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<p style="text-align: center;"><b>LOCAL MANAGEMENT OF WILDLIFE IN AFRICA: IS IT FEASIBLE?</b> <b>A discussion based on the study of village hunting in East-Cameroon</b> <b>(DRAFT)</b></p>
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Stream: Wildlife

Discipline: Social Sciences, Economics

Since the beginning of this century, wildlife has been decreasing in many african countries, due to habitat destruction and over-hunting. In response to this situation and as ecological movements were developing in the western world, many protected areas have been created all over the continent, in order to isolate as far as possible endangered or unique species, and to avoid all human impacts. Thus, for a long time, management has meant « preservation », i.e. maintaining wildlife stocks according to carrying capacity of closed areas. It has rapidly appeared that this kind of policy failed to actually stop wildlife decrease, unless authorities had large financial and coercive means. Protected areas have been constantly facing social and economic difficulties due to local populations who lost access to resources they always had exploited. After many decades of conflicts, a process of « softening » these policies has begun in the 80's, with projects that aim at integrating local populations to management processes (Kiss, 1990). Then preservation has been replaced by « conservation », which in theory means sustainable use for current human benefit without compromising future generations' needs (CMED, 1989), but in practice has often been translated in nothing more than « participation » to externally decided programs. This second stage in african wildlife management has rarely been successful, especially because participation has not been enough to impulse local populations' support for conservation or to incite them to adopt sustainable behaviours (IIED, 1994). Faced to these failures, and in the same time to many cases of successful common property management systems (Berkes & al., 1989), a third approach is now appearing : local management of wildlife, that is a management of *practices* and not only *ressources*, and also a management that is actually decided, conceived and done *by*, and not only *with*, local people.

In order to discuss feasibility of such a management, it is important to focus on local hunting systems, in settings where hunting is not forbidden and where people can organize themselves in total freedom. Thus, within the context of a Ph.D in social sciences, we made a field study in East-Cameroon and we use the results of this study to discuss feasibility and modes of local wildlife management in Africa. We present in this draft some elements of discussion that are being developed more largely in the final communication and in the Ph.D thesis.

## I - A study of village hunting in East-Cameroon

We carried out a field study in East-Cameroon, in a zone where there are neither protected area nor participatory wildlife management project ; as in most african countries, wildlife belongs to the State, but so called « traditionnal » hunting is allowed and, in this isolated region, public regulation is quite absent. The field work consisted in analysing local hunting practices and identifying « customary » elements of management.

The field work was carried out in the forested zone<sup>1</sup> of the East Cameroon. The population density is very low, less than 5 inhabitants/km<sup>2</sup>, and small villages are sparcely dissaminated along roads. The region is an enclave and road system is still undeveloped ; although small in number, these roads have a significant impact on certain villages, by breaking their isolation. The forest is characterized by a large biological diversity and is rich in resources for local populations (food, medicine, construction materials, etc.). Local populations speak of a decrease in wildlife since the 1970s, as a consequence of logging, which has existed in the region for over forty years<sup>2</sup>, and a relative development of game commercialization.

The analysis is concentrated on two neighbouring villages, Goute (about 150 inhabitants) and Djemiong (around 250 inhabitants), which have been chosen for their differences. First, they represent two ethnic groups, the Boli (a Baya sub-group) at Goute and the Mezime (Bantu) at Djemiong ; however relatively similar hunting practices and organization have been observed in the two villages. Second, Goute is an actual enclave, whereas Djemiong is situated at the intersection of two logging roads.

The life styles in the two villages are relatively similar : they are sedentary societies that practice above all slash-and-burn agriculture, and also hunt, gather and fish. Hunting is a secondary activity compared to agriculture, but represents for local populations a major source of protein, sometimes revenue, and plays a dramatic sociocultural role ; every men hunt, beginning their apprenticeship at around the age of ten.

The hunting season roughly coincides with the rainy seasons, between June and November. The hunt is mainly done with traps and the most common type of capture is the snare with a metal wire ; a few rifles circulate in the villages but their use remains very marginal. Hunting is practised near the village, in the forest and around the fields, and also in remote areas, involving camping during several days. In the forest, traps form « tracks » that are individually appropriated ; in agricultural areas, traps are dissaminated in and around fields and fallows. Hunting is often a group activity : in each camp there are two to six hunters, and the shorter hunts are often practiced by two people. A great majority of harvests concern small-sized animals and is concentrated on antilops and rodents<sup>3</sup> ; most of the traps are designed for them and, in any case, the largest game, such as the elephant, has disappeared in this area.

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<sup>1</sup> It is a dense semi-deciduous forest. The climate is the Guinean type, with a long rainy season from September to November, a short rainy season from April to May and two dry seasons, December to February and July to August.

<sup>2</sup> In the area we studied, two companies have logged through selective harvesting over the last twenty years.

<sup>3</sup> Out of around fifty species captured, the Blue duiker (*Cephalopus monticola*), the African brush-tailed porcupine (*Atherurus africanus*) and the Giant rat (*Cricetomys sp.*) represent 50% of the total catch.

We have made quantitative and qualitative socio-economic studies. The quantitative research consisted of hunters' game harvest counts and their outcome (home consumption, gift, sale) and of a budget study covering household income and spending. These two surveys were made over an entire year (July 1, 1995 to June 30, 1996). Practically all hunters (44 at Goute and 69 at Djemiong, including children) and all households were followed (20 at Goute and 27 at Djemiong). A large number of interviews were made for the qualitative research. The questions had to do with the temporal and spatial organization of hunting activities (hunting territories, modes of access to space and to wildlife, etc.), the history of the region (colonization, logging, road opening, etc.) and the evolution of local activities (hunting and gathering, food and cash crops, etc.).

## **II - « Managing » wildlife in villages : food, kinship and interactions between activities**

The field work tried to focus on the underlying logic of villagers' hunting practices ; especially we tried to understand what « management » meant for local populations and what were the objectives of their practices. We can identify three major aspects of management, that seem to underlie the organization and regulation of hunting in villages : food security, kinship and interactions between activities.

### ***II.1. Kinship, the village forest and access to hunting***

Each village appropriates an activity area, called the « village forest » : the villagers speak of the « Goute forest » and the « Djemiong forest ». The village forest includes the village, the agricultural areas (cultivated fields and fallows) and the forest itself<sup>8</sup>. In the area studied, an empty, « no man's land » type, zone does not exist and the entire space is appropriated by villages. The limits of the village forest depend on the space covered by the villagers' activities and are mostly situated on rivers ; however, as we shall discuss further, the idea of an actual « limit » goes too far. Thus, all village forests are neighbouring and there often exist common areas of activities, especially between Goute and Djemiong. As hunting can be done on all types of spaces, the entire village forest represents the space of game harvesting.

The composition of the villages is based on kinship : each village is constituted of one or more patrilineages<sup>4</sup>. Thus, access to the village forest is also largely defined by kinship rules. The right to do any activity in the village forest depends on the belonging to the founder patrilineages and to marriage or friendship links with members of these patrilineages. So, hunters not from the village are excluded from game harvesting and occasional hunters from the outside can be welcomed if they are related to some villager, who becomes his « host » : they have to ask permission to the village chief and to the elders ; during their stay in the village, they are strictly dependent on their host and go hunting with him.

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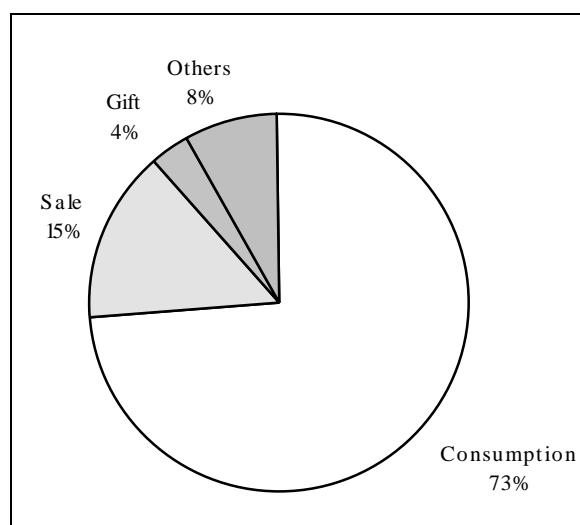
<sup>8</sup> These spaces are roughly estimated at 4000 hectares for Goute and 5000 hectares for Djemiong. The Dimako API project mapped the Bimba village forest, a village neighbouring Goute and Djemiong, and has estimated this area at around 6000 hectares (Mendouga & Pénelon, 1995).

<sup>4</sup> Boli and Mezime ethnic groups are patrilineal societies : filiation is transmitted by father. The lineage is the set of individuals who have a common ancestor ; this ancestor is known and it is possible to draw a continuous genealogical line till him. The patrilineage is characterised by a rule of coresidence between its male members and it is exogamous.

Inside the village forest, access is free for the village hunters, but there is a certain allocation of hunting places within the village forest, between extended families<sup>5</sup>. This allocation doesn't represent any « official » inheritance, but it is said that, in any aspect of life, « the son follows his father ». Hunters carry on harvesting the same areas than their father, where they learnt hunting and where the forest is more familiar than anywhere else. They can change their areas, according to availability of wildlife, accessibility, etc., but kinship remains the first criteria of choice.

## ***II.2. Allocation of game : food security and social cohesion***

In order to analyse the circulation of game, we looked at the outcome of harvested animals. This circulation is mostly internal to the patrilineage and to the village, and is done first through sharing and collective meals and second through sale.



Consumption represents the outcome of around 70% of the game harvested during the entire period. As consumption is always linked with sharing, it appears that hunting is above all for food security and social cohesion. Consumption follows precise social rules, expressed through the system of dividing up harvested animals and through a large distribution of game. All consumed game is shared into three spheres :

- the hunting group, during camping periods : part of the harvest is cooked and eaten by the group, and hunters who have brought nothing back receive part of other hunters' catch ;
- the extended family : the game is divided up and specific parts of the game are given to some members according to hierarchy ; this distribution is strengthened by the existence of food taboos for young people and for hunters whose wife is pregnant ;
- the patrilineage and the village : meals are collective, different nuclear/extended families daily form a group and eat together ;

Gifts, that traditionally play an important role in the circulation of goods (Mauss, 1922 ; Sahlins, 1968), are very less developed. On the contrary, sale appears to be a new mean of circulation, creating monetary networks of exchange between villagers : around 30% of harvested game has been sold *inside* the village. This shows that sale can represent a social obligation, like sharing and gifts.

<sup>5</sup> The extended family is composed of two or more nuclear families, from different generations. In the studied villages, it is generally the father's nuclear family and his son's families. In East-Cameroon, the extended family represents the « traditional » first level of kinship.

In the studied villages, sharing, common meals and sale represent important internal circuits of exchange for wildlife, and play the same role as gifts, creating networks of distribution and reciprocity between villagers. Thus, food security and social cohesion are two main objectives of hunting and kinship is again a major aspect of management.

**II.3. Interactions and complementarity between activities**

In the studied ethnic groups, agriculture is the main activity, and secondary activities are hunting, fishing and gathering. Villagers manage the interactions between these different activities which are complementary, in terms of food supply, time, social relationships and monetary income.

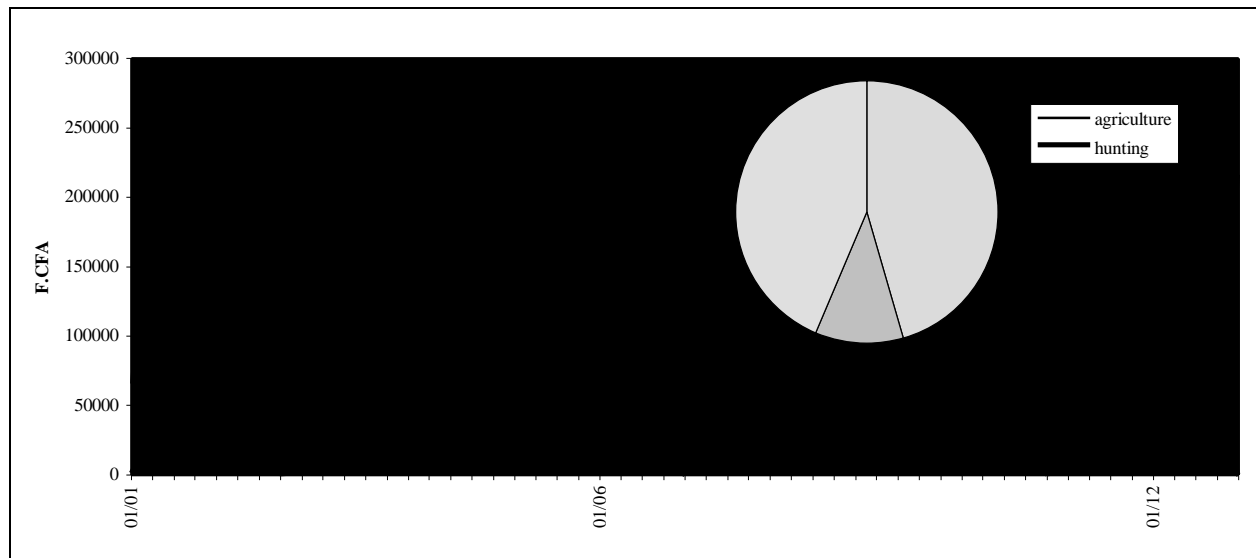
The calendar of the different activities during the year shows that there is a complementarity between hunting and other activities in terms of time and food.

	Jan.	Fev.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<b>HUNTING</b>												
<b>Fishing (men, women)</b>												
<b>Gathering (men, women)</b>												
<b>Subsistence crops</b>												
- slash and burn (men)												
- other works (women)												
<b>Crash crops (men)</b>												
- upkeep												
- harvest												

In terms of food, the hunting season is situated between June and November, and during this period, hunting represents the principal source of animal protein ; very little livestock is raised and, in anyway, is reserved to special or ceremonial occasions. During the main dry season, between December and May, fish replaces game. Gathering small animals, such as snails, represents a complement both during hunting and fishing season.

In terms of time, there is originally a perfect complementarity between hunting and other activities : hunting begins when fishing finishes, and hunting and gathering can be done at the same time by hunters, who collect products on their trap paths. For subsistence agriculture, men are, in principle, only concerned with the preparation of fields, which consists in shlashing and burning ; this preparation is made during the dry season, i.e. outside the hunting season. Thus, we see that men are traditionally occupied with agriculture only during a short period ; they share the rest of their time between fishing and hunting. However, with the adoption of crash crops after the second world war, agriculture has tend to interact with hunting : men have a lot of work to do during the hunting season. Moreover, since the decrease of coffee and cocoa prices at the end of the 1980s, villagers have developed subsistence agriculture in order to compensate the fall of their monetary income, and many men have began to do traditionally female works, again during the hunting season.

In terms of income, agriculture is the main source of money (about 50% of the total annual income) and, as the low percentage of game selling, income from hunting is relatively low (about 10% of the annual income). In fact, hunting represents a complement of money during the periods where agricultural incomes are the lowest of the year. Moreover, villagers use hunting as a rapid and easy way to get money when needed, especially for occasional or unexpected expenses, such as school expenses or illness.



## II - The search for local management of wildlife

Management can be defined as the implementation of certain actions (identification of the management body, definition of access and harvest rules, establishment of monitoring and sanctioning system), in order to reach certain objectives (viability of the renewable resource and of human activities); the idea of « local » means that these actions have to rest on populations' practices and that the management body has to be, to a certain extent, local. We use the results of our field study to discuss feasibility and modes of local wildlife management in Africa. We give in this draft some elements that are being developed.

### II.1. Identifying the management body

Two sets of questions are important :

- how to socially and spatially define the notion of « local » ? In East-Cameroon, is the *village* the local level and can it represent the appropriate management body ?
- what are the interactions between the local and larger levels, especially the State and what should be the respective responsibilities of each level ?

We observed through many aspects that the « village » was characterised by a certain internal unity and cohesion :

- in social terms : the village is constituted according to kinship rules of co- and patrilocal residence for members of the same patrilineage ;
- in political terms : there exists a political structure, the village council, whose role is to take collective decisions and to resolve internal affairs or conflicts ;

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- in economic terms : there is a common appropriation of a harvest space and of resources, and outsiders are excluded ; reciprocity and distribution networks, internal circulation of goods and resources, through sharing, sale and gifts, are important ;

Considering these characteristics, is the village the appropriate local management level ? The village seems to correspond to a « community » which implies, according to many scholars, solidarity, homogeneity and collective action and, as such, can be able to design viable management systems (Ostrom, 1986 ; McCay & Acheson, 1987).

However, such a community can be sometimes difficult to identify, especially due to the relative flexibility of its limits. In East-Cameroun, kinship is not always precisely defined, and some authors speak of « fluid » societies (Burnham, 1980 ; Geschiere, 1982), where the residential and filiation group can be recomposed under special circumstances. The community exists primarily according to « stangers », whose definition is not rigid : in some cases, the community can be the patrilineage, the village, the clan or even a larger group, according to alliance and friendship links. This phenomenon was very frequent before the colonization, where the human settlements could be the consequence of wars and alliances, more than actual genealogical links ; with time, common residence often artificially created such links. Nowadays, concerning hunting, this flexibility is translated into the difficulty to identify universal exclusion rules, even if these rules are clearly enacted. Possessing alliance or friendship links with the villagers does not give « automatic » permission to hunt in the village forest, since each case is treated individually and depends on the circumstances, and maybe on the villagers' moods : some hunters are sometimes refused access to the village forest, and others obtain authorization, only to be suddenly thrown out ; strangers can also have access to hunting thanks to a short nice meeting with some villager.

Each village appropriates a territory, reserved to the activities of its members. As kinship can be very fluid, residence represents, in this region, a factor of unity. Thus, there seems to be an adequacy between social and spatial identification of the community. However, considering spatial issues, problems of definition also appear :

- Space as such is only apprehended in terms of the resources it contains and of the uses of these resources (Karsenty, 1996). The idea of a « limit » is inappropriate, because the village forest represents above all a loosely defined, habitual area of activity and influence around the village. The boundaries are set naturally, depending on the (real or expected) availability of resources, or according to the distance to be covered. Then it is difficult to speak of an actual « territory » that is appropriated by a village, because villagers don't defend space, but resources in places where activities can be done.

- Limits have a social existence, only towards outsiders and their exclusion from harvest. Again, as the community, the affirmation of a limit and its location are flexible and can depend on special circumstances : for example, the community space is generally the « village forest », when the outsider is a non-villager, but can sometimes be included into the « clan forest », when the outsider is a non-clan or non-ethny member.

In terms of collective decision making, we are faced to so called « segmentary » societies, characterised by egalitarian ideology and the absence of command and coercion. Authority depends on personal prestige and is primarily that of elders, based on respect. The village chief, who was instituted during the colonial period, has only administrative functions and hasn't got any internal legitimacy.

Considering collective action, many levels of unity and decision can be identified, as representative of a community ; these levels are legitimate and active, depending on contexts :

- the individual,
- the nuclear family,
- the extended family,
- the patrilineage,
- the village,
- largers groups (according to mariage and friendship links).

Many decision bodies can also be identified, again depending on contexts :

- the individual,
- the head of the nuclear family,
- the head of the extended family,
- the village/patrilineage council (village cheaf and elders).

	<b>Level of action</b>	<b>Level of decision</b>	<b>Decision body</b>	<b>factors of decision</b>
<b>Access</b>	- Village - Group of alliance and friendship (notably clan)	patrilineage/village	Village council	kinship and definition of outsider, availability of resources
<b>Harvest</b>	- Individual - Hunting group	nuclear family	- Individual - Head of the nuclear family	nutritional, distribution and monetary needs
<b>Allocation</b>	- Hunting group - Extended family - Patrilineage/village	patrilineage/village	- Individual - Head of the extended family	collective nutritional needs social cohesion

Once the local level and body of management have been identified, another aspect of discussion is the respective rights and duties of local and other levels, notably the State, and of other actors, such as logging companies ; many scholars speak of the possibilities of « co-management » between local communities and the State (Pinkerton, 1989) or « patrimonial management » between all actors (Ollagnon, 1989 ; Weber, 1996). In Cameroon, wildlife belongs to the State and local populations only possess a right of « traditional » use on wildlife. Villagers don't have the right to exclude strangers from the village forest, and have no weight when confronted with logging companies who have received cutting authorizations from the administration. The new forest law (1994) gives the village the right to apply for the official appropriation of a « community forest », i.e. a territory reserved to villagers' activities. Considering local representations of space, the consequences of creating actual limits to the village forest have to be discussed (Karsenty, 1996) ; moreover, the local management body should have management rights, i.e. « collectif choice rights » (Schlager & Ostrom, 1992), notably the right to design and change rules, and not only access, harvest and exclusion rules.

## ***II.2. Designing management rules***

Questions are :

- what are customary rules that apply to wildlife management ?
- have these rules any functionality affecting wildlife ?
- to what degree can these rules and theoretical management instruments (public regulation or economic incentives) be associated, in order to regulate harvest ?



We observed two types of customary rules : rules of access and harvest.

Rules of access concern :

- the exclusion of outsiders, i.e. anyone who doesn't belong to the founder patrilineages of the villages and hasn't got any marriage or friendship link with villagers ;
- a certain family appropriation of hunting plots, since hunters tend to exploit the same areas than their father.

Harvest rules, in time and space are :

- the seasonality of hunting : hunting is practiced only half the year ;
- the existence of holly sites : in the forest of Bimba, a neighbouring village of Goute, there is a holly site ; villagers say that this site is inhabited by hostile spirits who forbid any harvest of natural resources ;
- the rotation of hunting plots : each year the majority of hunters rotate from one area to another, the ostensible goal being to « calm » the area ;
- traps must not be set on or near an already occupied hunting path, so that the potential catch in the vicinity can be « maximized ». This rule combined with the family appropriation of hunting space implies a certain allotment of hunters in the village forest.

Quantitative harvest rules are :

- there's no explicit rule of limiting hunting pressure for the village hunters ; on the contrary, the prestige of the hunter depends on the amount of sharing and distribution that he creates and, thus, the quantities of game harvested ; occasional foreign hunters face this type of rule if they don't distribute a part of their captures to the villagers, even through sale ;
- share and distribution obligations can represent, in a certain way, a rule of limiting hunting pressure. We observed a certain specialization of activities in the villages : only a minority of hunters achieve the majority of captures and provide the entire village with game ; the assurance to have meat thanks to distribution avoids any escalation of harvest.

A first question is theoretical : what is exactly a rule ? Schlager & Ostrom (1992) define rules as « generally agreed-upon and enforced prescriptions that require, forbid, or permit specific actions for more than a single individual ». The rules we observed are not defined as such by villagers : they often are a consequence of practices and logic (ex : « I hunt during rainy seasons because it is easier to trap animals »), or a consequence of other activities (ex : « I don't hunt during dry seasons because I'm busy with agriculture »). Also can we call « management rules », the regularities of behaviour we observed and ex-post interpreted as being rules ? Such a question has notably been asked by Bourdieu (Bouveresse, 1995), who distinguishes « rules » and « habitus ». Moreover, the major explicit rules we identified don't directly apply to hunting but to all social relations (ex : kinship, distribution obligations).

A second key discussion concerns the functionality of these rules affecting wildlife (McCay & Acheson, 1987). Ostrom (1990) shows that, in viable common property systems, rules are particularly well adapted to local conditions. According to some authors, voluntary conservation cannot be ignored among many societies, who present an actual « traditional ecological knowledge » (Berkes & al., 1995 ; Colding & Folke, 1996) ; on the contrary, Hames (1987) shows the uncertainty of any real conservationist practices of hunters/gatherers in Amazonia. In East-Cameroon, it seems that the prim aim of rules are maximization of quantities and allocation of game inside the legitimate

social groups ; the actual ecological effects of such rules need to be analyzed<sup>6</sup>. Also, whatever the original functions of these rules might be, to what degree can the system base itself on them ?

A third question concerns theoretical management instruments of renewable resources : what can the influence of these instruments (public regulation, economic incentives such as ITQs) be in a context of weak monetarization and strong collective patterns, and to what degree can customary rules and economic incentives be associated, in order to regulate harvest ? Again, the problem of the flexibility of customary rules, already mentioned, has to be taken into account : how to transform implicit and contextual, thus flexible, « rules » into official and more rigid, management tools ?

### ***II.3. Implementing monitoring and sanctioning systems***

The local system of internal affairs judgement and conflict resolution shows, once again, the importance of kinship and social cohesion. Is this local system appropriate to enforce management rules ?

The local body of conflict resolution and judgement is the village council, composed by the elders and the chief of the village. The village council is not really a court because its aims are to maintain social peace and cohesion, and never to judge and punish guilty persons. There exist specific procedures in case of problems : the complainant applies to the village council and lodge an official complaint, the guilty person is judged by the council and is imposed to pay a fine. In fact, these procedures are never put into practice : the conflict is generally resolved directly between the two persons, and the agreement is sealed by the exchange of gifts. In any case, lodging a complaint against his « brother » is perceived as very « shameful » and belonging to the same « family » is often enough to resolve any problem. It is only in case of serious disagree that the affair goes to the council, and then, elders will try to reassert kinship relations in order to calm down the parties. When a case cannot be settled on this level, it is sent before the customary court in the county town of the canton. The customary court, created by the State after an administrative division into cantons, is presided over by the canton chief, seconded by assessors ; all are from villages of the area and are designated by the villagers themselves, although they receive a salary from the State. In the customary court, the modes of resolving problems are the same as the village council. In very serious affairs, the case may go to the Prefecture of Batouri; it is only at this level that cases are really perceived by villagers as « official ».

Concerning hunting, we saw that the majority of customary rules are the consequence of daily practices ; also affairs concern generally kinship and allocation questions, i.e. the violation of social rules not directly concerned with hunting pressure. We analysed more precisely the case of game theft, that are apparently very frequent in the villages. In the rare cases where the thief is identified, he is usually « condemned » to making excuses and offering a gift or an alcoholic beverage, which represent a form of reestablishment of allocation. The sanction has always a collective character and represents the affirmation of kinship links and has to reinforce the group unity.

Thus, to what degree local decision-making authorities and regional judiciary authorities are able to monitor rules and applications of punishments in the management system ? Furthermore, rule violation thresholds and types of punishment have to be determined in a context of conflicts resolution largely based on kinship, and as such characterised by the same flexibility.

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<sup>6</sup> An effort on this subject is the multi-agent simulation being prepared by the research unit CIRAD-Green. The model superimposes hunting practices and rules, and main species behavior in space.

## ***II.4. Choosing management objectives and designing adaptive systems***

Discussion of rules also implies examining management objectives, both from a socio-economic and ecological point of view. In renewable resources theory, the ecological objective is an animal stock level corresponding to carrying capacity and considered as « sustainable ». The socio-economic objective is a production level which permits maximization of individual and collective well-being, corresponding to an « optimum ». In the literature on common property regimes, viability conditions of management systems are principally discussed by ecologists (Berkes & al., 1995), but seem to be less analysed by social sciences scholars, who principally speak of « success », notably measured by enduring institutions (Ostrom, 1990).

In terms of ecological viability, it is very difficult to analyse the impact of village hunting. Wildlife densities and characteristics in this particular zone have not been analysed yet ; villagers speak of a decrease for about twenty years, but this hypothesis is not confirmed by any study. Even if we consider that wildlife has actually been decreasing and faced to the multiplicity of internal and external factors, it is difficult to identify the role of villagers' pressure : hunting is largely practised by logging companies workers, who mostly are strangers, and by clandestine and well-armed hunters involved in commercialization circuits with urban merchants ; moreover, direct consequences of logging on wildlife are not known.

In terms of socioeconomic viability, it is vital to take into account the objectives of populations and the logic that drives their practices. In East Cameroon, we observed that villagers' ultimate goals in their hunting activities are first of all a guarantee of nourishment and social cohesion, and, of secondary importance, monetary income. This context has to be fully understood before management modes can be considered, if they are to have any impact on local practices. Local objectives also raise the question of *development*, again quite ignored by renewable resources and common property theories but very important inside the notions of viability or sustainability. Another aspect is the interactions between activities and the importance of managing multiple activities and not only wildlife as a particular resource : it appeared that hunting was included in a larger social and economic system, with complementarities and interferences between activities (hunting and fishing/gathering, hunting and agriculture).

Viability also raises the question of adaptability, and « resilience » (Berkes & al., 1995), of local structures. During the course of history, local populations have seen many external factors appear. Two major changes have been the monetarization of local economies and the opening of roads. Faced to these changes, it seems to us that societies have been able, in a certain way, to adapt their organization, practices and rules, in order to maintain their prim objectives.

The monetarization of local economies has been the consequence of the introduction, during the colonial period, of « intensive » agricultural production, especially of coffee and cocoa after the second world war. The local populations passed from an economy based only on self-subsistence to a monetary economy based primarily on cultivation for export. Opening and maintenance of roads facilitated the flow of products towards cities and the arrival of merchants, leading to a certain expansion of commerce.

This process has not implied the complete disappearance of share and distribution obligations. On the contrary, manufactured goods or money represent new types of gifts, and sale has become a form of social circuit. If we compare the two studied villages, Goute situated in an enclave and Djemiong on a road, the differences are not dramatic in terms of hunting practices and customary organization ;

monetary circuits are naturally more developed at Djemiong but social obligations carry on governing many practices. This adaptability can be favored by the flexibility of customary rules and the possibility of internally changing them according to circumstances and evolution. For example, concerning access, villagers tend to be intolerant towards outside hunters, whatever their origin or link with the village, when scarce resources are involved : since villagers think that game has become scarce, occasional hunters are supposed to limit their kills unless they distribute game, even by sale, in the village welcoming them.

However, for the moment, external changes cannot be considered as being important. Roads are undeveloped and, even at Djemiong, it is hard to speak of an actual opening of the zone ; especially, sale represents less than 10% of the captured game and, as described before, local villages are not concerned with organized commercialization networks. Then, the consequences of a larger opening have to be considered.

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