue to implant management and alternative livelihood strategies for the conservation of the remaining chimps and other wildlife species.

Conflict of Interest Statement

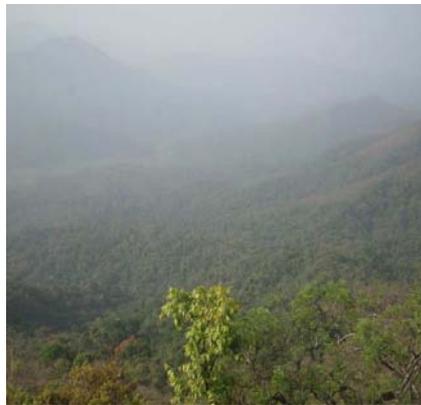
We declare that there is no conflict of interest regarding the publication of this paper.

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Appendix



From top left, the pictures show side view of the forest, chimpanzee nests observation to the bottom right showing the senior researcher and his team members during interview inventory in the study areas.

References

- [1] Adams, J. S., T. O. McShane., 1996. The myth of wild Africa: conservation without illusion. University of California Press, Berkeley, California, USA.
- [2] Adeola, M. O., 1992. Importance of wild animals and their parts in the culture, religious festivals and traditional medicine in Nigeria. *Environ. Conserv.* 19: 25-134.
- [3] Atem, G., 2000. The Fontem Kingdom [sic]: a brief history and tradition of Lebang people. ANUCAM Publishers, Bamenda, Cameroon.
- [4] Centre for Indigenous Resources Management and Development (CIRMAD). 2015. Field surveys on the medicinal wildlife species of the North West Region of Cameroon; their usages and the means of acquisition: Sean Mowbray and Chelsea Love (UN Online Volunteering Service).
- [5] Chuo, M. D., Tsi, E. A., 2017. Status of large mammals: case study of gorilla (*Gorilla gorilla diehi*), chimpanzee (*Pan troglodytes ellioti*) and buffalo (*Syncerus caffer*), Menchum South, NW Cameroon. *International Journal of Environment Agriculture and Biotechnology* 2(4), pp. 1523-1539.
- [6] Community Assistance in Development (COMAID). 2014. Demarcation of the Kimbi-Fungom National Park and extension of the Kom-Wum Forest Reserve and other important eco-regions of the Bamenda Highlands. Under the supervision of MINFOR Protection of threatened species and Ecosystem.
- [7] Dedeke, G. A., Soewu, D. A., Lawal, O. A., Ola, M., 2006. Pilot Survey of Ethno-zoological Utilisation of Vertebrates in Southwestern Nigeria, Indilinga. *Afr. J. Indigenous Knowl. Syst.* 5(1): 87-96.
- [8] Doumbé, O. A., 2014. "Habitat Mapping of the Babanki-Finge Forest, and Survey on the Rarest Chimpanzee (*Pan troglodytes ellioti*) in the Bamenda Highlands, North-West Cameroon" University of Roehampton, London.
- [9] Ekinde, A., Ashu, M., Groves, J. S. (2005). Preliminary ape surveys around the Fungom forest reserve and Furuawa Sub Division, North West province, Cameroon. *Wildlife Conservation Society, Cross River Gorilla Project.* 45pp.
- [10] Etiendem, D. N., Hens, L., Pereboom, Z., 2011. Traditional knowledge systems and the conservation of Cross River gorillas: a case study of Bechati, Fossimondi, Besali, Cameroon. *Ecology and Society* 16(3): 22.
- [11] Fa, J. E., Peres, C. A., Meeuwig, J., 2002. Bushmeat exploitation in tropical forests: an intercontinental comparison. *Conservation Biology* 16: 232-237.
- [12] Fuentes, A., Wolfe, L. D., 2002. *Primates Face to Face.* Cambridge: Cambridge University Press.
- [13] Gaski, L. A., Andrea, J., Kurt, A., 1994. Prescription for extinction: Endangered Species and Patented Oriental Medicines in Trade. TRAFFIC USA, p. 300.
- [14] Morgan, B., Adeleke, A., Bassey, T., Bergl, R., Dunn, A., Fotso, R., Gadsby, E., Gonder, K., Greengrass, E., Koutou-Koulagna, D., Mbah, G., Nicholas, A., Oates, J., Omeni, F., Saidu, Y., Sommer, V., Sunderlud-Groves, J., Tuebou, J., Williason, E., 2011. Regional Action Plan for the Conservation of The Nigeria-Cameroon Chimpanzee (*Pan troglodytes ellioti*). IUCN/SSC Primate Specialist Group and Zoological Society of San Diego, CA, USA.
- [15] Marshall, N. T., 1998. Searching for a cure: conservation of medicinal wildlife resources in east and southern Africa. TRAFFIC International.
- [16] Oates, J. F., Ikemeh, R. A., Adedamola, O., Bergl, R. A. 2008b. A Survey of Rain Forests in Ogun, Ondo and Osun States in Southwestern Nigeria to Assess Options for Their Sustainable Conservation: Final report to the Nigerian Conservation Foundation, Lagos.
- [17] Oates, J. F., Tutin, C. E. G., Humle, T., Wilson, M. L., Baillie, J. E. M., Balmforth, Z., Blom, A., Boesch, C., Cox, D., Davenport, T., Dunn, A., Dupain, J., Duvall, C., Ellis, C. M., Farmer, K. H., Gatti, S., Greengrass, E., Hart, J., Herbinger, I., Hicks, C., Hunt, K. D., Kamenya, S., Maisels, F., Mitani, J. C., Moore, J., Morgan, B. J., Morgan, D. B., Nakamura, M., Nixon, S., Plumptre, A. J., Reynolds, V., Stokes, E. J., Walsh, P. D. 2008a. *Pan troglodytes*. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010. 4. Website: <www.iucnredlist.org>. Accessed: 31 October 2010.
- [18] Osemeobo, G. R., 1991. Effects of common property resource utilisation on wildlife conservation in Nigeria. *Geo Journal* 23: 241-248. <http://dx.doi.org/10.1007/BF00204841>
- [19] Peterson, D., Ammann, K., 2003. *Eating Apes.* California: University of California Press.
- [20] Redmond, I., 2010. *Primates of the World: the amazing diversity of our closest relatives.* New Holland Publishers (UK) Ltd.
- [21] Soewu, D. A., 2008. Wild animals in ethno-zoological practices among the Yorubas of southwestern Nigeria and the implications for biodiversity conservation. *African Journal of Agricultural Research.* 3(6): 421-427.
- [22] Sawandi, T., 2006. Yorubic Medicine: The Art of divine Herbology. Online articles, www.planetherbs.com.
- [23] Tata, F. T., 2015. The Kimbi-Fungom National Park; -A situation report. Green works company Ltd. P. O. Box, Bamenda, Cameroon<bankomtata@yahoo.com>.
- [24] Tsi, E. A and Chuo, M. V. 2016. Contributions of Indigenous Knowledge of Gorilla (*Gorilla gorilla diehi*), Chimpanzee (*Pan troglodytes ellioti*) and Buffalo (*Syncerus caffer*) Conservation, in Waindow, North West Cameroon. *Annual Research & Review in Biology* 11(2): 1-14.
- [25] Wolfe, L. D., Fuentes, A., 2007. *Ethno-primatology. Contextualizing human and nonhuman primate interactions.* In Campbell, C. J., Fuentes, A., MacKinnon, K., Panger, M. & Bearder, S. K. (eds.), *Primates in Perspective.* New York, Oxford: Oxford University Press, pp. 691-702.