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**WILDLIFE MANAGEMENT:  
NEW COMMONS AS AN ALTERNATIVE  
TO PROTECTED AREAS ?  
THE CASE OF THE EASTERN CAMEROON FOREST**

## **INTRODUCTION**

Many protected areas have been created all over the world with the aim to isolate, as far as possible, ecosystems that were considered as unique, or as threatened, and therefore in need of being protected against human aggression. Experience has shown that this type of procedure is far from perfect. One problem is that the mobility of many species makes it impossible to completely isolate them. Other problems arise from the increasingly serious conflicts with neighboring populations which have lost access to resources that they traditionally exploited. These conflicts usually lead to situations of free access, unless prohibitively expensive verification programs are set up (Weber, 1995). These failures have led to a certain change of awareness, and a process of "softening" of conservation policies has begun: the idea is that local populations participate in the management of protected areas (Wells & Brandon, 1992).

At the same time, there are many successful cases of conservation of renewable resources by the communities who manage them in common (Berkes & al, 1989). These examples lead to interrogation as to the pertinence of a new approach to wildlife in situations where it is exploited by local populations. Wouldn't it be possible to set up new commons as an alternative to protected areas? A situation in a rural environment, i.e. without any hunting limits, may give some answers to this question, a research study for a doctorate thesis in Social Sciences has just begun in Eastern Cameroon.

After describing the area of study and the populations concerned, we will discuss access to hunting space and wildlife that we were able to observe. And finally, we will examine the functionality of these rules in order to contribute a few elements of analysis of the pertinence of new commons as a basis for sustainable wildlife management.

## **I - DESCRIPTION OF THE AREA OF STUDY**

### **1) Local environment**

The study is being carried out in the forest zone of the Eastern Province of Cameroon, the vegetation is semi-deciduous, with many marshy areas. The climate is of the Guinean type, with two rainy seasons: a major rainy season from September to November and a minor rainy season from April to May, separated by two dry seasons, from December to February and in July-August. There is large scale logging in the region, but vast areas in the south of the Province remain unexploited. The forest is characterized by a great biodiversity and thus supports a great variety of resources. Nevertheless, local populations speak of a noticeable reduction of wildlife.

Population density is very low, with less than 10 inhabitants/km<sup>2</sup> for the entire Province. Most of the population is concentrated around the main routes and trails and is made up of four major linguistic groups: Baka (Pygmy), Bantou (including the Mezime), the Semi-Bantou (including the Kako), and the Sudanese (mainly the Baya) (Sieffert & Truong, 1992).

### **2) Villages studied**

The research that we have begun is concentrated on two main villages, Goute and Djemiong, which are neighbors.

Goute is a Boti village of the Baya sub-group. The Boli ethnic group is spread out among six villages to the north of the Doume River. They are far less numerous than their neighbors, the Kako and the Mezime. Originally, a group from Central Africa migrated to this zone, later breaking up into several villages after quarrels between families; Goute was founded after the arrival of the French. The village contains one hundred people of the same family, i.e. descended from a single known ancestor, therefore it presents an image of strong social cohesion.

Djemiong is a Mezime village located few kilometers south of the Doume in a large zone dominated by this ethnic group. The village is made up of two families descended from the two wives of the village founder, relations between these two families is very tense and the village seems to be cut in two, socially as well as geographically. The presence of many Baka camps in the Mezime zone permits economic exchanges between the two ethnic groups, especially in the areas of agriculture and hunting.

The activities of the local populations are agriculture, hunting, gathering and fishing. The Boli and the Mezime are above all farmers, the main products cultivated are manioc, plantain, peanuts and corn, and the majority of the men own fields of coffee and cocoa.

The next most important activity is hunting, practiced mainly by the men. The principal capture mode is trapping. The hunting season extends from mid-May, when the traps are set in the forest, to late November, when the traps are removed. "Fox hunt-style" hunting is also practiced. The principal weapons used are spears and assegais for adults and slings for children; a few rifles, mostly artisanal, circulate in the villages. Another technique is the so-called "flood" hunting, practiced by the inhabitants of Goute during the flood of the Doume, when little islets of earth imprison animals. It should be noted that hunting activities are adapted to the agricultural calendar. Since the major dry season is devoted to clearing and to sowing, little time is left for hunting and animal capture is made more difficult by the dryness of the forest. The rainy season is an agricultural "rest" period, and therefore favorable to cynegetic activities. Finally, gathering and fishing are practiced by all the villagers.

Boli and Mezime life styles are quite similar, but they are very different ethnically. They do not belong to the same linguistic group and have their own customs and beliefs. Despite their neighborly relations, the two villages remain relatively independent of one another. A point of difference is that while Goute is an enclave located on a little trail that the inhabitants maintain themselves, Djemiong is on a fairly well-travelled forest route. Also various comparisons can be made.

## **II - ACCESS TO HUNTING SPACE AND WILDLIFE**

The study now underway has investigated whether there are local customary rules of access to hunting space and wildlife concerning neighboring villages and outsiders, and individuals in the same village. Here are some elements we have been able to observe during our first stay in the village.

### **1) Modes concerning individuals from outside the village**

Before the Germans came, the populations moved around, changing zones as they searched for new hunting territory. For this reason, villages only lasted a few years. The ethnic groups were often at war and sought to capture prisoners who were generally integrated into the families. These wars led to practices of ritual anthropophagy.

With colonization, populations were first obliged to become sedentary, settling along the trails. Later, neighborly relations were established, since the colonial authority forbade war, the exchange of women between Boli and Mezime became quite common. Apparently, since the wars have ended, the geographical divisions between ethnic groups and villages have not changed, the main difference is that now people can travel from one zone or village to another.

At present, relatively clear boundaries exist and each village has appropriated a territory designated respectively as "Goute forest" and "Djemiong forest". Between the villages, a common zone can be observed where inhabitants of each village can enter to hunt or gather, hunters from Goute and Djemiong often meet in this zone, but their activities seem to remain separate. According to the work of the API project<sup>1</sup> (personal communication) there is also an exclusive zone around each village for farming, hunting, gathering and fishing. As a rule, inhabitants of other villages are not authorized to practice any activity in this part of the territory, except perhaps in case of special relationships<sup>2</sup>. Nevertheless, unless relations are very tense, an armed hunter from another village may pursue his quarry into this zone, but he will not be allowed to set traps. Finally, outsiders normally have no access to any of their territories except with special authorization.

### **2) Modes concerning individuals in the village**

#### **a) Physical description of the hunting space**

The hunting space around the villages is divided into several areas which are clearly identified and appropriated by the inhabitants. Each village has a certain number of sites and each hunter

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<sup>1</sup> The API Project (Amenagement Pilote Integre) is a forest organization project located in the forest area of Eastern Cameroon. The project includes a "forest-populations interaction" section in which a map of the territory of Bimba, a village near Goute, has been drawn up.

<sup>2</sup> We observed a youth of Djemiong who sets traps around fields cultivated by his parents-in-law's, who are Boli from the village of Bimba.

in the village has several preferred sites. Most of the sites are designated by the name of a stream/river or a marsh nearby. As for the common zone for Goute and Djemiong, each village designates its sites; we have not yet been able to determine whether these sites, which do not have the same name, are in fact identical.

These hunting sites vary according to locality, length of hunting season, number of people participating in the hunt, type of game sought, preferred method of capture, and period of the year. We were able to distinguish camping sites, sites near fields, diverse sites where rifles are used and, in the case of Goute, a site for collective hunting on islets in the Doume. The table below shows a typology of Goute hunting sites as identified on the basis of interviews with hunters.

	1st type: camps	2nd type: fields	3rd type: hunt with rifle	4th type: islets of the Doume
locality	South of the Doume	North of the Doume, around and behind fields	usually North of the Doume	Doume flood zone
length of hunting	several days	1 to 2 hours, after work in the fields	1 day or 1 night	1 day for each of the three islets
number of hunters	groups of 1 to 6, sometimes with wives who gather	1 man alone, often with his wife	only individual	all men present in the village
type of game	all	predators (rodents, birds, monkeys)	mainly monkeys	all imprisoned by the water
mode of capture	mainly traps	traps for each type of game sought	rifle	spear, assegai, or hands
period of the year	rainy season	according to agricultural calendar	all year	once a year

The sites of each village remain unchanged from one year to the next, however, over a long period there have been cases of abandoned sites or identification of new sites previously unexploited. Another aspect is the fact that there is a rotation. Every year each hunter goes to certain sites, maintains these sites during the entire hunting period, and changes sites the following year. In Goute the sites are identified by the "Forest Chief", an old man recognized by the community for the eminence of his knowledge of the forest.

#### b) Description of hunting groups

Group hunting is a very important aspect of social relations between members of the community. The group is important at two times: when the camp sites are set up, and during the flood hunting in Goute. A very small number of men hunt alone, or only with their wives, and certain men never camp.

At each site there are several camps made up of two to six hunters, and possibly the wives during abundant gathering periods. Throughout the hunting season the hunters generally go to the camp site every 5 days and remain 3 to 4 days. The camp is built and appropriated in common by the group, but the traps are individual. Each hunter has his own personal path where he sets his traps. Access is strongly linked to this mode of capture: a hunter cannot set his traps on another's path, but he can pursue an animal there and kill it with his weapon. As on the hunting sites, there is a total or partial rotation of groups of hunters from one year to another. We do not yet know the modes defining the formation of these groups, it can be noted

that the members of a camp are always either members of the same family<sup>3</sup>, from the same village if not from the same family, and of the same ethnic group if they are neither of the same family nor of the same village (in the last case they are called " comrades " or " friends ") Up until now, we have been unable to observe any camp with members of different ethnic groups, except when they were from the same village (the case of a Kako who lives in Djemiong)

The case of flood hunting (" Ndong Mbeng ") is the only type<sup>4</sup> of hunting in which the entire community participates It is practiced at Goute, a village which lives in symbiosis with water because of its locality<sup>5</sup> This hunt takes place only once a year for a period of three days, when the flood waters of the Doume are at their highest point The " Forest Chief " once again plays an important role in the community, because it is his responsibility to decide when to call the men for this hunt When the call comes, all the men of the village gather on the banks, dive into the water and swim to the islets where the game is imprisoned

Since our work in the villages of the zone has begun, we have been able to start observing institutional aspects of hunting, through study both of the organization of hunting space and of the composition of hunting groups

### **III - COMMON PROPERTY AND FUNCTIONAL PRACTICALITY OF RULES**

In the entire zone under study, local populations speak of a noticeable wildlife decrease over several decades This hypothesis remains to be proven, but it already leads us to question the functionality of local institutions in sustainable management of their resources

First we will ask if the institutions we have observed really represent a common property system Then we will introduce the notion of complexity in order to discuss the possible functionality of such a system.

#### **1) The question of common property**

The definition that Stevenson gives of common property (1991, p 46) is the following:

Common property is a form of resource management in which a well-delineated group of competing users participates in extraction or use of a jointly held, fugitive resource according to explicit or implicit understood rules about who may take how much of the resource

The case we have studied corresponds in more than one way to this definition For example, the area where game is taken, which we call "hunting space", has precisely defined boundaries from both a geographical and social point of view We have also been able to observe two types of groups dealing with this wildlife . the group of hunters who have the right to extract and the group who are excluded from this activity These groups apparently vary according to the territory and the sites of hunting. The hunters have a shared and non-exclusive right on the wildlife and are in competition for extracting game, i e they exercise a negative externality on each other

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<sup>3</sup> We have noticed that the children always camp with their father The youngest are observers, the older ones possess their own traps There are also hunting groups made up only of a father and his sons

<sup>4</sup> The Mezime of Djemiong used to hunt with nets, which also involved all the hunters, but this type of hunting was abandoned long ago

<sup>5</sup> We are also investigating whether other villages on the Doume practice this activity

Concerning the access rules, however, things are less clear although we have been able to observe certain aspects, we cannot at present state that in the societies studied there is a complete system of rights and obligations in extracting game and an effective control of access to the hunting space. Therefore we must deepen the analysis of both the description of the hunting space and of the composition of hunting groups. The axes of research open to us are the following:

In description of hunting space, we have carried out a study of characterization of the sites, the next step will be to identify them more precisely so as to draw up hunting territory maps. The diverse sites should be distinguished, as well as camps and paths for the current year and past years. In this way we can analyze the factors of localization of hunters and/or groups of hunters with an effort to distinguish between individual and collective choices in site allotment. Concerning individual choices, we will particularly examine the relation between agricultural and hunting spaces, since these two activities are strongly correlated. The link is particularly strong for the hunters who favor farming over hunting as a source of revenue, this is because they tend to remain close to their fields. As for the collective choices, the reasoning in terms of links of kinship, and particularly matrimonial links between villages, seems to be an interesting research path. The "Forest Chief" also plays a key role. Moreover, we will examine the possible significance of site abandon by communities and of hunters' site rotation - could this rotation represent an adaptation to sedentary life?

As for the groups, the goal is to analyze their composition within the camps for the current year and past years: the number of people and the status of each person, links of kinship, and group rotation will once again appear as important elements of the study. Collective hunting will also be apprehended under the angle of relations between different members of the community. The diverse hunting rites will also be examined. Furthermore, we will study the modes of resource use through game sharing, which follows very strict rules within the family, group of hunters and/or villagers, and forbidden foods, which are related to a large number of animals (Koch, 1968).

## **2) The question of functionality: common property and complexity**

The situation of access to hunting space and wildlife observable today is the result of multiple interactions between the internal dynamics of the societies concerned and diverse outside elements which have gradually appeared in this zone. We are going to present all of these external elements, noting for each the impact that they have had or could have on local institutions.

### a) Colonization and evangelization

We have already evoked the arrival of the Europeans, which was a decisive phenomenon. The watchword of their civilizing action was to put an end to the « slavery » and wars practiced by local populations. The colonial authorities set up a network of surveillance to oblige the villages to settle along the trails and cease all warlike activities. With the arrival of the missionaries in the 1930s the process of evangelization of the populations began, with an emphasis on the « moral prohibition of cannibalism ».

These two phenomena marked the end of a certain type of social relation between villages and between ethnic groups. The territorial boundaries had already been fixed for about twenty years prior to the end of combat (E. Copet-Rougier, personal communication). As the populations became sedentary and new possibilities of hunting and gathering appeared, new modes of appropriation and access had to be set up.

#### b) Monetization of local economies

A second evolutionary phenomenon was the monetization of local economies. The French, successors to the Germans in Cameroon, forced the introduction of "intensive" agricultural production, especially of coffee and cocoa in the 1920s, and peanuts in the 1940s. Consequently, the local populations passed from an economy based on self-subsistence and exchange to a monetary economy based primarily on cultivation for export. The fall of coffee/cocoa prices is often cited as the cause for the intensification of cynegetic activities.

#### c) Opening of routes

As the cultivation of new products got under way, opening and maintenance of trails, first by the Germans, then by the French, and finally by the loggers, facilitated the flow of products towards cities and the arrival of merchants and shopkeepers. Therefore monetization led to a rapid expansion of commerce, at present, merchants, a majority of which are women known as "bayem salem" ("buy them, sell them"), come to the villages to buy diverse products and then sell them on the markets. In our zone, the routes also have created possibilities of sale to passing vehicles: the products are displayed along the trails. Djemiong is particularly involved in this<sup>6</sup>.

#### d) Logging

Logging began in the 1940s and rapidly expanded from the 1950s on. At the present time five of the largest companies of the region share nearly all the territory in our zone. Logging has had several different forms of impact. First of all, it brought in many workers, with their families, from the outside. They represent a new market for local hunters on one hand, and on the other hand, they themselves actively hunt. At the same time, the opening of routes has enabled the hunters to adventure farther and farther into the forest, while facilitating the sale of game.

#### e) New technologies

All these phenomena were accompanied by the arrival of new technologies. First came the rifle, at the beginning of the century, then metal wire used in traps, in the 1940s. These technologies considerably increased the probability of game capture<sup>7</sup>. We have also noted that use of the rifle changed hunting territories: hunters who set traps camp on a single annual site, whereas hunters using rifles practice multi-site hunting. And finally, the use of wire has led to the disappearance of most of the types of traps that previously existed, they are now considered too difficult or time-consuming to make<sup>8</sup>.

#### f) National regulation and laws

Finally, the institutional environment outside local societies can have a considerable impact on common property systems. Although regulations on hunting and game commercialization is not at all applied in this zone, more general legislation can have some influence on local practices. Ostrom (1990, p 101) shows that one of the conditions of functionality of these systems is their recognition by government authorities, furthermore, when the societies concerned do not have the autonomy to change their structures as they wish, or when they are confronted with negative incitements due to national economic policies, they have little chance

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<sup>6</sup> The influence of commercialization on hunting territories has been analyzed by several authors, including Speck & Eiseley (1939) and Harper-Fender (1981) for the North American Amerindians. Ayres et al (1991) have studied the impact of opening a road on hunting in an Amazonian village in Brazil.

<sup>7</sup> For the efficiency of the rifle, see Hames (1979), who compared the rifle and the bow among the Amerindians of Venezuela.

<sup>8</sup> According to the villagers, certain types of traps, such as the suspended lance, are considered too dangerous, since logging has brought uninformed strangers into the forest.

of maintaining their structures. Thus the hunters of the zone we study complain that they are powerless when confronted with the arrival of strangers in their hunting zones, because Cameroon citizens can settle anywhere they want in the country.

During the course of history local populations have seen many external factors appear: sedentary life and the end of war with the arrival of European settlers and missionaries in the zone, monetarization of local economies, the possibilities of commercialization, the opening of trails, large-scale logging, new hunting technologies, and regulations which do not correspond to local expectations. We have to make a deeper analysis of the effects of these external factors from two points of view: their effect on the societies concerned, and their effect on the natural and socio-economic environment of these societies.

## CONCLUSION

The field study that we have undertaken in the forested zone of Cameroon has been focused on the analysis of modes of access of two ethnic groups to hunting space and wildlife. We have been able to observe that the hunting space is made up of several sites on which diverse groups of hunters move about. The hypothesis according to which wildlife is decreasing in this zone leads to a discussion of the observed system: is it a common property regime? and what are the different external phenomena which can interfere with local institutions?

Thus we can discuss the pertinence of new commons as the basis of sustainable wildlife management. Our goal is to determine whether the local systems of hunting "management" have, or had, a capacity to manage their resources. A positive answer to this question would show that protected areas are not the only way of conserving species, and would open the possibility that institutions based on local customary rules can be the basis of sustainable wildlife management.

The next step would be to analyze the modes and cost of instituting such a policy from a socio-economical and environmental point of view. The socio-economic aspects would, in particular, consist of precise identification of who possesses and uses the resource and who is excluded, the management structure, how access is controlled and possible penalties for offenders. At the same time, the notion of system "sustainability" implies ecological factors: knowledge of the diverse species present in the ecosystem is necessary in order to manage it. At the present time, there are several methods of measuring hunting sustainability in tropical forests, but these methods remain partial (Robinson & Redford, 1994). The study of the ecological impact of hunting is full of uncertainties. This is all the more true since there is a strong interdependence of ecological phenomena, pointing to the need for an apprehension of the totality of biodiversity.

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