

Influence of Traditional Beliefs on the Conservation of *Pan troglodytes ellioti*: Case Study, Kimbi-Fungom National Park and Kom-Wum Forest Reserve, NW Region, Cameroon

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Abstract—The influence of traditional beliefs associated to the conservation of *Pan troglodytes ellioti* in the Kimbi-Fungom National Park and Kom-Wum Forest Reserve (K-WFR), NW Region of Cameroon, was undertaken to explore respondent's knowledge of chimpanzee and investigate their awareness of, and attitudes toward, traditional beliefs, taboos and cultural laws associated with them. To investigate the power and influence of traditional beliefs and practices on the conservation of *Pan troglodytes ellioti* in the study areas. Methodology of study involves the use of interviewer-administered questionnaire survey, personal interview, group discussion and through simple observations. From the result, (99%) of respondents were aware of the presence of chimpanzee. An overall, 69 % of respondents "agreed" that "there exist traditional beliefs relating to *Pan troglodytes ellioti*. More than half (55%) of the respondents were aware of the existence of taboos that prohibit the hunting and eating of chimpanzee in their villages. Less than half of the interviewees 43% reported that they are hunters who still hunt chimpanzees but in hidings. Increasing population, high poverty rate and modern hunting equipments, likewise, the introduction of new cultural practices that demands the used of chimpanzee's body part/meat for rituals/medicinal remains greater threat to chimpanzee in the study areas. As such, traditional beliefs, taboos/cultural laws both old and new should be revive and encourage through traditional council and effective social organizations as valuable conservation tool for the remaining *Pan troglodytes ellioti* in the study areas.

Keywords— Traditional beliefs, conservation, *Pan troglodyte ellioti*, K-FNP, K-WFR.

I. INTRODUCTION

The role of traditional beliefs in the conservation of chimpanzees and other primates, regardless of their use value, dates back to creation (Berkes et al., 2000; Turner et al., 2000; Shastri et al., 2002). As such, Traditional beliefs conservation ethics are capable of protecting chimpanzees in particular and the environment in general as long as the local communities have a stake in it (Rim-Rukeh et al., 2013). That is, incorporating traditional beliefs/taboo and cultural norms into conservation programs may provide incentives to communities to conserve biodiversity species (Jimoh et al., 2012). For instance, Lingard et al. (2003), Saj et al., (2006); Tengo et al., (2007), Jones et al., (2008), Obasohan, (2008), Kobina and Kofi, (2009), Akindele, (2010) reported the relevance of traditional beliefs/taboo and cultural laws in the continued existence of great apes and primates species. Since traditional beliefs and cultural practices as done in most part of African communities are environmentally friendly and sustainable, thus contributing so much to natural resources sustainability and conservation (International Institute for Environment and Development, 1992). However the absence of vital roles of traditional beliefs/taboo couples to poaching, habitat fragmentation and degradation greatly influences their conservation in any locality of biological hot spot (Charnley et al., 2007). For instance, the Organization Cultural Survival (2002) declares "the diversity of traditional beliefs around the world is increasingly endangered whereas traditional belief constitutes great value for wildlife conservation. The World Heritage Convention states that "loss through deterioration or disappearance of traditional belief heritage constitutes an impoverishment of the heritage of the indigenous people". In addition, traditional beliefs heritage and its conservation practices are less promoted, resulting in their

abandonment by local populations in many areas (Rose *et al.*, 2003).

Despite the fact that Cameroon is signatory to the UN Declaration on the Rights of Indigenous Peoples which recognizes that indigenous peoples have the right to traditional belief expressions and that States must afford legal recognition to such practices. And the fact that, the 1992 Convention on Biological Diversity which dictates that contracting parties shall ‘‘preserve and maintain practices of indigenous communities embodying traditional beliefs relevant to the conservation and sustainable use of biological diversity’’. Together with the 1994 Law on Forests, Wildlife and Fisheries (Law 94/01) and the supporting decrees on wildlife issued in 1995 (Egbe 2001, Caldecott *et al.* 2005, Taah *et al.* 2005) prohibiting the killing of chimpanzees seems to be less growing and practicable in chimpanzee hot spots regions of Cameroon (Etiendem *et al.*, 2011). This is because prosecutions are rare and traditional beliefs (Kakati and Doulo, 2002) and practices which possess positive potential for the conservation of chimpanzees is now a growing serious threat that have led to the extinction of this species in most of its former habitat (Tsi and Chuo, 2016).

All Chimpanzees are endangered and the Nigerian-Cameroon chimpanzee (*Pan troglodytes ellioti*) which is the main subspecies of chimpanzee found in the Kimbi-Fungom National Park and Kom-Wum Forest Reserve is considered the most endangered of all currently known chimpanzee subspecies (Morgan *et al.*, 2011). It is also the most recently recognized subspecies of the common chimpanzee (*Pan troglodytes*) and it has been estimated that there may be as few as 3,500 individuals living in the wild (Morgan *et al.*, 2011). This is because they are already becoming very rare due to indiscriminate killing for traditional medicinal preparations (Ekinde *et al.*, 2005). Etiendem *et al.*, (2011) have reported the use of apes (gorillas and chimpanzees) in traditional medicine and as fetishes. Even today, chimpanzees are greatly hunted for their body parts such as, bones, heads, hinds, skin or skulls for traditional rituals and to obtain chieftaincy title within community social structures (Tsi and Chuo 2016). More so, significant immovable traditional beliefs heritage sites with outstanding values have been lost, or are today quickly deteriorating (Tsi and Chuo 2016). Present indicators show that these practices are generally on the decline due to changes in the traditional belief systems of the indigenes with regard to the spread of new cultural practices (Hens, 2006). These threats are exacerbated by the continuing growth of human populations within the range of *P. t. ellioti* and the development of the economies around the study areas due to increase in agricultural and pastoralist activities leading

to loss of habitat and habitat quality (Morgan *et al.*, 2011, Chuo and Tsi, 2017 and Doumbé, 2014). As such, *P. t. ellioti* is listed as Endangered on the IUCN Red List of threatened species (Oates *et al.* 2008a) and is classified under Appendix I of CITES and is nationally classified in Class A among the most protected species (MINFOR, 2007). Despite all these, the role of traditional beliefs in the conservation of *Pan troglodytes ellioti* is reflected in a variety of practices including sacred forest, sacred landscapes, taboos, ritual, and cultural laws (Ekinde *et al.*, 2005). If such traditional beliefs are encouraged, such forests will contain very rich biodiversity and harbors a good number of *Pan troglodytes ellioti* and many endangered wildlife species. Equally, traditional beliefs such as taboos/cultural laws in cooperation with wildlife laws can greatly influence chimp’s conservation. Therefore this study seeks to identify and present traditional beliefs and practices influencing the conservation of *Pan troglodytes ellioti* and to propose possible strategies for their amelioration within the study areas.

II. MATERIAL AND METHODS

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, 2011). 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.

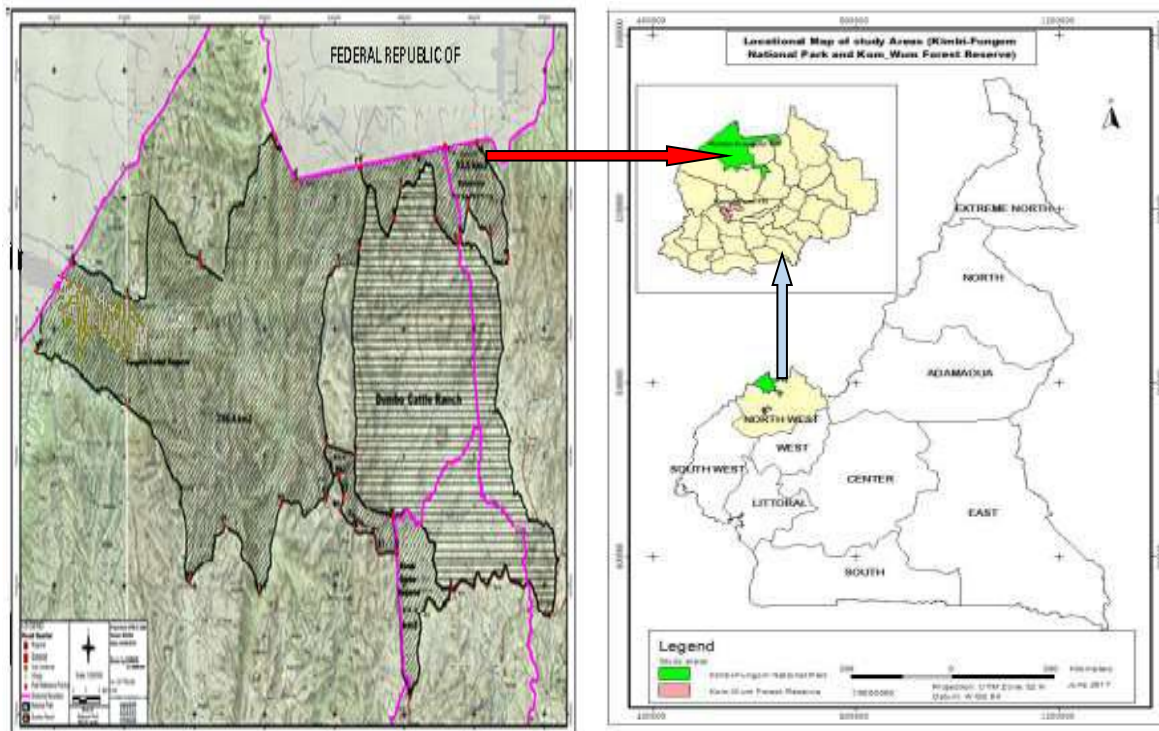


Fig.1: Map of Cameroon showing location of the K-FNP in the NW Region of Cameroon.

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

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.

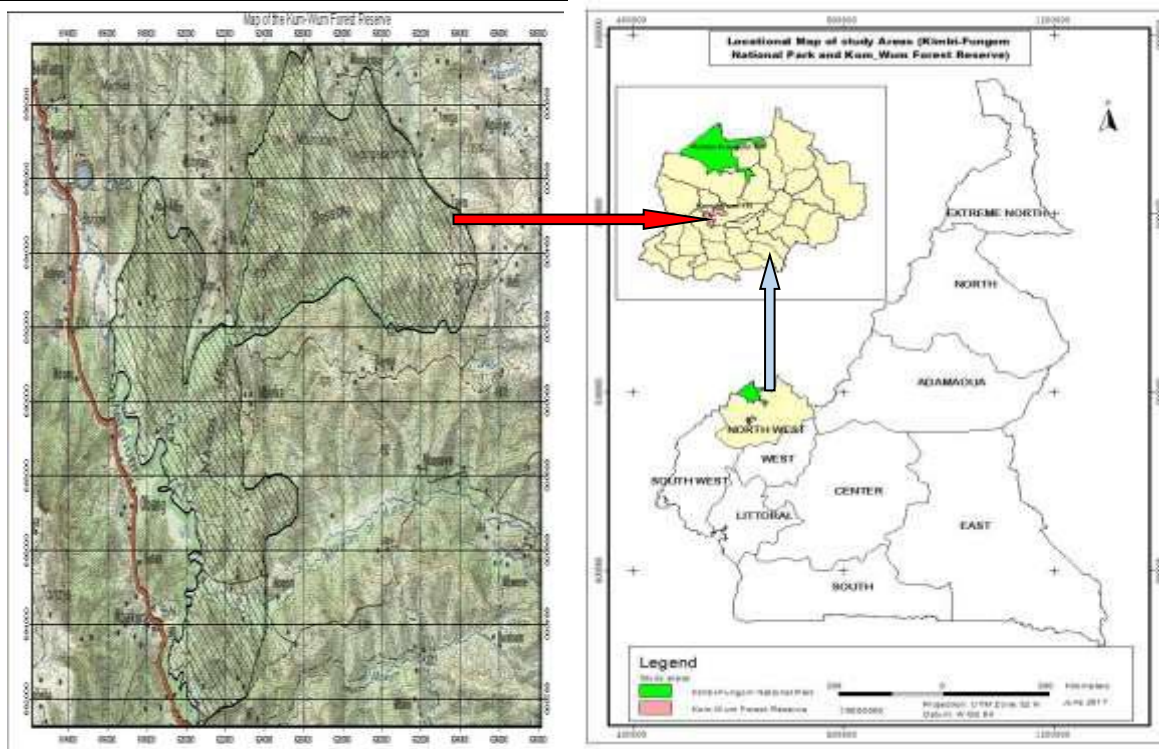


Fig.2: Map of Cameroon showing location of the K-WFR in the NW Region of Cameroon.

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

2.1.2. Data Collection and Analysis

Data collection started with the reconnaissance survey intended to obtain information on the socio-cultural background of the people of the study area. A visit was made to the Fundong, Wum, Zoa, Furu-wa, Funfuka and Ako councils where literature reviews were obtained, personal interviews and discussions were held with officials and staff. The Chiefs/Fons of villages and locally employed village eco-guards were encountered to gather vital information about the study area and to relate the importance of the research. These interactions assisted in the selection of the 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) from K-FNP and six (Moghom, Mbengkas, Biaso, Mentang, Mbongkesu and Bu) for the K-WFR. The villages were selected based on their close locations, activities within the proximity of the forest and high levels of dependence by the local people for livelihood within the forest. The pertinent information obtained from the visits, were employ to build up structured questionnaires used in conducting the interviews. Questions related to chimpanzee presence/absence, frequency of sightings and/or calls (i.e., regular, seasonal or infrequent), most recent sightings/vocalizations, numbers seen, and chimpanzee movements (for example, if chimpanzees are transient visitors, from which direction did they travel to and

from?), If chimpanzee are hunted or not with reasons. Questions were equally designed to investigate respondent's perceptions on the power and influence of traditional knowledge systems that is, if there exist traditional beliefs/taboo, folklore/myths, totems, cultural laws and practices that can determine the conservation of this species. During the research proper, data were obtained through an interviewer-administered questionnaire survey, personal interview, and group discussion as well as through simple observations. The first aim of the survey was to explore respondents' knowledge of chimpanzee and investigate their awareness of, and attitudes toward, traditional beliefs, taboos and cultural laws associated with them. Secondly, respondent's perceptions of the power and influence of traditional beliefs and practices on the protection of chimpanzee were explored. Two research assistants (village local eco-guards recently graduated from CIRMAD) were recruited to assist the senior author in conducting the survey. In each village, a systematic random sampling technique was used to select participants to be interviewed. Households along village paths were randomized by sampling every second household encountered. The track log on the GPS was activated to avoid interrogating the household twice and the coordinate of each household interviewed taken. At the level of each village, emphasis was placed on hunters/traditional healers identify by the chiefs or village

council chairman based on their ecological knowledge and experiences in the culture and tradition of the study areas. This assisted the researchers to gain insights into the traditional beliefs, cultural laws, taboos, concerning chimpanzees as well as the challenges that might influence the effective conservation of chimps through traditional beliefs in the study areas. Altogether, there were about 1300 households in the sample areas. A total of 384 questionnaires were attempted and only 288 valid household heads responded to complete interviewed administered questionnaires within the six villages. At the beginning of each interview, informants were briefed on the subject and objectives of the research. 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. Adult men, women, and youths were targeted. In each household, the older family members were interviewed and any other contribution from members were considered same for that interview.

Data analysis started by decoding all the information reported during the survey. Investigation designated very little difference between villages for most responses, and because of this, data from all twenty two villages were

pooled during the analysis and 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 persons. This assisted to ensure a more reliable and credible research findings. 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.

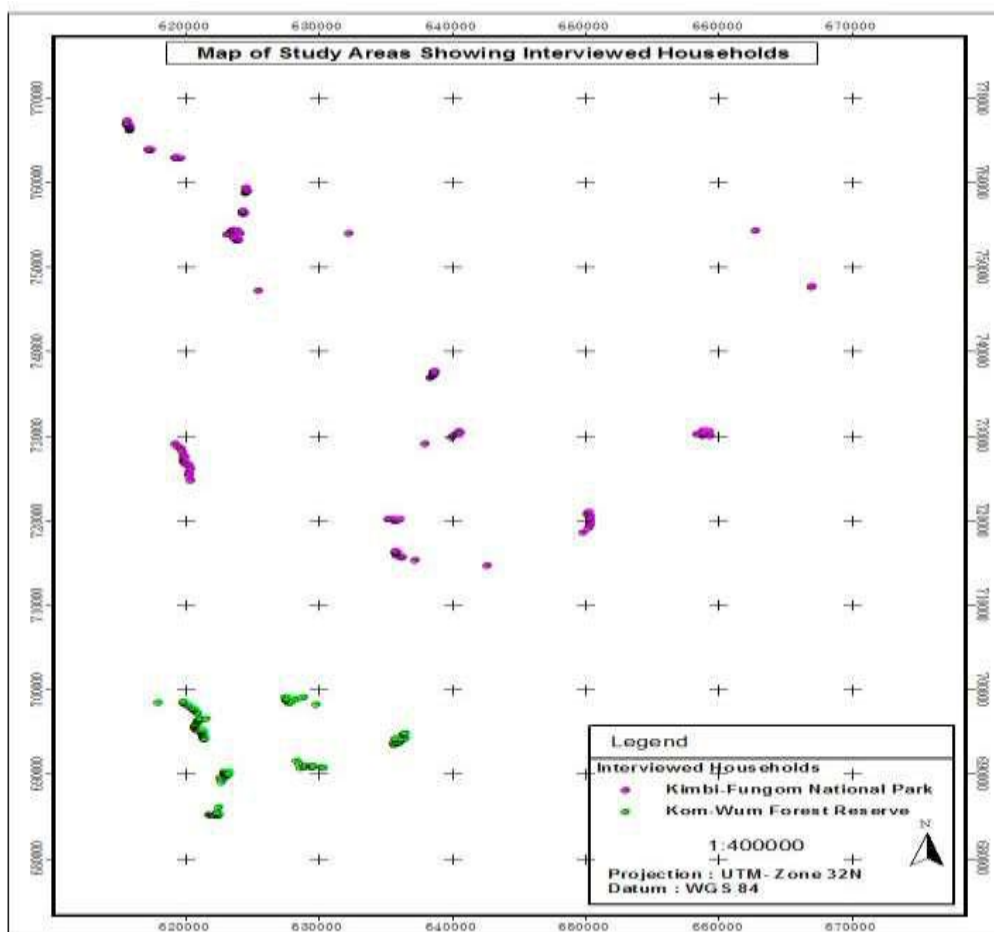


Fig.3: Map of the study areas, showing interviewed household
Source: Field Survey, March, 2015-November 2016.

III. RESULTS

3.1. Demographic factors of the interviewees

Figuring out 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) and the old (60+) constituted 13%. As such, the improper distribution of human resources to accommodate the needs of the increasing population has made the study areas susceptible to poaching by the local communities for survival. The household size computed for the households surveyed indicates that majority (41.1%) of the households surveyed had household size within 6-9 members while 12.2% of the households had the least of household size above 15 members. The implication is that each household has a large number of dependants to feed, clothe and house. The situation has made it very difficult for the eco-guards to exercise control over the activities of the local communities hence the continual encroachment on the park and reserve. 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 survey also revealed that the people lack the requisite education and required occupational skills that would enable them to compete effectively for different types of jobs or alternative livelihood activities. As a result, they turn to find their source of livelihood in the reserve where little or no skills is needed. The high illiteracy rate among the people was observed to be affecting their appreciation and support for conservational policies in the study area. 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. The low income level of the people partly explains their continual dependency on the agricultural activities since little capital is required to finance them. As such the local people are often left with nothing to save or even access the national health insurance scheme. This could probably explain the over dependence of indigenous people on traditional medicinal in the reserve for their medical reasons. Chuo, (2014) working on the status of gorilla, chimpanzees and buffalo in the Black Bush Areas of Waindow NW Cameroon, reported the same kind of income earnings which was the main reason for over hunting by the indigenous people to meet up with livelihood need.

3.2. Indigenous Knowledge of *Pan troglodytes ellioti* in the study sites

Questions were designed to investigate the ingenious knowledge of chimpanzees in the study area. From the result, a vast majority of respondents (99%) (n=110) were aware of the presence of chimpanzee in the forest reserve around their village. However, only 84% (n=110) of respondents could accurately describe a chimpanzee as a large black and hairy animal, with a red face; no tail; that walked on four limbs; and upright occasionally. Up to 78% of the respondents said they have seen chimpanzee either directly in the forest or as pets or in the village square when killed and brought to the village by hunters. Most of the respondents who best describe chimpanzee, were older people (>55 years of age).

3.3. Traditional Beliefs relating to *Pan troglodytes ellioti* in the study sites

Respondents were interviewed if there exist traditional beliefs associated with chimpanzee in the study areas. Despite the fact that many people accepted the existence of local belief, they said it is an issue of the past. The figure 4, show the percentages of interviewees in relation to traditional belief associated to chimpanzee in the study areas.

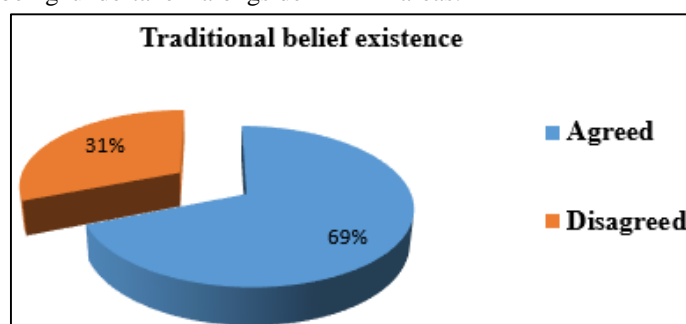


Fig.4: Percentages of interviewees to traditional belief associated with chimpanzee

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

Figure 4 show that, an overall of 69% ($n = 198$) of respondents “agreed” with the statement that “there exist traditional beliefs relating to *Pan troglodytes ellioti* in the study sites. This result is close to those of Tsi and Chuo, (2016) working on great apes and buffalo, in which 73.33% of informants agreed to the existence of traditional beliefs of their study area. While 31% ($n = 90$) of the respondents disagreed with fact that there exist traditional beliefs. Although chimpanzee was the main focus, some respondents also mentioned the use of, monkeys, leopards, birds and others animals that holds traditional beliefs.

Equally, interviewees were questions if the practices of traditional belief associated with chimpanzee should be continued or stopped? From result, respondents were almost equally split between “disagree” 47% ($n = 135$) and “agree” 44% ($n = 127$). About 09% ($n = 26$) however remained neutral. This was further demonstrated when 78% ($n = 225$) of respondents said they may not encourage their children to practice culture with chimpanzee. Young people (20–29 years old) were less inclined to support youth involvement in chimps practices than older people (>50 years old). Varying opinions were

given with respect to the conservation of chimpanzee in the study area. For instance 57% ($n = 164$) of the respondents agreed that chimpanzee should be protected so as to increase their number and attract tourists, promote development within their areas. While 43% ($n = 124$) did not agreed or remain neutral to the protection of chimpanzee for fear of losing their land or getting free access to natural resource exploitation and for traditional practices. For example the people of Biaso clear stated that the Biaso community forest, (which harbors a good number of chimps) is not part of the K-WFR with respect to the irony of forestry officials to expand the reserve.

3.4. Taboos and Cultural laws relating to *Pan troglodytes ellioti* in the study sites

The interviewees were equally question on the existence of taboos and cultural laws associated with chimpanzees. The existence of taboos against hunting and eating chimpanzees in the villages was very effective in the ancient time. Today only a few people still respect the norms governing taboos emphasized by one of the interviewees. Figure 5 shows the percentages of respondents to the existence of taboo/local laws identify in the study areas.

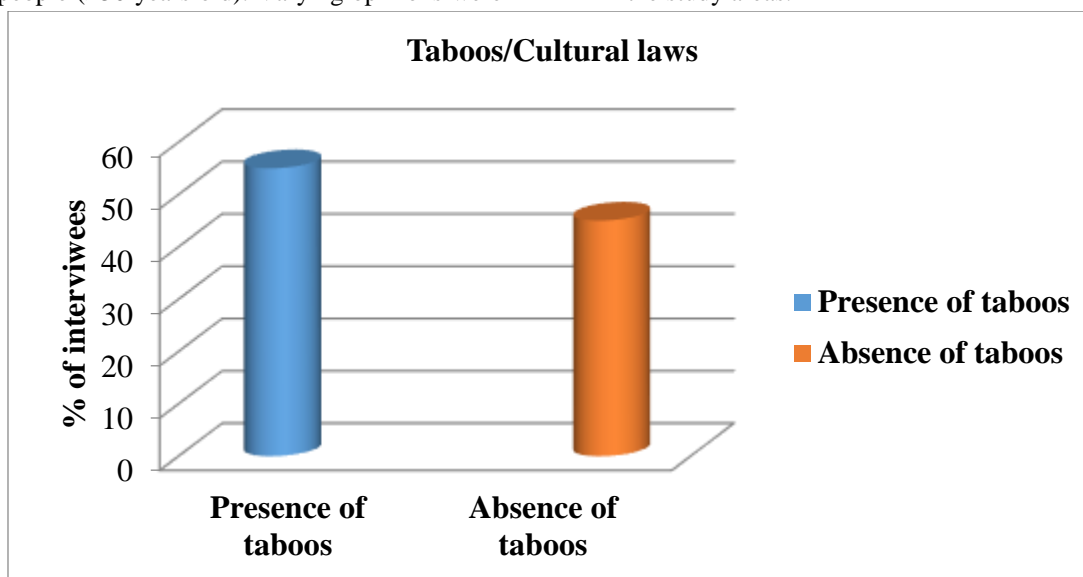


Fig.5: Percentage of interviewees to the existence of taboos/cultural laws
Source: Field Survey, March, 2015-November 2016.

From figure 5, more than half of the respondents, 55% ($n = 158$) mostly older than 50 years, were aware of the existence of taboos that prohibited the hunting and eating of chimpanzee in their villages. Etiendem *et al.*, (2011) reported similar result in which 56% ($n = 103$) of respondents were aware of the presence of taboos relating to great apes. Most of the respondents 70% ($n = 111$) who testified to the existence of taboos against hunting and eating chimpanzee, reported that these taboos were in place before they were born but are things of the past. A

few of them ascertain that most of the presently respected taboos, mainly enforced through traditional councils, were recently put in place due to the pressure from the government to protect chimpanzees.

Nearly all interviewees 96%, ($n=152$) who accepted the presence of taboos said these taboos are not still respected. For those who said they are still respected, were talking about new taboos or laws recently introduced by the traditional council. In the days of old as reported by one of the respondents, any defaulters were

either punished by automatic spiritual sanctions, such as falling ill and/or dying. But today, defaulters are sanctions by the chiefs or traditional council elites. For instance, in the village of Biaso, the community chairman reported that people, who hunt chimpanzees, receive any of the following of kind punishment, pay fines or disbanded from taking part in communal functions or exiled from the village depending on the council deliberation. While 45% (n=79) of the respondents seem to be ignorance if they have ever been taboos against hunting of animals. Reason suggested for this could be due to loss of ancestral

transmission of power as reported by one of the respondent. That most of the powerful medicine men have died and gone with powerful traditional knowledge due to a careless generation who have embraced new forms of traditions.

3.5. Hunting of *Pan troglodytes ellioti* in the study sites

Questions were also designed to investigate if people still hunt chimpanzee within the study areas. The figure 6 shows the percentage of respondents to hunting of chimpanzee in the study areas.

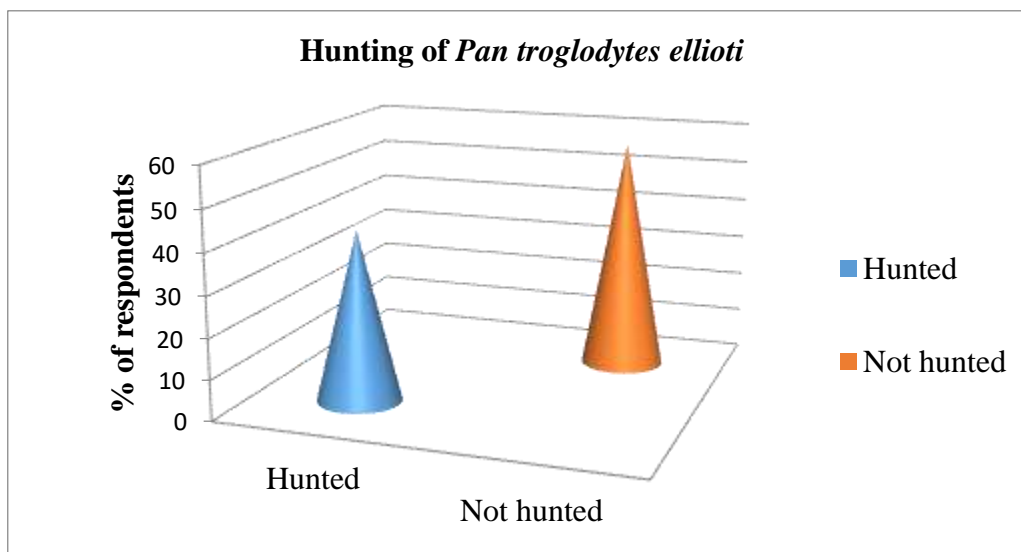


Fig.6: Percentage of interviewees to the hunting of *Pan troglodytes ellioti*
Source: Field Survey, March, 2015-November 2016.

From figure 6, 43% (n = 124) of the interviewees reported that they are hunters who still hunt chimpanzees but in hidings. This is far less as compare to the result of Tsi and Chuo, (2016) in which 77% (n=23) respondents accepted the hunting chimpanzee in the study area. A few of them said most of the people who still hunt chimpanzee's today are from other villages. Two hunters in Mbengkas said chimps are secretly being hunted for traditional rituals. About 12 hunters in the villages surveyed, admitted to have recently killed chimpanzees. One of the hunters in Bu said that in 2008 he shot six chimpanzees within an icon of an hour in the forest reserve. In Mbengkas, one of the hunters said he was privilege to kill four chimpanzees in 2010 and another hunter in Bu reported to have killed three chimpanzees in 2014. The rest of the hunters reported to have killed one or two between the years 2005 to 2016. Some of them went on to show skulls, bones, skin and other chimp's body parts.

The reasons given for not hunting or killing chimpanzee varied according to the majority of the respondents 57% (n = 164) who refused that chimps are not more hunted in their forest. Some said the local traditional council forbids

with sanctions anyone who hunts chimps. Others said they are afraid of new taboos related to chimpanzee. Many interviewees said despite the wildlife law which is minimal to stops hunting, it is very difficult to see chimps or hunt them due to the difficulties of the terrain. In addition to the village restriction, some respondents also highlighted personal reasons why they do not hunt chimpanzee. One of the respondents said they behave just like human beings. Much more, most of respondents 67%, (n = 193) admitted that they fear chimpanzee. This fear is probably motivated by the animal's physical appearance and superstitious beliefs about it. Most of those who fear chimps were women and young people who are not used to chimps.

3.6. Traditional beliefs relating to *Pan troglodytes ellioti* Body Parts and Meat

During survey interviews, questions were equally designed to find out if there are traditional beliefs associated to chimp's body parts or meat around the study area. The figure 7 shows the percentages of respondents to traditional belief relating to *Pan troglodytes ellioti* body parts/meats.

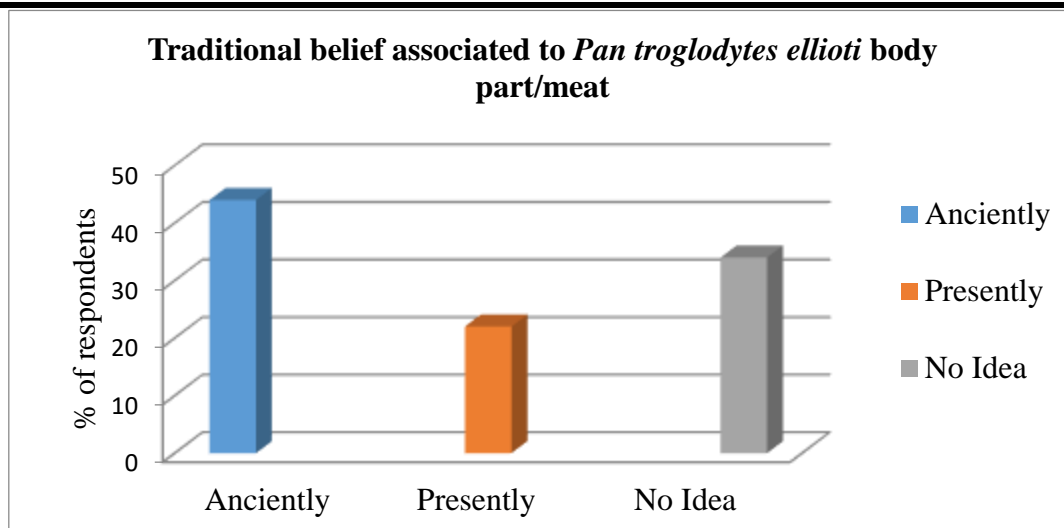


Fig.7: Percentage of respondents to traditional belief relating to the uses of *Pan troglodytes ellioti* body parts/meat
Source: Field Survey, March, 2015-November 2016.

From figure 7, about 44% ($n = 127$) of the respondents said that there existed to traditional belief relating to the uses of *Pan troglodytes ellioti* body parts/meat for rituals and medicinal value, 22% ($n = 63$) said chimpanzee body parts/meat are presently being used for this same purposes as well as for food in special occasions. While 34% ($n = 98$) respondents had no idea but some simply said they are eaten. When compare to the result of Tsi and Chuo, (2016) the same kind of uses were reported. It was notice that most of the respondents who agreed that chimpanzee body parts/meat anciently had medicinal or ritualistic value were mostly older men. Respondents, who reported chimpanzee's body parts/meat used for medicine values, cited that, blood, urine, liver, heart, testis, placenta, dung, hairs, skulls, and other bones. When mixed with other concoctions, to help relieve people suffering from chronic headache, infertility in women, impotence, rheumatism, bone fractures and mental illness especially spiritual illnesses. For those who said chimpanzee body parts were used for rituals, one of them said chimps are either sacrifice to the village god or private gods to seek for protection, prosperity, for good harvest, cleansing of the village or to remove charms buried by enemies. Eating of chimpanzees was optional as reported by some of the interviewees. As such further questions were designed to investigate the local people knowledge of Ethno-primatological practices of *Pan troglodytes ellioti* in the study site.

IV. DISCUSSION

Effort to assess traditional belief practices; cultural laws and taboos of the people in protected areas, and how they have assisted conservation in the past is a strong need. For instance, scholars suggest that incorporation of traditional values which reflect locally important cultural

practices of the people into the management of conservation areas will help in their successful conservation Saj *et al.*, (2006); Tengo *et al.*, (2007), Jones *et al.*, (2008), Obasohan, (2008), Kobina and Kofi, (2009), Akindele, (2010). The villages around study areas have a rich cultural heritage that defines the behaviors as well as guide their use of natural resources. Although these traditional beliefs strategies are useful in promoting conservation and local empowerment, they are still fragile. For instance, result shows that 99% of the local people are aware of the presence of *Pan troglodytes ellioti* in the reserve but they do not seems to understand while they should be protecting them. To them, the conservation of this species is like a hungry man in the mist of riches as reported by one of them. One of the interviewees was so concern about their traditional practices as he exclaimed, "if the conservation of this species is to preserve our tradition good and fine but if our interest is not seek first it is useless".

Subsequently, some of the elites interviewed, reported with a lot of caution that some of their traditional practices demand secretly the sacrifice of chimpanzees to perform certain rituals or to appease the gods. One of the most outstanding practices was reported in Mbengkas. In Mbengkas, as one of the elites confiding to the senior researcher, said there is a village god called "Ngwin" which usually come out in March, June, and October at the beginning of raining season, harvesting season and after harvesting season respectively. He continues that each time they are performing such a ritual; a chimpanzee is caught and killed for the sacrifice. During the ritual, the right hand of the chimpanzee is used. The fresh blood is sprinkle in a spiritual pot with fresh palm wine, leaves of different plant species and other spiritual concussion. The hand which is tied with fresh grasses is then dip into the

pot and ritual is performed in all the junctions of the village. After the rituals, the left hand of the sacrifice chimps is given to the chief and the rest of the meat is cooked and eaten by associates beside the god hut. He continues to say Mbengkas is the only village around the villages in Kom which initially uses chimpanzees for the same kind rituals. For other villages in the past usually used human being for the same kind of sacrifice. It was equally accepted by him and a few that this practice is still currently going on. Being conscious, he added that the elites are trying to seek the face of the god if they could begin using blood of goats or other animals like other nearby villages since the government is forbidding their killing.

The introduction of new forms of traditional beliefs from within or borrow from other tribes as well as from Nigeria, which did not exist in ancient days is becoming rampant around the study area. Many of the villagers now rush for chimpanzee body parts especially skull and bones since it is now believed to be effective to produce protective charms. Equally, chimpanzee ritual for traditional titles is now secretly accepted in some "ngumba" houses. Furthermore, the coming in of modern native doctors with convincing beliefs that chimps body parts/meat is effective for traditional treatments and rituals/riddles have gained grounds. For example one of the interviewees in Mentang, said the juju called "Morguoh" now uses chimpanzee skull in their public manifestation as a symbol of protection and power.

In ancient time, it was a taboo to eat chimpanzees not to talk of hunting them reported one of the respondents in Mbongkesu. For instance, it was a very big taboo to kill a chimpanzee in the ancient days as reported by many of the interviewees in almost thirteen villages surveyed. This was because, if any one kills a chimpanzee, no pregnant woman was permitted to go to the bush until after three months. That is, whether the chimp was killed accidentally or willingly, if she does, automatically miscarriage occurs irrespective of the number of months the pregnancy was. As such, it was a very big taboo to kill a chimpanzee. Anyone who was reported or caught, he and his household were exile from the village with a curse and the claim that he has assassinated children. And if not caught, he automatically became ill and dies within seven days confessing of having killed a chimpanzee. One of the respondents in Bu said at first, it was a taboo to kill chimpanzee because they were considered as the evidence of their ancestors who have died long ago and are watching over them. He went ahead to differentiate between chimpanzees to what he calls "good behave chimps" and "wild chimps". At first, many of the villagers held the traditional belief that "good behave chimps" were evidence of those ancestors who died

appeasing the god. They watch over their village from enemies, protect their crops from other animals and led hunters and herbalists around the forest. This chimpanzee lived in clear and less dangerous areas within forest. On the other hand, "wild chimps" were evidence of wicked ancestors who died and were living in very dangerous places. They were seen destroying crops, bit up villagers who enter their territory. In both cases, it was a serious taboo to hear of someone killing a chimpanzee. If anyone did such a terrible thing, he was stroke to death instantly by the gods.

Equally, one of the informants said in the days of old, chimpanzees were considered as the weakest animals and has humanlike resemblance. There were of no use because people did not eat them. He went ahead to less compares them to animals like lion, leopard, buffalo, elephant and others in which anyone who hunted them were considered as powerful warriors and were attributed greater titles in the "ngumba" house. For example as he added that one of their late chief Bonte Jam fought with a lion and killed it and became the greatest title holder in the whole of Kom. He was given the red father cap title and was permitted to enter into any "ngumba" house in the whole of Kom. But today people are given this title for killing a common chimpanzee it is really strange as he lamented. Equally one of the respondent added that at first, during hunting seasons, hunters were usually sent out to hunt for the palace and anyone who hunt down a chimpanzee was considered as a "woman". As such, it was a shameful thing for a hunter to be mock by the villagers for killing a weak animal. Today, he continues chimps are becoming very rare and people are now sacrificing goats to obtain traditional title something that never happens in those days.

In Mbengkas one of the respondents said it was a taboo to kill a chimpanzee because they were considered as the medium through which their ancestors communicate with them. He continues with an example saying, whenever a great man is to be born in the village they will be cries of joy in the forest as chimpanzee drums their stomach chest, armpit, and sticks announcing the coming of a great person. Another person added that it was same for a year of good harvest and when the villagers were preparing for battle joyful cries represented victory. On the other hand he continues that the bitter cries of chimpanzee foretold danger or a sign that a great man is about to die. The villagers held the belief that if someone saw a chimpanzee, he/she has seen a ghost and was rush to the nearest native doctor to check his fate. People were very much afraid of chimpanzees and no one believed that they could be killed; they were just supper natural. However he ended by saying today this belief has completely die down people are no longer afraid of them.

In ancient time, the people around the study areas were ignorant of the wildlife law that prohibits the killing of chimpanzees and other wildlife. Thus it seems likely that the conservation of chimpanzee in the study area in ancient time, was effective not because it is the law, but because of traditional beliefs and taboos. Colding and Folke (2001) reported that the regulations based on traditional customs and sanctioned by traditional institutions are often more likely to be respected than those imposed by distant and ineffective government institutions. In ancient time, people were very much afraid to hunt chimps based on the frightful stories said about hunters who attempted killing them. For instance, stories were told of hunters who shot and killed a chimpanzee, and afterward discovered strange things happening to them, their families or from the village. A man in Mbongkesu gave a life testimony that about fifty years ago he was seriously beaten up by a mother chimpanzee leaving him unconscious. For catching her child along a river bank feeding on crabs without him noticing that the mother was around. Thanks to the intervention of native doctors, he recovers from what he calls mystical pains but has been leaping since then. The news terrified hunters in the village as many became frighten when they hear about chimps. Another story was told in Mbengkas of people who once killed chimpanzees without being authorized by the chief or elites and end up mad and died. Equally in almost all the villages, stories were told of pregnant women who got miscarriage because a chimpanzee was killed. It was a taboo to kill a chimpanzee for the interest of pregnant women. In BU, an elderly person attest how a nursing chimpanzee seize his cutlass and wounded his right leg sending him home empty handed for insisting shooting on her despite her plead for safety. Today all these have become stories not realities. Many now hunt chimpanzees for traditional title, rituals, medicine and for food.

Traditional beliefs associated with chimpanzee body parts is now rampant throughout the villages surveyed and other tribes especially those trading with Nigerians. For instance, many diseases are perceived by the villagers to be caused by loss of ancestral protection and can only be cured by traditional medicine. As such, people rush for chimp's body parts due to the high desire for medicine, rituals, ancestral protection, traditional title, and for food. For example, 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. There also existed a strong belief that the bones of chimpanzee are very useful as an antibiotic to make children strong. Bones were reported to treat humans with bone fractures. Hairs when burnt and mix with other leaves treat burnt areas on human body.

Chimps hunted half dead were said to be used as sacrifice by native doctors on their shrines. Skulls used for incantation and to produce charms hung in houses for protection. Skulls when warmed on fire and place on the head, relief chronic frontal headache. Chest bones were used to heal people suffering with asthma. Back bones help to relief west pains in human when warm and place on the paining side. A hunter in Biaso showed off a chimpanzee femur bone that he uses in curing human diseases. Eating of chimpanzee meat was a matter of choice; childless mothers are recommended to eat and drink the soup of chimpanzee cooked meat to cleanse their wombs. The soup from the boil meat was given to pregnant women to strengthen the child in the womb and to east delivering. Others held the belief that women of child bearing age shouldn't eat chimpanzee because they will give birth to chimpanzee -like babies. A woman in Mbengkas said: "eating an animal that is humanlike can bring ill luck to an entire family". A Biaso woman stated that she cannot eat an animal that looks exactly like a human. Despite the fact that chimps have become rare, their continue hunting to meet up with traditional demands, remains a predominant threat to the small group of chimpanzees left in the forest. The hunting of *Pan troglodytes ellioti* for medicinal, rituals and food around the study area is the determining cause for their continuous decline. As such, it is vital that strategies should be put in place by all stakeholders concern to ameliorate those traditional beliefs that can boast conservation of *Pan troglodytes ellioti* while eradication with prudence bad practice that are detrimental to their conservation.

V. CONCLUSION AND RECOMENDATIONS

Traditional beliefs and taboos/laws identified within the study area can play some roles in chimpanzee conservation. Even though villagers living around the study areas less appear to recognize and respect traditional beliefs regarding chimpanzee. This is because ancient tradition/taboo that forbid the killing or use of chimpanzee's body parts have now evolved into new cultural practices. Such cultural practices (in form of traditional dance, rituals manifestations, and traditional medicine) are confirmed to originate from Nigeria and from within or nearby tribes within the nation greatly using chimpanzee body parts for traditional practices. However, interest and support of such traditional beliefs is eroding fast as these villages are endorsing new traditional taboos/cultural law through traditional councils. Equally hunting for traditional titles, for food and to alleviate widespread poverty incidence in an increasing population, posed addition threat to the remaining chimpanzee within the study area. In addition,

dwindling powers of traditional authorities and cultural deterioration, due to modernization and embracement of western religion, limit the efficiency of the application of these traditional beliefs as conservation tools. Thus, the loss of traditional knowledge concerning chimpanzees in this area is imminent. Despite the optimistic of some of the traditional belief practices, others with negative consequences on chimpanzee conservation, couples with the fact that law enforcement is very slow is a call for concern. As such, traditional beliefs/taboo if encourage could be the only reason why chimpanzees shouldn't be hunted. Nevertheless, adaptation of some aspects of these traditional beliefs/taboo may be valuable for *Pan troglodytes ellioti* and other primates conservation as long as the local communities have a stake in it. However, they require institutional support to strengthen them to be more effective and donors to fund the preservation in a more incredible manner. Interestingly, elderly people in the communities should continue passing on the local knowledge to the new generation for its continuity. Local communities should be engage as the guardians jointly with or in place of the government administration. Local traditional belief stories tell using current technology in hopes of making the indigenous knowledge available again to their own people. It is pertinent to manage the conservation of this species with the help of traditional councils who still holds values to these taboos to conserve the remaining group of chimpanzee still in existence in the forest reserve. Efforts should therefore be put in place improve upon the educational and health infrastructure facilities and also create job opportunities for the increasing number of the youth. Indigenous people should be constantly educated on how traditional belief practices contribute to conservation and those that lead to degradation of the chimpanzees. Documentaries should be recorded on the Indigenous Technical Knowledge for future use. The state should develop participatory approaches that are adapted to the many contexts of indigenous communities, empowering them to care for their local environments.

CONFLICT OF INTEREST STATEMENT

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

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