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Social norms and cultural services - community belief system and use of wildlife products in the Northern periphery of the Korup National Park, South-West Cameroon

Abstract: In many traditional societies, beliefs and taboos influence human behaviour towards the natural environment. Such beliefs and taboos are informal institutions where norms rather than official laws determine land use and nature protection in general and wildlife in particular. The present study on beliefs and taboos of the people of the northern periphery of the Korup National Park is an attempt to reveal how norms influence their relation to the environment. A total of 195 households were sampled through a household survey conducted in four villages. The results revealed that before the application of “modern” approaches for wildlife protection and management, the people relied on norms to establish a relationship with wildlife and nature. The enactment of the 1994 legislation on forest, wildlife and fisheries resulted in stiff resistance as it contradicts traditional norms. It was found that 57.4 % of the respondents still perceive wildlife as a resource that can never get extinct. Traditional norms had a differentiated impact especially on game protection. The study recommends that a wildlife benefiting code of beliefs and taboos is developed to provide a basis for establishing a synergy between park management laws and traditional belief/taboo systems that drive the management of wildlife.

Keywords: belief systems, taboos, utilisation of wildlife products, Korup National Park, Cameroon

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1 Introduction

The tropical humid zone of Africa is home to some of the most biologically diversified ecosystems and endangered species of plants and animals commonly found in similar regions elsewhere in the world. Therefore, interest in protecting these diverse ecosystems and especially rare wildlife species has high attention at international scale. At the same time, hunting of wildlife has been an integral part of the African culture since the continent was inhabited. Furthermore, wildlife products are of utmost importance for the livelihoods of traditional forest dwelling communities as they play a pertinent role in their belief systems and taboos [1]. Taboos are considered as informal institutions which are decentralised and self enforced [2]. They are more common in communities with pool resources that can exclude outsiders and regulate their use [3]. Culture, as a tool in conservation biology, takes into account the role of social taboos in traditional societies. Some animals are regarded as symbols of power, respect and are therefore considered as sacred and excluded from hunting [4]. Similarly, there are some tabooed species that are only used for sacrificial or ceremonial purposes and are believed to enable connection with the ancestors. Such species tend to be highly protected, thus such belief systems have high potential to promote sustainability and help to protect rare species. However, the same level of protection might not be applicable for other species, or might be spatially differentiated into zones where such rules are applied or not [5].

In Cameroon, wildlife is hunted mostly for food and for commercial use. However, some local communities attach strong cultural importance to this resource; for example, some traditional societies in the Mount Cameroon region believe in human incarnation through animals. These

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animals are a symbol of prestige and demonstrate the level in the hierarchy of power in such communities. Although these societies have a strong cultural appreciation for some animals, structures to transfer this appreciation into wildlife management are missing.

This study focusses on the northern periphery of the Korup National Park as a representative area where traditional norms and beliefs still determine wildlife management. We assess the people's beliefs and taboos that determine the wildlife product utilization as a basis for comparison with the cultures of other forest communities. The following hypotheses were formulated considering how sustainable and successful wildlife management is performed:

- Belief systems hinder sustainable wildlife management
- Taboos promote sustainable wildlife management.
- Areas protected by park authorities have a significantly higher game diversity than those where belief systems and taboos drive the wildlife management.

a 3 km radius around the park and represent relevant community hunting zones. Since the villages are relatively small, the purpose was to reach all the household heads. Data were collected from October to December 2009 to cover parts of the rainy and dry seasons. Some household heads were either not available during the survey period or were not willing to answer the questions. The total number of respondents surveyed is displayed in Table 1. The survey covered a wide range of issues or “a number of issues” (knowledge on wildlife species, their importance and use, beliefs, taboos). Additionally, we complemented them through interviews, including land chiefs (4) and members of the secret society “Ekpe” (4). They were asked open questions to explore aspects that address specific community issues including religious or ethnic matters that could not be covered within the standardized surveys.

For data analysis, we used the statistical package for social sciences (SPSS) 16.0 version [7] and standard statistical analysis software.

2 Methods - study site and data base

The study was carried out in the northern periphery of the Korup National Park (KNP) which extends from latitude 5°30'N to 5°71'N and 8°42'E to 9°46'E; it is situated in the neighbourhood of the Oban Hill Sector of Cross River National Park, Nigeria (Figure 1). The Korup National Park and its peripheral zones cover a surface area of 1,260 km² [6].

We conducted household surveys in the villages of Abat, Bajo, Bakut and Mgbegati, which are situated within

3 Results and discussion

3.1 Traditional perception of wildlife sustainability

In a first step, we analysed the perception of local inhabitants on how the human-nature might impact sustainability in wildlife management. Such perceptions were highly variable and reflected the information status of people (Table 2).

Table 1: Overview on the responses obtained from the surveyed villages.

Village	Total number of households	Respondents (household heads)	Percentages (%)
Abat	62	52	83.87
Mgbegati	55	39	70.91
Bajo	24	21	87.50
Bakut	54	36	66.67
Total	195	148	75.90

Table 2: Perceptions of the local population concerning land use, management and wildlife sustainability.

Perceptions	Villages				Total	Percentage (%)
	Abat	Mgbegati	Bajo	Bakut		
Wildlife can never get extinct	25	26	12	22	85	57.4
Wildlife can get extinct if not well managed	22	11	8	13	54	36.5
No response	5	2	1	1	9	6.1
Total	52	39	21	36	148	100

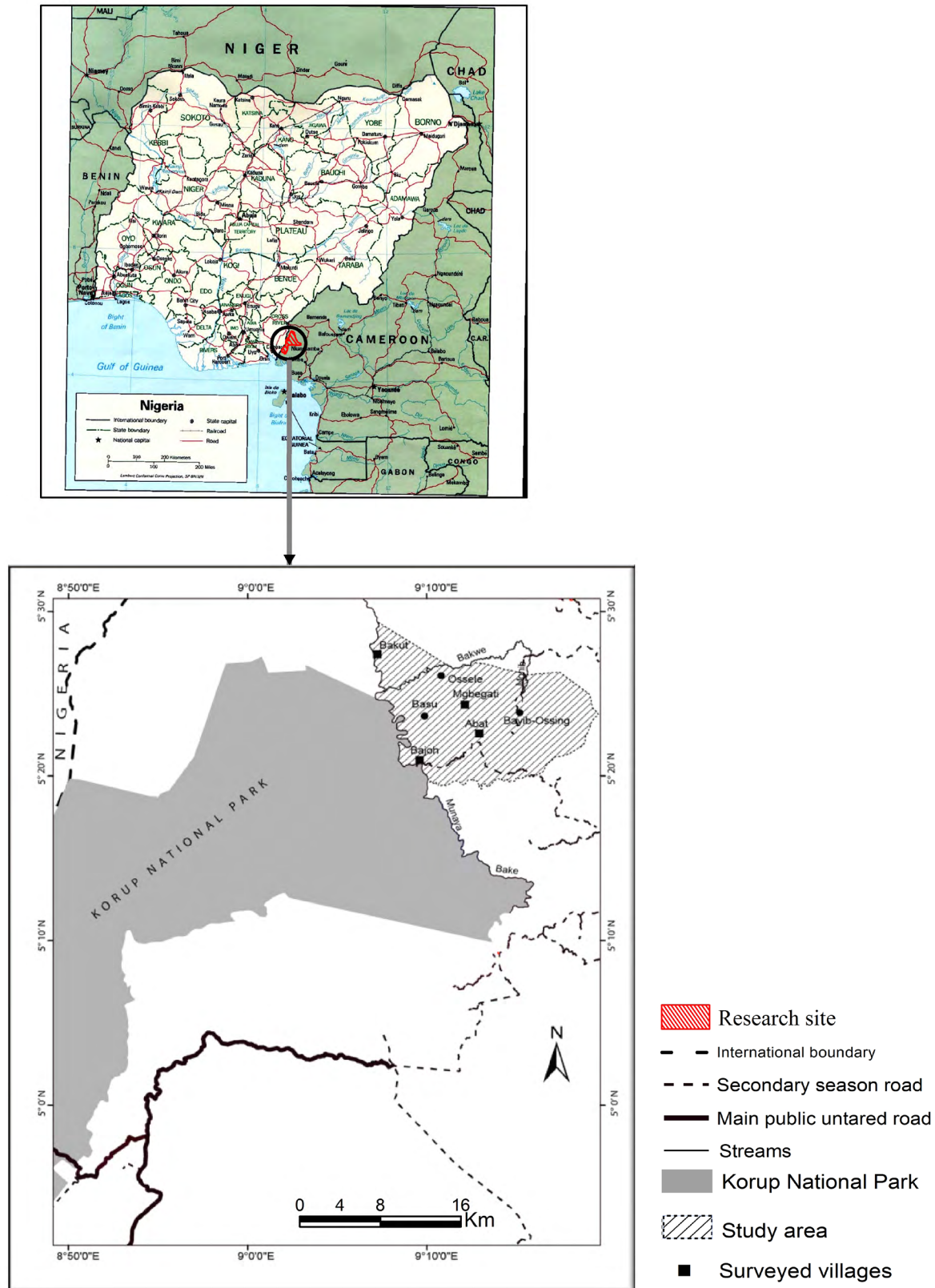


Figure 1: Location of the study area (The study area is found at the administrative boundary of Cameroon and Nigeria; in Cameroon, the specific survey site lies at the North East of Korup National Park which is the first park created in Cameroon in the dense humid forest in 1986).

Out of the 148 respondents, 85 (57.4%) perceive that wildlife can never get extinct. Their main reason for this conception is that wildlife just like human beings reproduces and some, such as bush pig even reproduce faster. Granted that the forest is available, they expect wildlife will continue to be available. Most of these respondents cited their examples based on commonly abundant wildlife and did not take into consideration rare species.

However, 54 (36.5%) of the 148 respondents affirmed that wildlife can get extinct if not well managed. These respondents based their judgement on the fast rate at which rare species are disappearing from the forest. For them, hunting has to be controlled to ensure sustainability of wildlife. An example cited was the case of the cross river gorillas. Formerly, this species used to come down to the village from the forest but now is rarely observed even in the forest. Other species like the giant pangolin have already almost disappeared.

Finally, 9 (6.1%) of the 148 respondents had no personal perceptions or opinions concerning the impact of management or mismanagement on species abundance.

3.2 Measurement of current wildlife sustainability based upon communities perceptions

Sustainability of wildlife management is traditionally measured through counting hunted (killed) species and distance covered before killing an animal, tracing animal

footprints and visually observing number of animals. Also, wildlife sustainability is measured by counting the total number of wildlife caught in traps per week or month and comparing it with previous ones. Table 3 summarizes the results from the different methods of assessing the abundance and frequency of species based on the perceptions of the village community. Statistics show that 36.5% of the population uses all the above methods, while 63.5% uses at least one of the above criteria. This supports the fact that the villagers in a large majority understand the issue of sustainable use of wildlife resources the notions of abundance, frequency or scarcity.

3.3 Belief systems and wildlife products utilisation

An overview of how beliefs are related to wildlife utilization, which animals are affected by beliefs, and what traditional norms or understanding determine their use intensity is presented (Table 4). It shows that motivation behind beliefs has partially a religious or ethnic character (unifying communities, connecting with ancestors), a medical character (healing abscesses), or simply nutritional character (taste and size of the animal). Tables 4.1-4.3 reveal a diversity of beliefs that relate to wildlife products utilisation and summarise restrictions concerning the selling, and the eating of some species especially by women. Respondents placed partial beliefs on animals due to their specific characteristics, taking

Table 3: How wildlife sustainability is measured by comparing quantity and type of species caught [15].

English name	Pidgin name	Scientific name	Community perceived status presently	Community perceived status 10 years ago
Chimpanzee	Ewake	<i>Pan troglodytes</i>	Threatened	Less abundant
Drill	Shumbo	<i>Mandillus leucophaeus</i>	Rare	Abundant
Bush pig	Bush pig	<i>Potamochoerus porcus</i>	Less abundant	Very abundant
Giant pangolin	Giant catta beef	<i>Manis gigantea</i>	Very rare	Abundant
Short-snouted crocodile	Alligator	<i>Osteolaemus tetrapis</i>	Abundant	Very abundant
African civet	Bush pussi	<i>Civettus civetta</i>	Less abundant	Very abundant
Buffalo	Bush cow	<i>Syncerus caffer</i>	Less abundant	Abundant
Tree pangolin	Catta beef	<i>Manis tricuspis</i>	Abundant	Very abundant
Red colobus monkey	Red colobus monkey	<i>Colobus badius</i>	Rare	Abundant
Red-eared monkey	Red tail monkey	<i>Cercopithecus erythrotis</i>	Less abundant	Very abundant
Blue duiker	Frotambo	<i>Cephalophus (Philantomba) monticola</i>	Abundant	Very abundant
Brush-tailed porcupine	Chuku chuku beef	<i>Atherurus africana</i>	Abundant	Very abundant
Cane rat	Cutting grass	<i>Thryonomys swinderianus</i>	Abundant	Very abundant
African rock python	Mboma	<i>Python sebae</i>	Less abundant	Abundant
Bay duiker	Sleeping deer	<i>Cephalophus dorsalis</i>	Rare	Abundant

Table 4.1: Belief related to commercialisation of wildlife.

Belief	English name	Pidgin name	Scientific name	Reason
Some animals are not sold (non-commercialisable wildlife)	African civet	Ezo	<i>Civettictis civetta</i>	Eaten in the family because it is considered to unite communities.
	Giant pangolin	Beka njock	<i>Manis gigantea</i>	Eaten in the family due to its large size and fine taste.
	Bush pig	Ngume	<i>Potamochoerus larvatus</i>	The lower part of its head is eaten by the hunter's age group to honour him for killing a powerful animal.

Table 4.2: Beliefs related to traditional use of wildlife.

Belief	English name	Pidgin name	Scientific name	Reason
Some animals used for traditional rites (Wildlife for ritual purposes)	Yellow backed duiker		<i>Cephalophus silvicultor</i>	Believed to support ancestral connection
Wildlife products used by traditional healers	Flying squirrel	Ebuh	<i>Idiurus macrotis</i>	Skin is used in healing burns.
	Viper	Afablé	<i>Atheris squamigera</i>	Tooth used in healing female breast abscesses.
	Potto	Effimbih	<i>Perodicticus potto</i>	The hands are cleaned and the water mixed with some leafs and applied to pregnant women to strengthen their babies. Used for the initiation of members into the Ekpe secret society, meant for men. For somebody to become a member of this society, he has to give meat to be eaten. Dried wildlife is counted in the form of limbs. 30 limbs are required. 20 are given when the person is alive and the remaining 10 are given by his family when he dies. For example, blue duiker is counted as 1 limb, a bush pig 2 and a mandrill 4.
Wildlife used for the initiation of members into secret societies	All animals except rodents			

Table 4.3: Beliefs relating to wildlife consumption based on sex and social status.

Belief	English name	Pidgin name	Scientific name	Reason
Some wildlife is eaten by people of a particular sex (men)	African rock python	Nkam	<i>Python sebae</i>	The meat is believed to increase sexual power of men.
	Leopard	Mgbe	<i>Panthera pardus</i>	The meat is believed to increase sexual power of men. The skin is taken home as trophy by the hunter.
Some wildlife restricted from pregnant women	Red -eared monkey	Mbick mbock	<i>Cercopithecus erythrotis</i>	This monkey coughs, so when eaten by a pregnant woman the child will be infected with that cough.
	Red river hog	-Ngume	<i>Potamochoerus porcus</i>	This animal's activities are associated to witchcraft. So, when eaten it causes miscarriages.
	Terrestrial tortoise	Nquit	<i>Chelonoidis denticulate</i>	When eaten it will make the child to move as slowly as the animal.
	Brush-tailed porcupine	Nyup	<i>Atherurus africana</i>	The animal is believed to be stubborn so when eaten, the child will be stubborn.

leopard and python as examples, whose whiskers and bile are believed to be very poisonous, but whose meat is expected to provide exceptional sexual power. Pregnant women are barred from eating brush-tailed porcupine

because of its potentially negative impact on a child's intellectual capacity.

The survey revealed that 20.3 % of the villagers obtain information on these beliefs through observation, 16.2

% through practice and 50% through both means. This suggests that existing social structures play an important role in the transmission of knowledge on beliefs.

The findings on how, for which reason and based upon which character associated with the respective animal are the different rules set up, are in accordance with other findings. According to some authors [8], such traditional perceptions developed over millennia in Africa and are still relevant in influencing the societal behavior.

3.4 Taboos that relate to wildlife utilisation

Taboos that relate to wildlife use are, for instance, that people's totems (incarnation species) are not eaten; this is the case for chimpanzees and is very common in Mgbegati, and to lower extend, in the other villages. Totems protect their owners and their effect is considered to be inborn [9]. Most Central African communities believe that, after the death of a human being, his spirit lives within the animal. Each clan has a particular animal species, which hosts the spirits of its dead members. This animal species represents their 'emblem or totem' and is highly respected and protected by members of the clan concerned [10]. In the special community context of Mgbegati, killing a chimpanzee is synonymous to killing the owner of the totem.

Another spatially relevant taboo is that hunting in sacred forest is forbidden. This is the case for a whole forest area in our study region, the so called Ekpe sacred forest and village community forest. Table 5 gives more details on areas where hunting is forbidden.

One author [10], argues that, apart from taboos, there are traditional rules related to mystic forces such as "genie", "juju", "djengi", "siren" and others. According to results from his work in Central Africa, each clan is linked to a genie, believed to reside in the mystic site 'sanctuary'. It is believed to hold power to protect members of the clan and to guarantee wealth. For the Baka people (pygmy), Djengi protects and provides with

power. Siren or Mamiwata is also one of the mystic forces respected by communities in most places. It is believed to reside in water and to regulate the productivity of fish and other water animal species. Juju is believed to be important for conservation of culture and defence of the society, and to guarantee the welfare of the community. It is believed to punish the people engaged in misuse of resources including excessive hunting and fishing, deforestation, etc. In Korup area, Cameroon, the Ikenge people in the National Park have banned outside hunters from their portion of the forest. The 'Ekpe juju' was used to enforce the ban. Non indigenous hunters were evicted from villages, anti-poaching committees were formed and illegal forms of hunting were increasingly reported to the authorities.

So, these forces are still respected in the use of wildlife products. Communities believe these mystic forces have an important role in regulating resources and protecting community members. They are believed to reside in sacred sanctuaries restricted to specific persons who play the role of mediators between the genie (genius) and their clan. They enter these places for ritual ceremonies. Traditionally, activities such as hunting, gathering, etc. are not authorized in such places. For instance, anybody caught hunting in the Ekpe Forest is punished by having to pay 10 limbs of meat and 12 jars of palm wine. In case the person is unable to get all these, the fine can be converted into money (nearly 40 USD). This restriction is believed to have contributed to the protection of animals and plants.

Also, hunting on a particular day (Friday) can be prohibited. This applies for instance in Bakut. Considered as a "market day", inhabitants stay at home to sell their farm products and buy goods from traders. Hunting by women is also forbidden due to their fragile nature in case of attack from animals such as chimpanzees. They are only authorised to gather wild fruits of commercial value such as bush mango (*Irvingia gabonensis*) and eru (*Gnetum africanum*).

Table 5: Some places in the study area where hunting is forbidden and reasons thereto.

Village	Place forbidden from hunting	Reason
Abat	Awang-ah Mabick	village sacred forest where traditional rites are performed
	Ekpe Forest	sacred forest for members of the Ekpe society where they initiate members
Mgbegati	Esen Eyeme	village sacred forest where traditional rites are performed
	Ekpe Forest	sacred forest for members of the Ekpe society where they initiate members
Bajo	Ekpe Forest	sacred forest for members of the Ekpe society where they initiate members
Bakut	Ekpe Forest	sacred forest for members of the Ekpe society where they initiate members

3.5 Effects of beliefs and taboos for preserving wildlife

In the system of beliefs and taboos, there are places and case specific aspects that play an important role. For instance, the prohibition of sale of wildlife products discourages hunters from overusing the resource as any economic motivation is missing. In addition, the fact that some wildlife is eaten only by men does not encourage hunters to intensify their search for them. This is in accordance with other authors [9,10], who recognize that, despite non availability of sufficient information to demonstrate the impact of traditional systems or the sustainability of natural resources, one may assume that cultural beliefs (Genie, Juju, Djengi, totem, siren, sanctuaries, taboos, etc.) and traditional practices contributed to the conservation of natural resources, including wildlife.

Important taboos that favour sustainable wildlife management include hunting prohibitions in secrete places such as shrines and ancestral forests, and prohibitions to kill totems and deterring women from hunting. Some authors [11] presented a list of taboos across the globe which are strictly observed by pregnant women, to ensure the health of the unborn child. Also, other authors [12] noted that, this will normally discourage the hunting of such species. However, this is not an assurance for the conservation of the animals concerned as it gives room for commercial hunting of the species. In practice, there is no serious penalty or consequence attached to such hunting or killing. This might negate positive effects of such taboos on the status of the species in the area. The success of traditional systems of resource conservation relies heavily on the presence of a homogenous ethnic or cultural community sharing similar values and experiences. This is usually based on a strong and shared belief in the spiritual world and its pervasive influence on people's lives.

In spite of the fact that the people have beliefs and taboos that conserve wildlife, there are others that are against sustainable wildlife management. For instance some wildlife species like Yellow-backed duiker are used for traditional rites (burial or memorial ceremonies). Other species are used to initiate members into secret societies such as the "Ekpe". As an example, initiation requires 20 limbs of animals and might lead to high pressure on the population of such species. Also, some taboos might encourage wildlife depletion if we take the use of animal to pay fines for violation of rules, regulation and taboos into consideration [13, 14].

Going beyond the traditional mechanisms of wildlife use and protection, our findings revealed that

the introduction of modern techniques of wildlife conservation might lead to new potential conflicts. 20.9 % of our respondents are not willing to implement those techniques while 79.1 % are willing to adapt. As an indicator for the success of modern wildlife conservation methods, all of our participants acknowledged that the park has the highest number of wildlife followed by its surrounding and then the least being in the buffer zone surrounded by the villages.

Despite this positive feed-back, our respondents criticized that the modern wildlife conservation techniques did not take into consideration their beliefs and taboos thus causing frequent confrontations between the villagers and park authorities. The way forward could be that the people's beliefs and taboos that favour sustainable wildlife management should be incorporated into the modern techniques of wildlife conservation so that wildlife conservation would be the joint efforts of the local people, the civil society and the government.

4 Conclusion

Our study analyzed the impact of belief systems and taboos that relate to wildlife products use in the northern periphery of the Korup National Park for four villages that represent typical socio-cultural entities. Our study participants are confronted to a dual system: 1) traditions characterized by beliefs and taboos, and 2) modern insights in what brings environmental management and nature protection forward. We identified as a main problem the reluctance of people to change those beliefs and taboos that are against sustainable wildlife management to those that conserve wildlife based on scientific results.

We conclude that the people's beliefs and taboos that favour sustainable wildlife management should be incorporated into the "modern techniques" of wildlife conservation so that wildlife conservation will become a joint effort of the local people, the civil society and the government. It is obvious that former norms are no more in equilibrium with the prevailing social, cultural, economic, and political context. Of course, the traditional culture alone would not be the solution for solving the wildlife crisis in the of 'modern' approaches which are bound to fail. Wildlife conservation constraints are attributable to many different developments, alongside the application of modern weapons, the increasing trade due to development and the increasing human population in modern times. But people's cultures need to be taken into account in order to respect traditional rights.

Moving forward, institutional support based on democratic values and decentralisation must help to adapt and adjust traditional norms with modern laws through an open and participatory approach. Wildlife will be protected at the higher level (e.g. national and Park levels) and authorities must work together with villagers, administration and government and police, to set up rules and enforce them.

5 Recommendations

- Carry out similar study in the southern part of KNP: Due to the fact that this work could not be conducted in the whole area, the southern part of the park is recommended for the undertaking of a similar study. This is to ensure that our results are put into a larger context for transfer.
- Reinforce the protection of the “Ekpe Forest”: Given that sacred groves are tabooed areas these areas may flourish with wildlife species and thus help to conserve wildlife especially endangered species.
- Introduce integrated forest management laws: The next revision of the forest law should take into consideration local beliefs and taboos that preserve wildlife. This will fill the lapses of the legal frame and ban the negative aspects of the peoples’ beliefs and taboos. Such an integrated approach will better conserve wildlife.
- Harness the tourism potentials of the communities: The government and the ministry of tourism should harness the tourism ecological and cultural potentials of these villages. This should be done mainly through the provision of infrastructure. This will help preserve wildlife as well as improve the livelihood of the people.
- Integrate research results: Given that the villages under study share boundary with the Nigerian Oban Forest with similar beliefs such as Ekpe society, results of research carried out in this Oban area should be combined with that carried in the peripheral villages of the Korup National Park to better conserve wildlife crossing boundaries. Joint research projects should be carried out in this zone.
- Introduction of a wildlife community based conservation initiative in partnership with the Ministry in charge of Forestry and wildlife (MINFOF) with the aim to better enforce the existing laws. This will give the villagers the opportunity to better contribute to the protection of wildlife using the positive aspects of their beliefs that preserve wildlife as well as an

avenue to modify aspects of their beliefs and taboos that are against sustainable wildlife management. We suggest that a wildlife benefiting code of beliefs and taboos be developed to provide a basis for establishing a synergy between park management laws and traditional belief/taboo systems that drive the management of wildlife.

Conflict of interest: The authors declare that they have no competing interests.

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