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**A FIELD REPORT ON VILLAGE SUBSISTENCE
HUNTING IN COMMUNITY HUNTING ZONES WITHIN
THE PERIPHERY OF THE LOBEKE NATIONAL PARK.**

STUDY AREA: *KOUMELA - YENGA DOUCEMENT.*

Reporting period: January – June 2008.



Cephalophus monticola



Atherurus africanus

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INTRODUCTION

Traditional knowledge of relationships between humans and wildlife in Africa are currently being re-examined in the southeast region of Cameroon. These studies are focused primarily on wildlife conservation policies, which are often considered oppressive by local populations. Often time's indigenous and local populations object to harsh enforcement tactics on subsistence hunting activities within forestry concessions and protected areas, whereas scholars object to absence of local participation in conservation and abandonment of traditional hunting practices in favour of more commercially hunting methods.

Within the southeast region of the Republic of Cameroon, bush meat cropping has been identified as a serious problem facing conservation. This is primarily due to the fact that bush meat consumption remains a major source of animal protein and income generation to the impoverished local population.

The Ministry for Forests and Wildlife (MINFOF), in collaboration with the World Wide Fund for Nature (WWF) have implemented certain strategies to deal with this issue such as: anti-poaching patrols around protected areas and logging concessions, education awareness campaigns in human settlements, and fixed control barriers for the prevention of bush meat trafficking. It is now presumed that these strategies may have a limited impact on reducing illegal hunting activities if no alternative sources for animal protein and income generation are identified to meet the needs of the local poor.

When one looks at the zoning map of the region, all potential stakeholders and usage needs are illustrated such as: National Parks (PN), Council Forests (FC), Forestry Management Units (UFA), Community Based Management Zones (ZICGC) and Professional Hunting Zones (ZIC).

Within the Community Based management zones, the local populations have a triple usage rights; Agro forestry, Community Forestry and Traditional wildlife subsistence hunting. It is expected that this subsistence hunting could be limited to animals of the class 'C' species of mammal classification (*See Part III on Wildlife Management, Art. 24 of Law No. 94-1 of 20 January 1994 to lay down forestry, Wildlife and fisheries regulations*).

The goal of this report is to help orientate the debate on subsistence hunting through the use of scientific data and analysis. These data will then contribute to the better development of new projects linking protected area conservation with development initiatives in surrounding communities.

STUDY OBJECTIVE

The main objective of the study was to gauge the populations' comprehension and application of the subsistence hunting approach.

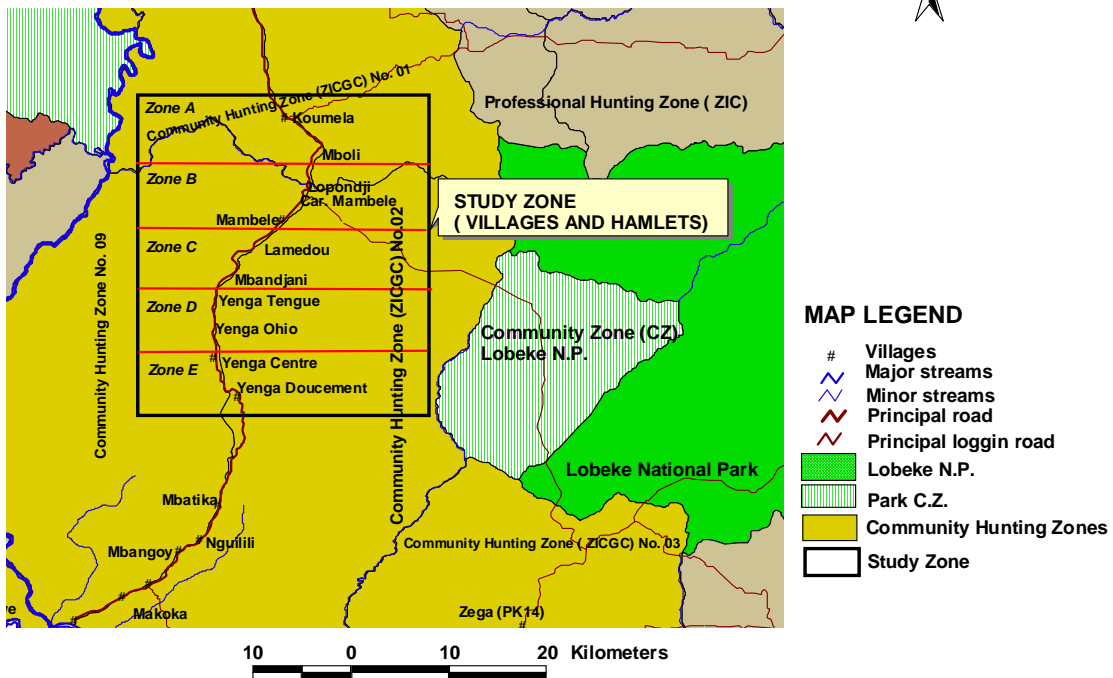
An additional mechanism in place to assess the potential impact of the aforementioned approach taking into consideration the following specific objectives:

- Identify and quantify the different (protection) classes of animals species hunted.
- Evaluate the selling methods, and the degree of hunting pressure per specie.
- Carry out a comparative analyses on time and hunting pressure within the different sectors
- Appreciate characteristics of animals sold including the sex and age.
- Determine the consumption and market proportions of meat hunted.
- Determine the category of hunters exercising this activity in this neighbourhood: Villagers, Strangers and Professional hunters.

STUDY METHODS

The study was limited to villages adjacent to the western borders of the Lobeke national park more precisely along the Yokadouma - Moloundou highway.

SITE VIEW OF STUDY ZONE



An estimated distance of 50km was our focal sector with Koumela village on the North, and Yenga Doucement village at the southern extreme.

This area incorporates two major tribes: Bantus (Bangado and Bakwele) and Indigenous Baka. These historically forest dwelling peoples live together in small villages and hamlets with their main occupations being; agriculture, hunting, fishing and fruits gathering.

The sector was structured into five zones as follows:

- **Zone A** : Koumela centre – Mboli
- **Zone B** : Lopondji – Mambele village
- **Zone C** : Lamedou – Mbandjani
- **Zone D** : Yenga Tengue – Yenga Ohio
- **Zone E** : Yenga Centre – Yenga Doucement.

Each zone ranged between ≥ 5 km. This zonal division was due to the following reasons:

- Village data collectors had no supporting facility for transportation to have access to long distances
- The study zone was made up of many inland hamlets and small villages.

Field data sheets were elaborated and in each sector, a local data collector was identified and trained on how to collect data and complete the data sheets (**Annex 1**). Each field collector received basic remunerations for their work performed.

The WWF field assistant made monthly visits to the collectors in order to appreciate their efforts, and at the end of each month, data collected were sent for computer entering. Finally, it should be noted that regular education and awareness campaigns have been organised to edify the population on the subsistence hunting mechanism. These campaigns have been historically carried out by staff from WWF Jengi Program.

RESULTS

These results represent a six month study (January 2008 – June 2008).

A. Animal hunted per Specie and Protection class:

A total of **32** animal species were reported hunted. See table below.

Table 1: *Hunted Species and Protected class distinctions.**

Scientific names	English names	Class Protection
<i>Aonyx congica</i>	Congo clawless otter	B
<i>Artherurus sp</i>	Porcupine	C
<i>Boocerus euryceros</i>	Bongo	B
<i>Cephalophus callipygus</i>	Peters Duiker	B
<i>Cephalophus dorsalis</i>	Bay Duiker	B
<i>Cephalophus monticola</i>	Blue Duiker	C
<i>Celalophus ogilbyi</i>	Ogilby's Duiker	C
<i>Cephalophus sylvicultor</i>	Yellow back Duiker	A
<i>Cercocebus albigena</i>	Grey-cheeked Mangabey	C
<i>Cercocebus galeritus</i>	Crested Mangabey	A
<i>Cercopithecus cephus</i>	Moustached Monkey	C
<i>Cercopithecus nictitans</i>	Putty nosed Monkey	C
<i>Colobus polykomos guereza</i>	Black and White Colobus	A
<i>Cricetomys emini</i>	Giant Rat	C
<i>Crocodylus cataphractus</i>	Crocodile	A
<i>Dendrohyrax arboreus</i>	Tree Hyrax	C
<i>Felis aurata</i>	Golden Cat	C

<i>Genetta tigrina</i>	Large spotted Genet	C
<i>Gorilla gorilla gorilla</i>	Gorilla	A
<i>Hyemoschus aquaticus</i>	Water Chevrotain	A
<i>Hylochoerus meinertzhageni</i>	Giant Forest Hog	B
<i>Loxondonta africana cyclotis</i>	Elephant	A
<i>Manis gigantea</i>	Giant Pangolin	A
<i>Manis sp</i>	Pangolin	C
<i>Nandinia binotata</i>	Tree Civet	C
<i>Kinixys erosa</i>	Tortoise	B
<i>Perodicticus potto</i>	Bosman's Potto	B
<i>Potamochoerus porcus</i>	Bush Pig	B
<i>Thryonomys sp.</i>	Cane Rat	C
<i>Tragelaphus spekei</i>	Sitatunga	B
<i>Varanus varanus niloticus</i>	Aligator	C
<i>Viverra civetta</i>	Civet	B

*These species are in accordance to the Convention on International Trade in Endangered Species of Fauna and Flora (CITES) classification of animal species and the Cameroonian legislation on Protected species within the South east regions. (*Art.2 (1) and 3(1) of Decision No. 0648/MINFOF of 18th December 2006*)

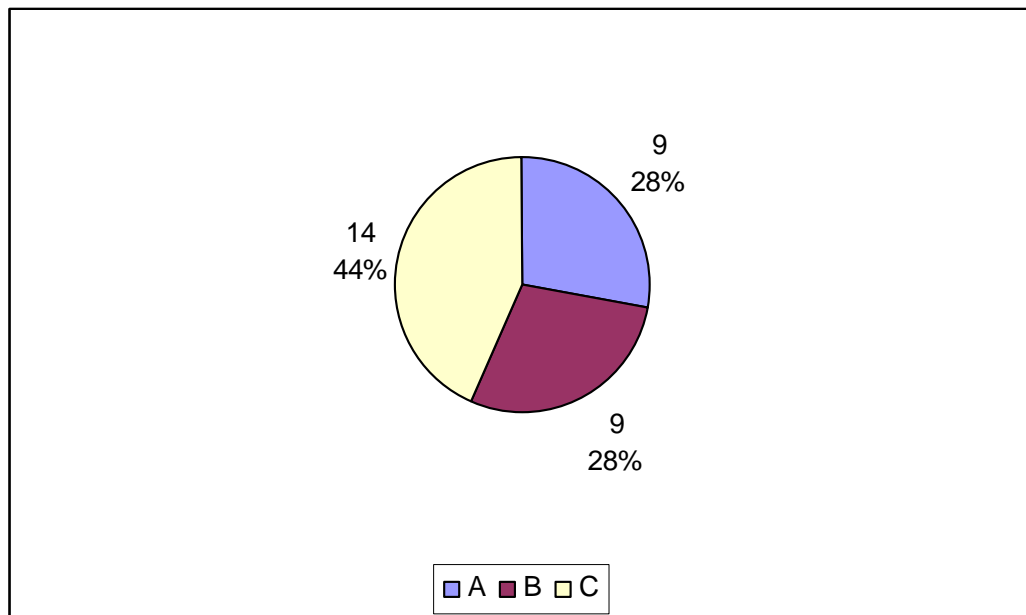


Figure 1: Presentation of hunted species per protected class.

B. Selling methods, State and Hunting pressure per species:

Selling method:

Animal species hunted were classified into four forms: Pieces, Leg, Whole and Side.

- *Pieces*- are in small slices. These slices are sold in these neighbourhoods at approximately 100FCFA/slice. This phenomenon is better known in the locality as “*Anti crise*”. It is aimed to satisfy the need of those who can’t afford to buy large quantities.
- *Leg*- presentation by limbs.
- *Whole* – animals hunted are presented for sale in a whole and not in slices.
- *Side*- The animal is divided into two parts where each side contains front and back limbs.

Table 2: *Sales methods of animals hunted*

LEGS	WHOLES	PIECES	SIDES
78	418	79	83

These results are base on the number of animals hunted and exposed for marketing and not number of slices counted.

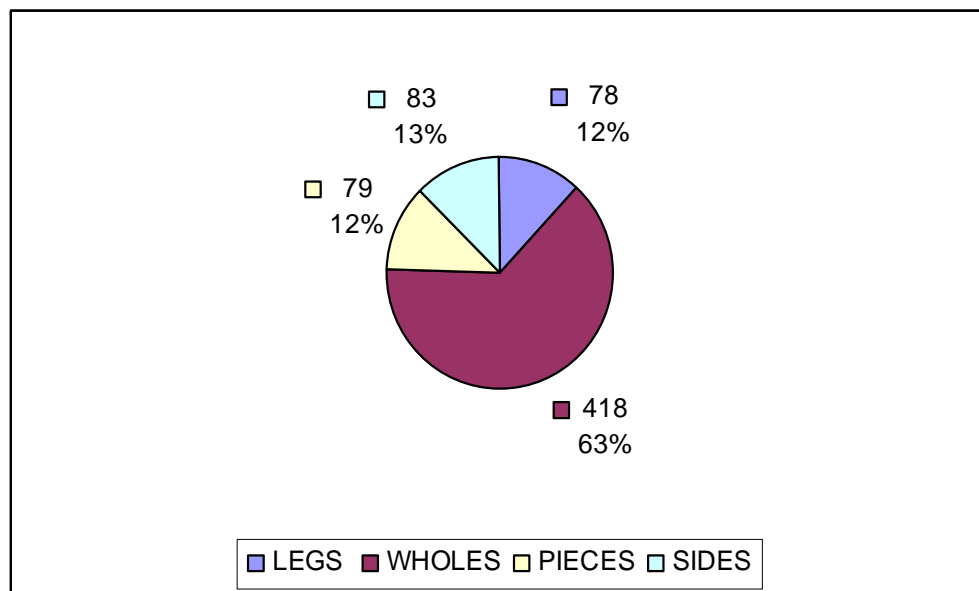


Figure 2: *Quantitative/percentage presentation of sales method.*

State:

Concerning the state at which these hunted animals were presented, three forms were identified: Fresh, Smoked and Alive as presented below.

Table 3: State/Zone presentation of animals hunted.

STATE	Fresh	Smoked	Alive	TOTAL
Zone A	112	34	10	156
Zone B	112	25	9	146
Zone C	92	29	14	135
Zone D	74	34	7	115
Zone E	73	29	4	106
TOTAL	463	151	44	658

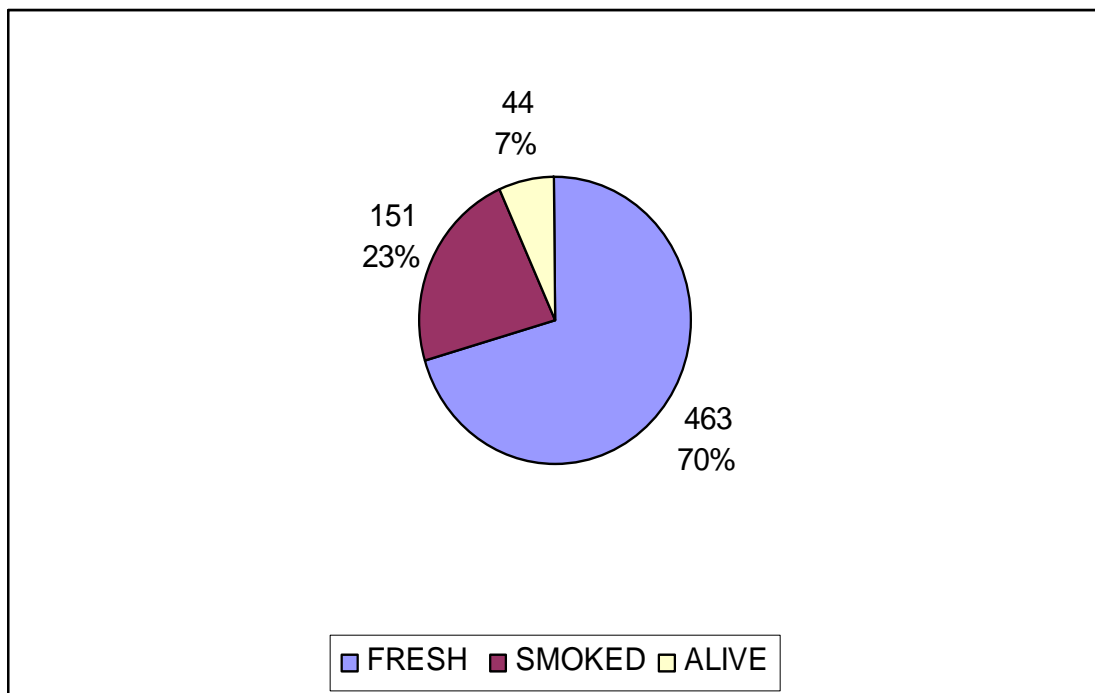


Figure 3: Quantitative / percentage presentations of selling state.

Hunting Pressure:

Hunting pressure per species is a sum of the number of animals' registered cropped reparation per specie.

Table 4: *Quantitative repartition of hunted animals per specie*

Scientific names	English names	Total N0. hunted
<i>Aonyx congica</i>	Congo clawless otter	1
<i>Artherurus sp</i>	Porcupine	71
<i>Boocerus euryceros</i>	Bongo	5
<i>Cephalophus callipygus</i>	Peters Duiker	87
<i>Cephalophus dorsalis</i>	Bay Duiker	69
<i>Cephalophus monticola</i>	Blue Duiker	122
<i>Celalophus ogilbyi</i>	Ogilby's Duiker	3
<i>Cephalophus sylvicultor</i>	Yellow back Duiker	2
<i>Cercocebus albigena</i>	Grey-cheeked Mangabey	5
<i>Cercocebus galeritus</i>	Crested Mangabey	4
<i>Cercopithecus cephus</i>	Moustached Monkey	14
<i>Cercopithecus nictitans</i>	Putty nosed Monkey	37
<i>Colobus polykomos guereza</i>	Black and White Coloubus	5
<i>Cricetomys emini</i>	Giant Rat	13
<i>Crocodilus cataphractus</i>	Crocodile	6
<i>Dendrohyrax arboreus</i>	Tree Hyrax	5
<i>Felis aurata</i>	Golden Cat	2
<i>Genetta tigrina</i>	Large spotted Genet	2
<i>Gorilla gorilla gorilla</i>	Gorilla	6
<i>Hyemoschus aquaticus</i>	Water Chevrotain	14
<i>Hylochoerus meinertzhageni</i>	Giant Forest Hog	1
<i>Loxondonta africana cyclotis</i>	Elephant	7
<i>Manis gigantea</i>	Giant Pangolin	4
<i>Manis sp</i>	Pangolin	61

<i>Nandinia binotata</i>	Tree Civet	5
<i>Kinixys erosa</i>	Tortoise	22
<i>Perodicticus potto</i>	Bosman's Potto	1
<i>Potamochoerus porcus</i>	Bush Pig	25
<i>Thryonomys sp.</i>	Cane Rat	25
<i>Tragelaphus spekei</i>	Sitatunga	23
<i>Varanus varanus niloticus</i>	Aligator	6
<i>Viverra civetta</i>	Civet	5
TOTAL		658

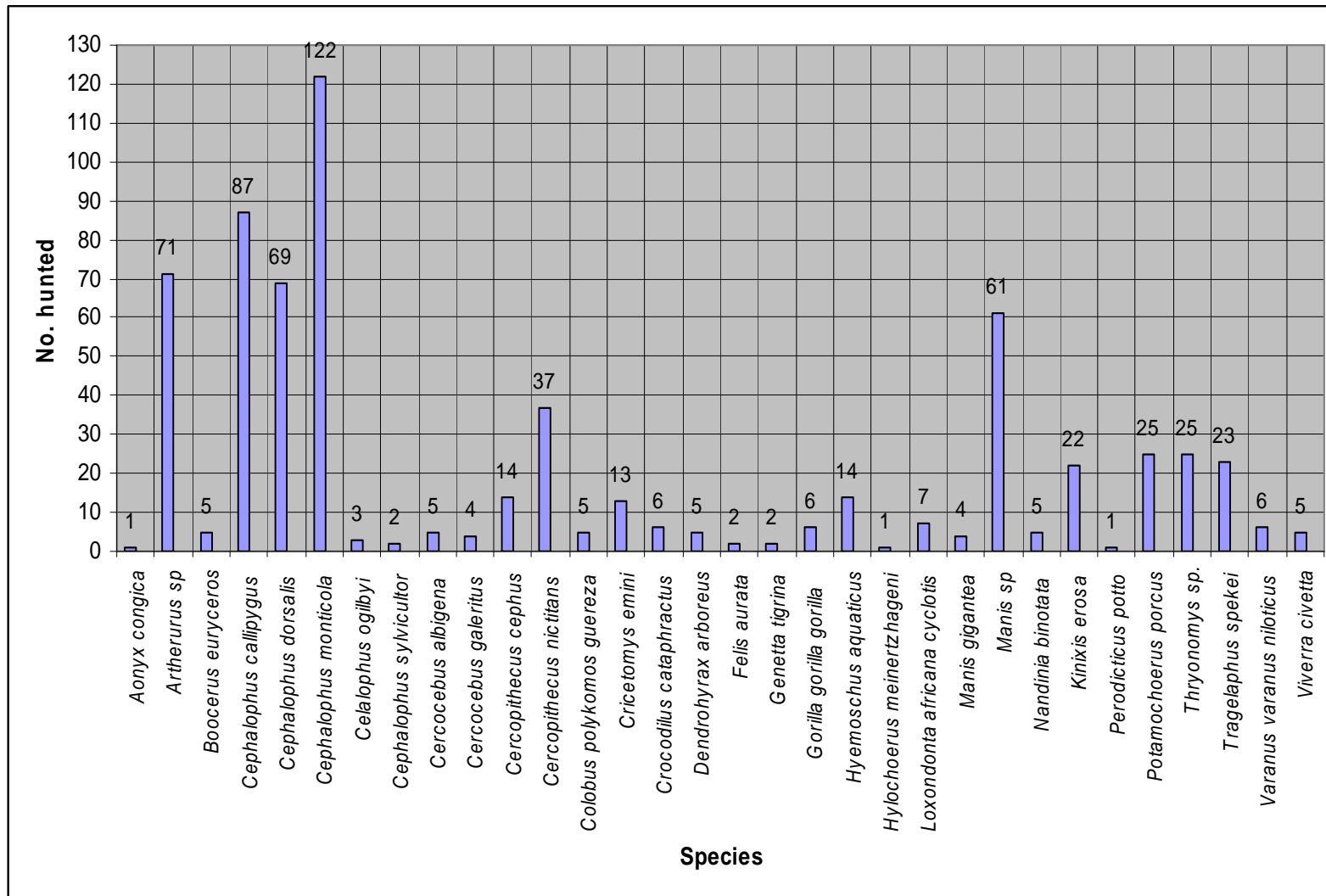


Figure 4: Quantitative presentation of hunted species.

C. Comparative analyses on Time and Hunting pressure in the different zones:

This comparative analysis is to know zones and period of high and low hunting pressure.

Table 5: *Quantitative presentation of hunting pressure, in time and per study sectors*

Time \ ZONES	January	February	March	April	May	June	TOTAL
Zone A	31	36	13	21	28	27	156
Zone B	30	28	22	19	20	27	146
Zone C	16	13	21	29	29	27	135
Zone D	17	8	20	15	16	39	115
Zone E	12	11	10	20	27	26	106
TOTAL	106	96	86	104	120	146	658

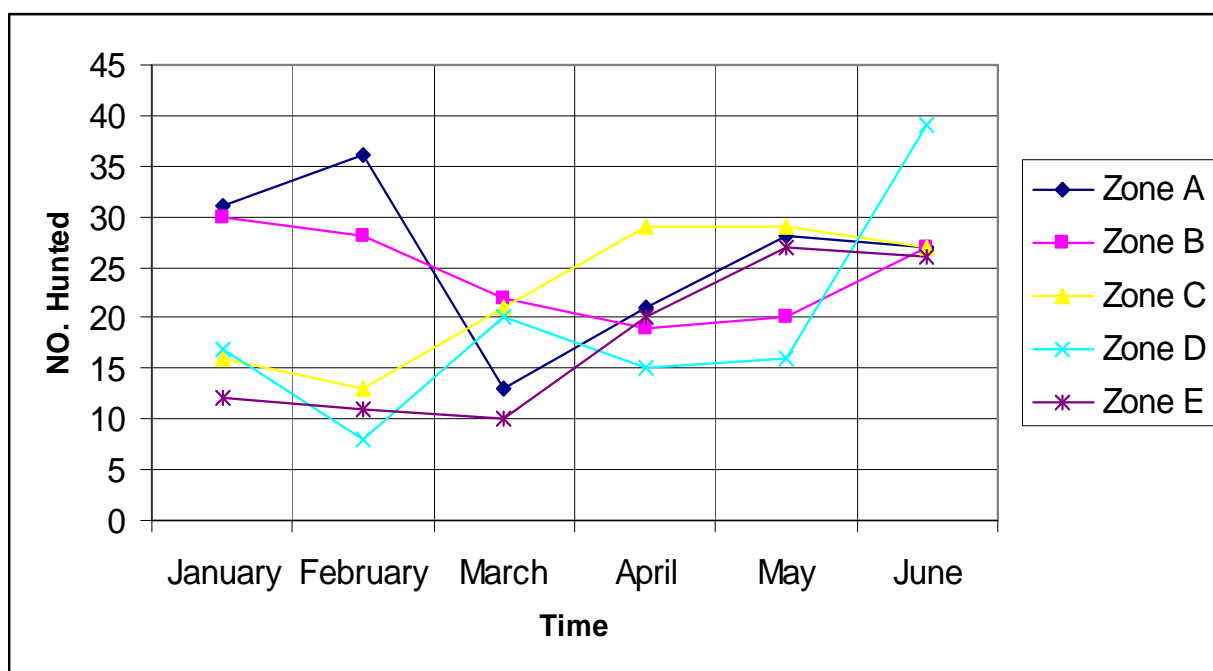


Figure 5: *Evolution of hunting pressure in time and per study zone.*

D. Appreciation by Sex and Age groups of animals hunted:

Sex:

Understanding the sex and age groups of animals cropped from the wild is of importance in the elaboration of conservation and wildlife management policies and strategy.

From data registered the sex parameter was recorded in one of three ways: *Male, Female and Blank*.

Blank are those animals registered without possibility to determine their sexes, for example *Kinixis erosa* , or the case that the meat is classified as slices (smoked or fresh).

Table 6: Sex/Zone appreciation of animals' hunted.

SEX \ ZONES	MALE	FEMALE	BLANK	TOTAL
<i>Zone A</i>	58	44	54	156
<i>Zone B</i>	34	35	77	146
<i>Zone C</i>	40	44	51	135
<i>Zone D</i>	39	43	33	115
<i>Zone E</i>	31	42	33	106
TOTAL	202	208	248	658

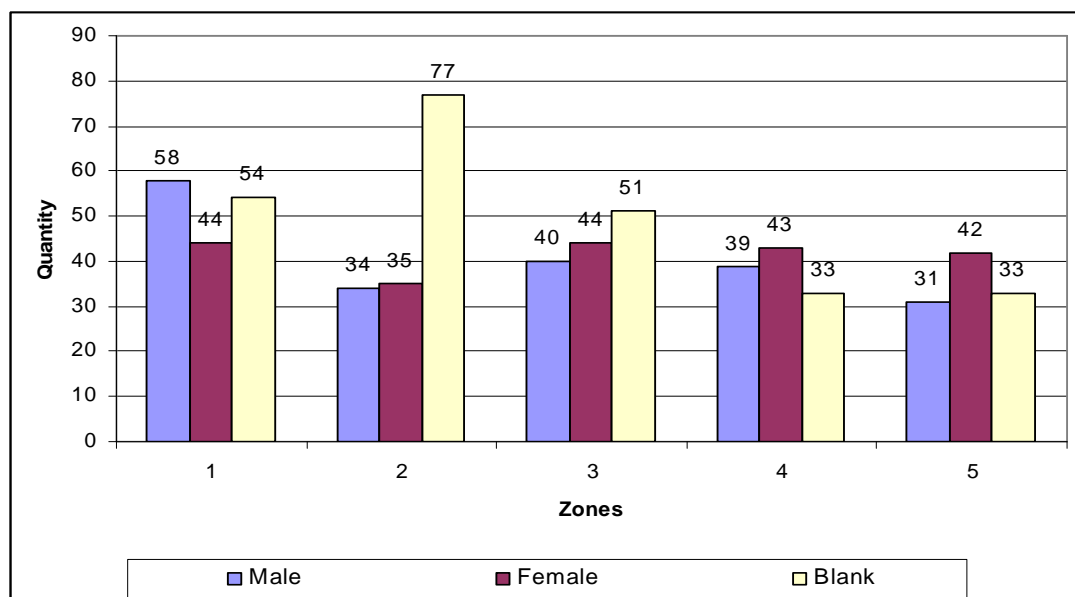


Figure 6: Sex/Zone presentation of hunted animals

Age:

Concerning age groups, four categories were used: Adult, Juvenile, Baby and Blank.

- *Adult* were those animals considered mature and of reproduction aged.
- *Juvenile* are those already weaned from breast milk to sub-adult and not at reproduction aged.
- *Baby* are those considered still breast feeding or otherwise still very young.
- *Blank* are those which weren't possible to determine their age group on the field.

Table 7: Age/Zone appreciation of animals cropped.

ZONES \ AGE	AGE				TOTAL
	ADULT	JUVENILE	BABY	BLANK	
<i>Zone A</i>	110	23	1	22	156
<i>Zone B</i>	59	21		66	146
<i>Zone C</i>	105	13		17	135
<i>Zone D</i>	91	19	1	4	115
<i>Zone E</i>	81	14		11	106
TOTAL	446	90	2	120	658

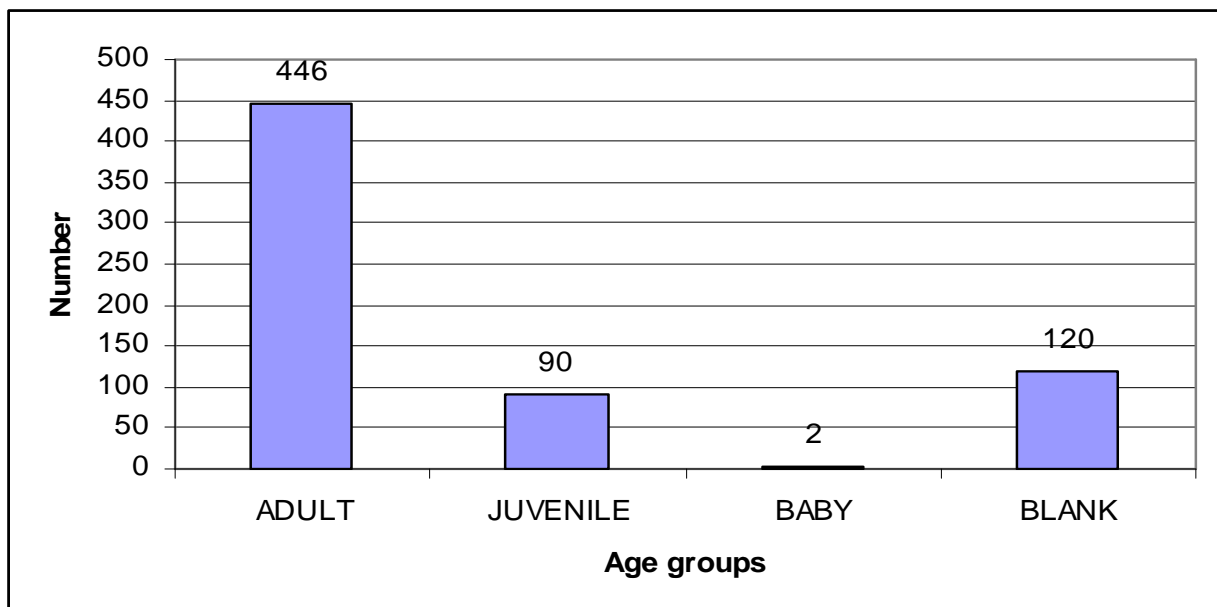


Figure 7: Age group presentation of animals hunted.

E. Consumption and Market proportions:

Another major parameter of the study was to appreciate consumption and market proportion of bush meat hunted. These data provide quantitative information on the use of bush meat as provisions for basic household needs and alternative sources for animal protein.

Table 8: Consumption /Market proportions of animal hunted per zone.

ZONES	Consumption Proportion:	Market Proportion:	Total:
Zone A:	33	123	156
Zone B:	28	118	146
Zone C:	21	114	135
Zone D:	24	91	115
Zone E:	21	85	106
Total:	127	531	658

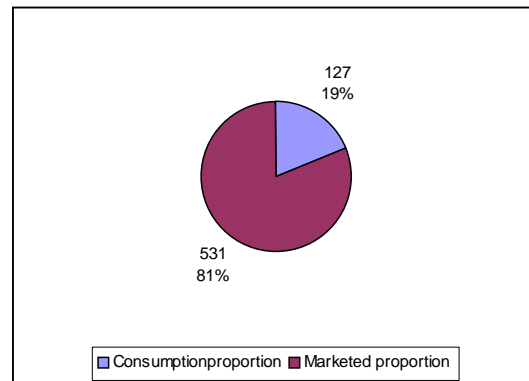
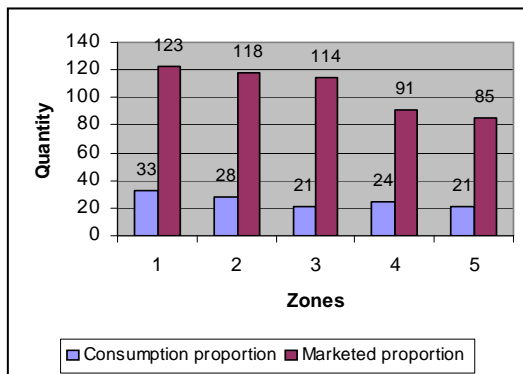


Figure 8: Consumption/Market proportions compared.

F. Category of hunters:

Having knowledge on the type of people hunting in this zone was deemed vital. This would help to evaluate the responsiveness of this approach to the living standard of the autochthones.

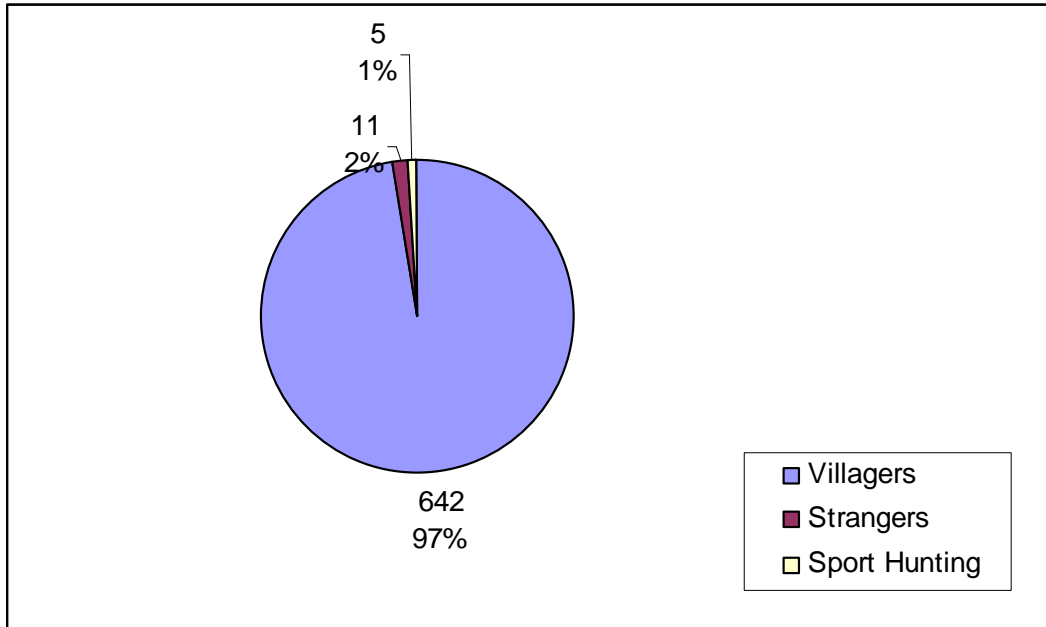


Figure 9: Quantitative/percentage presentation of hunters' category.

DISCUSSIONS AND CONCLUSION

Six months (January –June) studies of village subsistence hunting in communities adjacent the Lobeke national - park (*Koumela village – Yenga - Doucement*) sector, gave a total of **658** bush animals killed. These are grouped in **32** species with all three fauna protected classes defined in the region: A, B and C represented in the following order: Class A: 09 species (28%), Class B: 09 species (28%) and Class C: 14 species (44%).

Considering the total number of animals cropped: 658, this does not reflect field realities in the sense that:

- We considered any animal part e.g.: Slices Legs, Sides or Whole to represent a total animal.
- The local populations here spend most of their time in plantations farms or in the forest for other activities like: fishing, hunting and fruits gathering. In this light, our study was limited only to those animals found hang on road sites for sales.

The *selling method* - slices, legs, sides and whole, depends on:

- Household basic needs,
- The size of the animal and
- The financial strength of the locals.

The *selling state* -smoked, fresh and alive depends on:

- Household needs,
- Animal size,
- The distance from the hunting spot to the selling spot and
- The furiousness of the animal hunted.

From the results we noticed that a greater portion is sold fresh (71%). Species sold alive represents (07%) and are mostly small mammals like: *Manis sp*, *Kinixis erosa* and *Cephalophus monticola*.

Looking at the list of the different species cropped and considering animal class protection within the south - east region of the Republic of Cameroon, many qualms come to mind:

- Are represented, species which could not fall prey if legalised traditional hunting methods were used like: *Boocerus eurycerus*, *Gorilla gorilla gorilla*, *Hylochoerus meinertzhageni*.

- In the same vein, we find species which are very rare in agro - forestry zones like: *Manis gigantea*, *Cephalophus sylvicultor*...

- Still in the list, are found arboreal species such as: *Cercopithecus nictitans*, *Cercopithecus cephus*, *Cercocebus albigenia*, *Cercocebus galeritus* and *Colobus polykomus guereza*. Their cropping is mostly done using hunting guns or poisonous bow and arrows.

From this stand point, we could declare that, subsistence hunting practices here does not take into account in forest distance limitations, respect of authorised traditional hunting materials and fauna class protection.

Another aspect of prime importance was *Hunting Pressure per specie*. This would help to identify species highly cropped and facilitate the making of conservation policies for the zone. From collected results, we noticed that *Cephalophus monticola* is topping the list. This could be due to the availability of these species in the study zone.

A comparative study on Time/ Zone was another aspect of importance. This would help to determine periods and zones of high and low hunting.

From the results, we noticed that intense hunting is carried out in the month of June (**22.19%**) with **Zone A** (*Koumela – Mboli*) as leading. March is the month of less hunting (**13.07%**) with **Zone E** (*Yenga Central – Yenga Doucement*) of less hunting respectively.

Another conservation target was Sex. This would help know which Sex (Male and Female) is highly cropped. From results obtained, we found that both sexes are well represented with the Female having some minor differences. (Female: **208** and Male: **202**) The Blank results: **248** were animals whose sexes couldn't be identified on the field.

The Age of the animals cropped was also one of our focal point. Knowing the ages would help in determining reproduction trends in the wild and could ease the formulation of vital conservation policies for the region.

From our results, **446** (68%) were Adults, **90** (14%) Juvenile, **02** (01%) Babies and **120** (19%) Blank. Here, we noticed that the reproductive age group (Adults) is highly endangered.

Another factor we took into consideration was the *Consumption and Market proportion*. This is important as it would help to know whether subsistence hunting as practice here is for household consumption (animal protein) or a commercial activity.

From field findings, **531** (81%) represent market proportion and **127** (19%) for household consumption.

These results could still be challenged giving the fact that any animal pieces identified were considered a full animal and also the facts that not all identified portions were at the end sold as some could end up being consumed.

Category of hunters was also a criteria used. This was to know those exerting this activity most in this neighbourhood. Considering three categories: Villagers, Strangers and Professional hunters, we noticed that: **642** (97%) of the animal registered were killed by the villagers, **11** (02%) strangers and **05** (01%) by Professional hunters operating in the locality.

From these results, we could presumed that village subsistence hunting practices in communities adjacent the Lobeke national park do not respect certain conservation norms and as such, much field efforts are still needed to put right this strategy.

RECOMMENDATIONS

1. Improve and speed-up the creation of major livelihood activities such as:

(A) *Alternatives for bush meat:*

- Cane Rats and Rabbits farming,
- Poultry farming,
- Improve on local Livestock rearing.
- Develop the fishing sector (Piciculture).

(B) *Improve the Agriculture sector:*

- Initiate a diversify farming system with the introduction of vegetables plants,
- Develop Horticulture

(C) *Initiate a micro financing and saving system in the locality:* This will help edify the population on the importance of money saving for rainy days and resolve future problems.

(D) *Introduce a periodic marketing system:* This would help broaden possibilities for the local population to sale their farm and other products and purchase basic household needs.

(E) *Develop Bee Farming (Apiculture).*

(F) *Improve the health sector.*

(G) *Develop the Non Timber Forest Products (NTFP):*

Within the neighbourhood, there's an abundance of Non Timber Forest Products (NTFP). Collections are done by the entire communities of both sexes. Revenue productions are very encouraging. On the terrain, this activity is not organised. There's high need for intervention in the: identification, collection, conservation and commercialisation of these products to combat poverty alleviation and improve the living standard of the local population.

2. Strengthen support on Environmental Education in schools within the locality.

Donation of didactic materials like; Wildlife poster, Maps of protected areas, Books, Projection of awareness raising films and quiz on sustainable natural resources management.

3. Intensify and review sensitisation campaigns and strategies.

Awareness raising campaign strategies should be review and intensify to meet field realities and objectives. These should ensure the full involvement of all stakeholders and local decision makers. In forest missions findings should be address to the local populations in awareness campaigns.

4. Intensify forest reconnaissance and surveillance missions into protected areas.

Conservation soldiers should intensify their activities into community hunting zones. This would help check out illegal hunting materials and poaching in the locality.

Success to these could be achieved if all stakeholders and technical State and Private Sectors, Resource persons in the different domains like; Agriculture, Animal Husbandry, Finance... are implicated.

5. These studies should be redone for at least a year, on a larger sector (*Koumela – Ngwilili*) for more concrete data to improved conservation strategies in the region.

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