

SIMPLE CRITERIA AND INDICATORS TO UNCOVER AND NEGOTIATE LOCAL PERCEPTIONS ON SUSTAINABILITY

ANNE MARIE TIANI¹ AND JEAN-MARTIAL BONIS CHARANCLE²

SUMMARY

Simple Criteria and Indicators (C&I – to be read as C and Is) can be used to help forest people express their view on sustainability. Three main findings characterize local perceptions:

- The natural and social worlds are intertwined, confirming environmental services as elements of well-being;
- The C&I often express lacking factors, uncertainties and apprehensions, thus they are naturally dynamic, and could be efficient as tools to monitor and evaluate social changes;
- The variability of interests and motivations of different social groups that make up a community is mitigated by a convergence of vision related to social capital, land security, resource management, and quality of life.

We conclude that prior identification of the C&I through a systematic process will allow development projects to be more adapted to communities' specific needs and to increase community support and involvement.

Key words: Local populations; social groups; sustainable forest management; people's well-being.

INTRODUCTION

Natural tropical forests support a web of actors and stakeholders with diverging interests and motivations that are often a cause of tension (Wollenberg *et al.*, 2001a; FAO, 2003). In such a context, management systems based on mutual acknowledgement, collaboration, and equity are likely to reduce conflicts (Hartanto *et al.*, 2003).

Tools are needed to help stakeholders participate in a dialogue in order to reach agreement on management objectives (Prabhu *et al.*, 1996). The Criteria and Indicators (C&I) for sustainable management were developed for this

¹Anne Marie Tiani is a socio-ecologist and researcher at the Yaoundé Cameroon regional office for the Centre for International Forestry Research (CIFOR). Address for correspondence: CIFOR Central Africa Regional Office, P.O.Box 2008 (Messa) Yaounde Cameroon, Phone (237) 981 59 28; (237) 222 74 49; (237) 222 74 51; Fax: (237) 222 74 50. Email a.tiani@cgiar.org

²Jean-Martial Bonis Charancle is a consultant in the field of community-based natural resource management (E-mail: jmbc@sympatico.ca). From 2001 to 2003, he was Director of Sustainable Development for Innovative Resources Management (IRM), an American NGO based in Washington, DC (www.irmgt.com)

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purpose. Used as a normative basis for judgment, they allow influential players such as environmental NGOs, State entities and macroeconomic operators to negotiate and agree on the content of sustainable management (Bass, 2001).

C&I studies have focused mainly on commercial natural forests for the production of timber. The Forest Stewardship Council (FSC) and other organizations, such as the African Wood Organization (OAB), in collaboration with the Center for International Forestry Research (CIFOR), have identified C&I for sustainable forest management certification.

However, in Cameroon and in other countries, large stretches of forestland have been managed by the communities since time immemorial. Thus, the recent policy of decentralizing³ forest management in the country has endorsed the recognition of local communities' involvement in forest management.⁴ In response, in 1996, CIFOR began to research C&I for forests that were managed by local communities (Burford de Oliveira *et al.*, 1998 and 2000; Ritchie *et al.*, 2000, Tiani, Nguiebouri and Diaw, 2004), and developed a simple methodology to reveal local communities' perspectives of sustainability (Colfer *et al.*, 1999a and b). The methodology was inspired by that used for forests managed with commercial objectives. It involved local community participation simply as informants. Sets of scientific C&I adapted to different sites were identified, but tests of their use as a monitoring tool proved to be difficult in most cases (Sherstha, 2001; Pokorny, 2001).

Applying scientific or normative C&I in a rural context is difficult because of their

- multidimensional complexity;
- language is either too technical or too sophisticated,
- layered structure (Principles, criteria, indicators, verifiers) (Lammers Van Bueren and Blom, 1997) is difficult to grasp, and
- categorization into separate disciplines (ecological, social, economic, legal) is contrary to villagers' perception of the environment which is integrative and utilitarian (Nasi *et al.*, 2001, Diaw, 2002).

This finding led to the conclusion that the definition of C&I by local managers should be simplified and redefined in terms of the culture and language of the local communities.

³Cameroon owns more than 20 million hectares of forests (41% of the country's land)(cf Global Forest Watch (2005)). The new law established in 1994 – a product of the decentralization process – instituted a zoning plan that allocated 80% of the forest to the permanent domain and 20% to the non-permanent domain. The latter reported some 67 private forests of undetermined size and 132 community forests covering 241,466 ha.

⁴ In Cameroon, local population's participation is now required in many contexts: to manage forest concessions (particularly with regard to the limitations of concessions, customary user rights and socio-economic repercussions laid out in the contract terms of reference) as well as in communal forests and community forests whose major objectives are to promote sustainable management and local development.

Simplifying Criteria and Indicators

The simplification process conducted by CIFOR since 2000 relates to three dimensions (Tiani, Nguiebouri and Diaw, 2004):

Process: bringing the development of C&I back to its main aim – the identification of common management objectives and indicators specifying the successive conditions for achieving those objectives.

Language: stripping the C&I language of its complicated terms and technical words without affecting its scientific validity, in order to make it easier to understand and accessible to all.

Structure: simplifying the hierarchical structure and reducing the number of levels between objectives and their verification (Lorenzo and Hartanto, 2001), in order to obtain C&I that correspond to the local stakeholders' perception and conception of the environment.

Structural simplification may be inappropriate because the principles and criteria and indicators and verifiers vary according to the context and objectives of the exercise (negotiations for the design and implementation of a participative system of monitoring, for example).

Simple Criteria and Indicators ignore disciplines and hierarchies. They consist of either Criteria or Indicators or even Verifiers, and are referred to as “simple Criteria and/or Indicators”, or “simple C&I”.

Our research hypothesis was that “simple C&I” can be used in a dialogue to help different social groups in a given community **express** and **share** their perceptions of sustainability, in order to **negotiate** and **reach consensual agreement** on sustainable forest management.

The experiments described in this paper are part of a capacity-building process⁵ designed and conducted by Innovative Resources Management (IRM) between 1998 and 2003 at Djoum and N’Gambe Tikar (Cameroon), with technical support from CIFOR and CIRAD. It supported local communities in

- developing “simple C&I”,
- testing them as communication tools to uncover and share various social group’ perceptions on sustainability, and then
- using them in a dialogue to reach agreement on a minimum set of objectives for sustainable forest management.

⁵The field experience described in this paper is part of the broader framework of COAIT (Community Options Analysis and Investment Tool). COAIT is a methodological tool designed by IRM that enables communities to strategically, systematically and comprehensively collect and analyze economic, environmental, and social data and use it to make sustainable choices among various development and Natural Resource Management options.

SITES: DJOUM AND N'GAMBÉ TIKAR

Two sites were selected in Cameroon, covering approximately 6,000 km² where some fifty villages with about 20,000 inhabitants are located.

Canton Fang, Djoum

The Fang *Canton* at Djoum (Southern Cameroon) spans about 2,240 square kilometers, with a population density that is lower than 4 per sq. km. It is composed of 15 villages and hamlets located along the 44 km-long axis of Djoum-Nkoleyeng. The population is made up of two main ethnic groups, the Fang and the Baka pygmies. Their societies are composed of clans and lineages having individual and collective rights to the forest.

The humid and deciduous tropical forest of the region has rich fauna, flora and fish resources and was undisturbed until the 1990s. The forest's recent history has been marked by a succession of events that gradually divested local communities of their rights to these land and wood resources. These include but are not restricted to:

- the Dja forest being classified as a biosphere reserve;
- the expansion of industrial palm plantations that has led to the privatization of community lands by some external elites;
- anarchic and often fraudulent forestry practices by a plethora of logging companies⁶;
- recent creation of the Djoum council forest;
- current creation of the Mengamé gorilla sanctuary in the southern part of the area.

These interventions took local communities by surprise and left them marginalized by more powerful stakeholders such as elites, logging companies, government bureaucrats and managers of the protected areas. The communities are beginning to suffer the consequences of a drastic loss of living space.

For this research, 6 focus groups, each made up of 15 people from the 15 villages were formed⁷:

- the Baka Pygmies,
- Fang Youths,
- Fang Women,
- Representatives of organized groups (CIGs (Common Interest Groups) and associations),

⁶We are referring to the following companies: WTK, WTC, Bois 2000, Patrice Bois, COFA and AVEICO.

⁷Traditional authorities were responsible of choosing group representatives.

- Internal Elites (Fang only) and
- Resources Users (Fang and Baka)

N’Gambé Tikar

Located at the extreme north western tip of the central province (Cameroon), the N’gambe Tikar district covers about 4000 km², with a population of about 12,000. The populations are made up of two unequally represented ethnic groups: the Tikar, estimated at 10,000, and the Bedjang⁸ pygmy group estimated at about 1,000 individuals. Besides these, there are Fulani pastoralists, also called Peulh Bororo, settled as well as migrants from other areas of the country. While multiple conflicts divide various users of the forest, the most violent ones are between the Tikar farmers and Fulani livestock holders.

The area is a transition zone between forest and wooded savannah. A network of forest galleries cut across shrubby savannahs, alternating with a thick semi-deciduous forest. The wealth of species inherent to this formation explains the interest of logging companies in the region.

Livelihood activities are essentially subsistence farming, domestic livestock production (sheep, goats, chickens, ducks and pigs) by Tikar people and livestock grazing (ovine and bovine) by the Fulani in the savannah. A third sector is transient and limited to some highly unstable jobs created by outside entities such as sawmills and logging companies that have succeeded each other in the region⁹.

At N’Gambe Tikar, five focus groups were organized¹⁰, each made up of about fifteen people from four large villages. They were:

- Youth,
- Fulani,
- Medjang Pygmies,
- Local Elites and
- Women.

SIMPLE C&I VIEWED BY VARIOUS SOCIAL GROUPS

From an outsider’s point of view, a local community may appear to be one homogenous entity. However, this perception hides a multiplicity of divisions and antagonisms that arise from the many interest groups (men/women, elders/

⁸Bedjang, Medjang, when plural:

⁹We are referring to logging companies such as the Société forestière de Nditam (SEFN), 1990; Miguel Kourhy, 1999; Société Forestière Hazim, 1992 and the SFHSNT (1996-2003). Furthermore, many cutting sales have been attributed. The State grants these *vente de coupe*, which are relatively small sites of 2,500 hectares, for a period of two years at the most.

¹⁰In the two sites, except for women groups, the other groups were made were made of men.

youths, ethnic groups, natives/ migrants, etc) related to the factors of production (control of labour or land, farmer/herder tensions), power disputes or even interpersonal rivalries and mysterious jealousies (de Sardan, 1995). These divisions reinforce the need for a neutral tool to provide each group the means and opportunity to express their perceptions and aspirations.

The identification of “simple C&I” were carried out by local facilitators¹¹ with the support of external animators¹². In each focus group, tools such as word association and discourse analysis were used to:

- develop a common understanding of sustainable forest management (SFM) and human well being (HWB) and build an ideal vision of the future. The method consists of enabling people to articulate their hopes, build awareness about their hopes and empower them to realize that it is possible to achieve them (Wollenberg and Buck, 2000). These hopes are then set as the main objectives of the forest resource management.
- identify conditions needed to reach these objectives. These conditions then become criteria (or, sometimes indicators). One or a set of indicators and verifiers are then defined for each criterion¹¹

At the end of this process, each focus group developed its own set of C&I for SFM and HWB. These simple C&I were gathered together to make up a single Criteria Bag.

USING SIMPLE C&I IN FOREST MANAGEMENT

Reaching Agreements on Sustainable Forest Management Using Simple C&I

The methodology employed was designed to extract a consensual core of simple C&I from the criteria bag through a democratic process accepted by the whole community. The “bag of criteria exercise” acknowledged social groups particularities, but the selection of a core group of simple C&I was driven by the need to establish a compromise among different interests and motivations.

The process of developing simple consensual C&I consisted of first creating a Bag of simple C&I using the process described above. Then each focus group designated a limited number of representatives who participated in a representatives’ assembly that was in charge of pondering and ranking all C&I. The methodology used at this stage was group discussions alternating with

¹¹The local facilitators were chosen by their communities and took part in a capacity-building process which included the exercise we describe in this article.

¹²Researchers from institutions such as Innovative Resources Management, the Center for International Forestry Research and the Centre de Coopération Internationale en Recherche Agronomique pour le Développement.

TABLE 1

A bag of C&I from the 6 focus groups. Canton Fang, Djoum, 2002.

	Fang Re- Fang Fang					Total
	GIC	Baka	Elites	Users	Women Youth	
1 <i>Investment in local infrastructures (stores, markets, water, health, etc.)</i>			x		x x	3
2 <i>No abusive logging</i>	x	x	x		x x	5
3 <i>More equitable sharing of forest resources between the Fang and the Baka</i>	x	x			x	3
4 Swamps are not disturbed						0
5 <i>Presence of all animal species</i>		x	x	x	x x	5
6 <i>Better access to school</i>	x	x			x x	4
7 <i>Better access to health care</i>	x	x		x	x x	5
8 Soil fertility		x		x		2
9 Increase of local revenue			x			1
10 Better distribution of forest royalties		x	x			2
11 <i>Better access to information</i>			x		x x	3
12 <i>Hunting, fishing and forest rules respected</i>	x		x	x	x x	5
13 <i>Improved road infrastructures</i>	x		x	x		3
14 Unpolluted waterways				x		1
15 Creation of market outlets for products				x		1
16 <i>Ethnic, religious and social tolerance</i>	x		x		x	3
17 Honouring traditions and customs						0
18 Recognition of populations' civic rights	x			x		2
19 <i>Abundance of fish</i>		x	x	x	x x	5
20 <i>Community access to community forests</i>	x		x	x	x x	5
21 Local communities' access to and control over land		x				1
22 Animals abundant in forest	x	x				2
23 <i>Presence of NTFP</i>		x		x	x x	4
24 Promotion of rural outreach						0
25 <i>Good relations within and among villages</i>	x	x			x x	4
26 Abundance of mineral resources						0
27 Absence of erosion						0
28 Abundance of timber	x				x	2
29 Job creation					x x	2
30 <i>Having a home and starting a family</i>	x	x	x			3
31 <i>Good nutrition</i>	x		x		x	3
32 Stable climate						0
33 Diversified vegetation				x	x	2
34 The forest is not disturbed				x		1
35 Air purity						0
36 <i>Reinforced community solidarity (associations, CIGs)</i>		x	x	x		3
37 Trees are abundant	x		x			2
38 <i>Crop rotation and diversification</i>		x		x	x	3

C&I in bold italics are those that have been identified as particularly important in at least 3 focus group.

plenary sessions where results were compared and some C&I eliminated. Three filters were used:

- *First Filter:* Each social group representatives was asked to choose the 15 criteria they believed to be most pertinent from the Criteria Bag. See results in Table 1.
- *Second Filter:* The 15 C&I selected by each social group were then pooled followed by a second elimination process. Only the criteria selected by at least 3 out of the 5 or 6 groups were retained. (Table 2)
- *Third Filter:* These selected criteria were then prioritizing and pondered. Each social group was asked to distribute 100 points among the selected C&I. C&I were then ranked according to their pondered weight. The most important C&I for the entire community are those with the highest ranking. See results in tables 3 and 5.

At the end of this process, the core set of simple C&I for SFM and HWB comprised of 18 criteria at Djoum and 15 criteria at N'Gambe Tikar¹³. We realized that Criteria were eliminated if they were vague, redundant¹⁴, too specific to a particular social group or conflicted with the interests of dominant groups like men, Tikar or Fang, because of their numerical importance in almost all of the groups.

Simple C&I: Communication and Negotiation Tools

Implicit hierarchies, divisions and identity issues make communications among different social groups difficult – even though they share the same living space. “Simple C&I” were to be used to lay bridges between social groups and create conditions for constructive dialogue among them.

The process was planned to be carried out in three steps.

- The first step was to establish a set of C&I for each social group.
- Secondly, we proceeded to exchange sets of criteria, so that each group could become aware of everyone else’s perceptions.
- The third step was to initiate discussions on the similarities, convergences, negotiable interests, specificities and divergences at hand.

¹³see Bonis Charancla *et al.*, 2004; Karsenty *et al.*, 2004, Tiani *et al.* in Diaw, *et al.* in press).

¹⁴The vague criteria we refer to here are the norms or conditionalities that communities cannot control. Examples from NT are C23: Stable climate and C12: Air purity. Redundant criteria are those that express very similar ideas: C12 and C20 are both related to forest fires; the same logic was used for C2: Good nutrition and C11: Food self-sufficiency.

TABLE 2

Consensual Criteria, Pondered and Ranked. Djoum, April 2003

Ranking		CIG	Baka	Fang Elites	Resource Users	Fang Women	Fang Youth	Total Weight	%
1	Better access to health care	9	8	8	6	13	10	54	9.0
2	No abusive logging	9	8	7	6	8	12	50	8.3
3	Presence of all animal species	7	10	6	8	7	7	45	7.5
4	Community access to community forests	7	4	10	10	9	5	45	7.5
5	Better access to information	7	2	5	13	10	7	44	7.3
6	Better access to education	7	9	8	3	9	6	42	7.0
7	Presence of NTFP	5	7	5	8	8	4	37	6.2
8	Hunting, fishing and forest rules respected	3	0	6	12	8	5	34	5.7
9	Good nutrition	6	5	5	3	7	7	33	5.5
10	Abundance of fish	5	5	3	5	7	6	31	5.2
11	Good relations within and among villages	7	6	6	2	5	3	29	4.8
12	Improved road infrastructures	7	4	9	5	0	3	28	4.7
13	Having a home and starting a family	4	12	7	1	0	3	27	4.5
14	Investing in local infrastructures	3	5	5	3	5	3	24	4.0
15	More equitable sharing of forest resources between the Fang and the Baka	2	6	4	4	4	4	24	4.0
16	Reinforced community solidarity (association, CIG)	5	4	1	5	0	6	21	3.5
17	Ethnic, religious and social tolerance	3	5	3	2	0	4	17	2.8
18	Crop rotation and diversification	4	0	2	4	0	5	15	2.5

Figure 1 illustrates an exercise designed by the local facilitators in Ngambe Tikar¹⁵. It simulates the negotiation of a real conflict between Tikar farmers and Fulani herders. At the end of the exercise, the local facilitators came to the following conclusions:

- Both ethnic groups have a desire to live in peace and collaborate;
- The Fulani would like the Tikar to grant them safe access to land for their settlement as well as pastures;
- Cattle manure can help the Tikar maintain soil fertility and increase corn yields, which is the main cash crop in the area;

¹⁵Managing the conflicts between the Tikar and Fulani was one of the three options identified by the local population as promoting local development. The other options were community forest management and the establishment of agroforestry plantations.

TABLE 3

Consensual Criteria, Prioritized and Pondered. N'Gambe Tikar, April 2003.

Ranking	Criteria	Participating focus groups					Total	%
		Women	Elites	Youth	Medjang	Fulani		
1	Better access to health care	12	11	8	7	20	58	11.6
2	Social peace	6	15	12	7	14	54	10.8
3	Better children's schooling	9	10	10	8	6	43	8.6
4	To have a home and start a family	7	5	9	6	8	35	7.0
5	To have community forests to manage	5	10	5	14	1	35	7.0
6	Access to information	7	8	7	9	3	34	6.8
7	Better land use organization	7	5	3	9	9	33	6.6
8	Food self-sufficiency	8	4	4	5	10	34	6.8
9	Promotion of social and economic development	6	6	7	6	5	30	6.0
10	Rational exploitation of forests	5	10	5	7	2	29	5.8
11	More solidarity within the community	5	3	11	4	4	27	5.4
12	Better community organization within CIG and associations	4	3	8	4	5	24	4.8
13	Unpolluted waterways	6	3	4	4	6	23	4.6
14	Soil fertility	9	2	3	5	4	23	4.6
15	Fishing and hunting regulations respected	4	5	4	5	2	20	4.0

There is a need to establish a zoning plan that defines the areas that are allocated to:

- forests to be controlled by the Tikar,
- pastures that are currently protected by formal agreements between the parties,
- farming areas that can be used rotationally for agriculture and livestock activities according to a commonly established calendar.

Monitoring Changes Using Simple C&I

It is important to specify that "well-being" is inherently an unstable ideal given that the conditions to attain it are always evolving. This means that C&I are

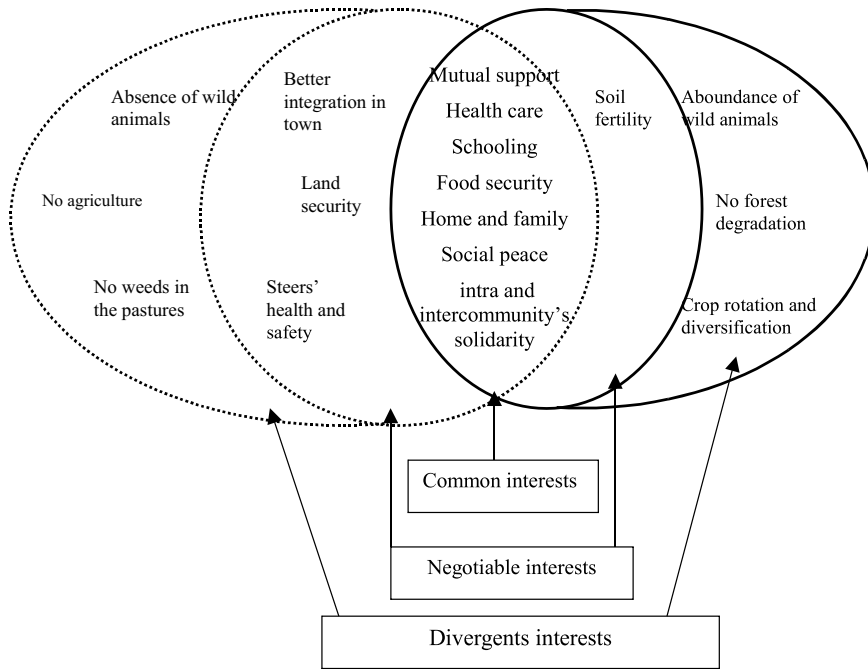
Fulani'C&Is**Tikar'C&Is**

Figure 1. A theoretical exercise of Negotiation using simple C&I.

also subject to circumstances and are dynamic. As soon as a solution is found for the problems expressed by one criterion, it loses its acuteness, fades and slowly disappears as another criterion takes its place. The quest for well-being thus becomes an evolving process that associates short term emergencies with hopes for the long-term. We think “simple C&I” can be a useful tool to reflect changes in a society, if they are updated regularly over time.

LOCAL PERCEPTIONS ON SUSTAINABILITY

Environmental Services as Elements of Well-being

The following extract of a focus group discussion of N’Gambe Tikar (April 2003) shows that there isn’t a single or exact word that can translate “well-being” in the Fulani language. Rather, a series of situations contribute to shaping a concept of “peace of mind”. These situations include people and their physical, psychological, social and cultural environment.

- *How do you say “well-being” in your language?*
- *I can't find the word, I can only give examples. We are well (fessaré) when we live in peace, the cattle are healthy, people are healthy, there is enough grass to feed the livestock, nature is not destroyed by agriculture and wild animals are far away.*

This is not a unique example. At Djoum, when we asked Baka pygmies when they could say that “Baka is well” the answer was: “When there are many animals in the forest”. These examples demonstrate that the well-being of communities that are impoverished and dependant on the forest is inextricably linked to the health of ecosystems. In the same line of thought, local facilitators translated the notion of sustainable management of forests and forest resources as “Human Well – Forest Well”, an expression that quickly became a slogan amongst those communities. This intertwining of the social and natural worlds, which Nasi, Tiani and Nguiebouri (2001) describe as a “holistic vision”, confirms the thesis put forward by Millenium Ecosystem Assessment (MA) (2003:83) that “ecosystems and their services are not only instrumental for improving well-being, but also constitutive elements of well-being”. Given that the forests' health is a prerequisite for well-being, we have concluded that categorizing C&I (into social, political, ecological and development C&I) is both artificial and ineffective. We therefore kept ourselves to the “Human Well – Forest Well” expression for all C&I.

C&I, Reflections of Ill-being

The C&I selected by these groups are not neutral. They generally highlight the missing elements that keep communities from attaining the ideal “Man Well – Forest Well”. Indeed, through the C&I, social groups often express the concerns, uncertainties or apprehensions that they wish to resolve. Only on rare occasions do they highlight success stories or social assets.

At Djoum, the ill-being caused by multiple interventions by outside forces, featuring drastic reductions in living space, resource plundering and waste and poaching orchestrated by certain logging companies and external elites, shifted the focus on to issues of ecological and land tenure security. Hence, criteria such as “No abusive logging”, “Presence of all animal species”, “Hunting, fishing and forest regulations respected”, “Presence of NTFP”, “Abundance of fish” and “Access to community forests” came before social criteria related to social peace, solidarity, tolerance or socioeconomic criteria such as “Improved infrastructure maintenance” and “Local development”.

At N’Gambe Tikar, violent conflicts between Tikar and Fulani, and between the Tikar and logging companies, certainly weighed heavily in the debate on and choice of criteria. Indeed, social criteria dominated the rankings, followed by economic ones, with ecological criteria being relegated to the lower places.

Variability in Perception and Vision – Convergence Within a Community

The participating communities approved of the criteria selected by the filtering processes, and recognized their importance. However, the importance of each criterion was perceived differently by different groups. These variations in perception – rendered in this test by the differences in weight given to each criterion by different groups – may be seen as an expression of the high variability in interests and motivations of each social group in the community.

At Djoum, the most important criteria for the Baka were related to family stability and the abundance of animals in the forest. Local elites were more concerned about the state of infrastructures and acquiring community forests that recognize their rights and powers. On the other hand, women emphasized health and education issues. At N’Gambe Tikar, women were concerned about health, food security and soil fertility. The Bedjang pygmies focused on their own land tenure security through rights of acquisition and management of their own community forests. Local elites emphasized health and social peace, as well as family stability, children’s education and the acquisition of community forests. Lastly, the Fulani also focused on social peace and health issues.

Despite such variability in the weighting of criteria we noted a certain convergence of visions, which was expressed by the similar weights given to the same criteria by different social groups. Indeed, at Djoum, there was a general agreement around the “Better access to health care”, “No abusive logging” and “Better access to information”, whereas at N’Gambe Tikar opinions converged around “Better access to health care”, “Social peace” and “Better education”. On an operational level these “consensual” criteria define a “territory” where negotiations among social groups can progress. This “territory” can be used to build a positive culture of negotiation on a local level.

What Really Matters to Local People?

An examination of the criteria developed at both sites and their respective weighting (Table 4) reveals a convergence around;

- reinforcement of social capital,
- land security, power and control,
- improvement of quality of life,
- resource durability.

Reinforcing social capital appears to be one of the major concerns given the number of criteria in this category. The basis for social capital is family stability, which is recognized as the link to social stability in general; social peace rooted on equity in the redistribution of benefits, tolerance and solidarity; capacity building, through better access to education and information. This table also confirms that the two communities have different priorities: at Djoum, resource

TABLE 4

Classification of "Human Well – Forest Well" Criteria

Shared Concerns	Djoug		N'Gambé Tikar	
	Ranking	Criterion	Ranking	Criterion
Reinforcing social capital	5	Better access to information	6	Access to information
	6	Better access to education	3	Better children's schooling
	13	To have a home and start a family	4	To have a home and start a family
	15	More equitable sharing of forest resources		More solidarity within the community
	11	Good relations within and among villages	2	Social peace
	17	Ethnic and religious tolerance		
	16	Reinforced community solidarity (associations, CIGs)	11	Better community organization within CIGs
		7	Better land use organization	
Securing land, power	4	Access to community forests	5	To have community forests
Improving quality of life	1	Better access to health care	1	Better access to health care
	9	Better nutrition	8	Food self-sufficiency
	14	Investment in socioeconomic infrastructures	9	Economic and social development
	12	Better road infrastructures		
Resource sustainability	2	No abusive logging	10	Rational exploitation of forests
	8	Hunting, fishing and forest rules respected	15	Regulated fishing and hunting
	3	Presence of all animal species		
	10	Abundance of fish	13	Unpolluted waterways
	18	Crop rotation and diversification	14	Soil fertility
	7	Presence of NTFP		

sustainability is a top concern according to the number, ranking and weight given to related criteria, while at N'Gambé Tikar reinforcing social cohesion was given more weight.

Concerns about land security are reflected in only one criterion, but they remain a top priority. The "Access to community forests" criterion expresses all of the community's recriminations, claims and frustrations about their right to

own and manage the forest and its resources by and for themselves, especially the timber. This criterion highlights the age-old conflict between forest communities and state entities over land and forest rights – exacerbated by the plundering of the forest by timber companies.

Improving quality of life is usually the most obvious element Human Well-Being, and the one on which most NGOs and development and funding agencies focus their work. From the communities' perspective, health, nutrition, building and maintaining roads as well as social and economic development are some of the many indicators of socioeconomic development.

The number and rankings of criteria related to resource sustainability reflect its great importance for both communities, especially at Djoum. The emphasis that was placed on the need for regulations on hunting, fishing and forestry activities at both sites show that:

- communities are aware of the importance of such regulations as a means to ensure the sustainability of resources and therefore, to secure their long-term means of subsistence;
- communities recognize their lack of power and ability to manage and control effectively their resources;
- communities expressed through these C&I their need to reinforce their capacities in order to make up for their lack of power and knowledge or know-how; and
- communities desire to develop a set of proper management and access regulations that would be known, recognized and applied by all parties.

All of these concerns correspond to the deficiency needs in Maslow's Hierarchy of Needs¹⁶. However, contrary to Maslow's concept that stipulates that higher needs in the hierarchy only come into focus once all the needs that are lower down in the pyramid are mainly or entirely satisfied (Maslow, 1943), the simple C&I express many levels of needs at one time, particularly with respect to physiological, safety and belonging needs. For this reason, Franken (2001) believes it is more appropriate to ask people what they want rather than relying on the theoretical approach based on Maslow's Hierarchy.

The C&I selected for "Human Well – Forest Well" by both sites are comparable to those identified by MA (2003) and Ritchie *et al.* (2000) in that they show that the determinant and constitutive elements of Human Well Being are not limited to material acquisitions to improve the quality of life. Other factors come into play, such as social capital, with its social peace, equity and access to information and education components. Communities are aware of the power and liberty that land tenure and resource security could afford them. Financial gain is not a consideration at present. Money is seen as a means, like any others (work, solidarity, etc.), that communities can use to improve HWB.

¹⁶See http://en.wikipedia.org/wiki/Maslow's_hierarchy_of_needs

Some Weaknesses: Consensus, Along with Frustrations for Minorities

The methodology employed for this research was designed to identify a core set of simple C&I through a democratic process accepted by the whole community. This process did not acknowledge particularities because it was driven by the desire to establish a compromise among different interests and motivations. Hence, a number of criteria were eliminated in the filtering process. For example, at N'Gambe Tikar criterion 8: "Better land and pasture security for livestock holders", 31: "Pastures are not invaded by weeds, 33: "Ensuring steers' health and safety" and 34: "Determination of space to integrate Peuhl (Fulani) into the city" which were specific to the Peuhl were eliminated in the first round of filtering. The same happened to criteria 10: "Rational use of NTFP (cola, lianas, raffia, vouakanga, djansan, honey, etc)", 15: Abundance of game and 22: "Freedom", although they were very important to the Bedjang. The process could not integrate these specificities, even though the social groups are constructed around these differences. Minority groups were persuaded to endorse the results imposed by the majority. While it does serve to legitimize a series of C&I, this endorsement does not necessarily represent support from all sections of the communities. On the contrary, the process can reinforce the marginalization of minority groups, and exacerbate and crystallize their frustrations.

The power dynamics among various components of the community can provoke a multiplicity of reactions and behaviour. Power differentials, sociocultural heritage and issues will tie and untie strategic and circumstantial alliances. Many types of reactions are possible: negotiation, avoidance or confrontation¹⁷. This weak point of the process must not, however, overshadow the merit of having given minority groups an opportunity to voice their opinions and particular concerns in a non-judgmental framework and influence outcomes – a situation that previously they had rarely enjoyed.

The problem resides not in the C&I, but rather with the filtering methodology employed. It is important to reflect on other approaches that would take minorities deep aspirations into account, either by reviewing the composition of focal groups, or by weighting essential and imperative criteria in each group. These are but some of the reflections that require further study.

CONCLUSIONS

Our research on the meaning of sustainability for local communities provided us with the following lessons:

¹⁷The Baka or Bedjang pygmies use avoidance strategies to deal with their powerful Fang and Tikar neighbors, respectively. However, alternating negotiations and confrontations occur between the Tikar and Peulhs.

- the natural and social worlds are inextricably intertwined, leading communities to give holistic definitions to the notions of human well-being and sustainable forest management encapsulated in “Human Well – Forest Well”;
- the C&I express social groups’ concerns, uncertainties and apprehensions they would like to see resolved. For this reason, they could be useful tools for social negotiation in that they help all parties express their position without undue pressure from other groups.
- the diversity in the C&I can be seen as expressions of the variability of interests and motivations in different social groups that make up a community. We did, however, note a certain convergence of visions, which was expressed by many social groups attaching importance to the same criteria.
- the consensus that was achieved around certain C&I on both sites does not necessarily represent generalized approval. On the contrary, because this process excludes particularities, it can in fact reinforce the marginalization of minority groups and crystallize their frustrations. Future research should be oriented towards identifying a methodology to develop consensual C&I in a way that obtains support from all parties.
- a set of simple C&I identified by communities, with contributions from its various social groups, has the potential to be a powerful participatory tool to assess the contribution of various conservation and development options to the achievement of the “Human Well – Forest Well” goal.

As tools for communications and mutual learning, local simple C&I are an opportunity for outsiders to size up local communities’ needs, aspirations and perceptions. Prior use of the C&I identification process would allow development projects to be more adapted to communities’ specific needs and to increase community support and involvement. Moreover, the C&I developed and used by these communities could be a useful tool for collaborative follow-up activities for local development initiatives. Repeating this process at regular intervals with the same social groups would reveal exactly how the community’s situation has evolved and which expectations were fulfilled. Changes in the natural resources of a community can be reflected through social indicators. Such comparisons could reveal how the community’s perceptions of environmental problems have evolved. These perceptions are one of the keys to stimulating collective action, especially in natural resource management¹⁸.

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¹⁸On this topic refer to Agrawal, 2005.

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BIBLIOGRAPHY

- Agrawal, A. 2005. Environmentality, Community, Intimate Government and the Making of Environmental Subjects in Kumaon, India. *Current Anthropology* **46**, 2. April 2005.
- Bass S. 2001. Policy inflation, Capacity constraints: Can Criteria and Indicators bridge the gaps? 18–38 in Raison R.J., Brown A.G. and Flinn D.W. (eds) *Criteria and Indicators for Sustainable Forest Management*. CABI Publishing
- Bonis-Charancle J.M., Brown M., Akwah G., Mogba Z., Tiani A.M., Lescuyer G., Warne R., Greenberg B. 2004. How the Community Options Analysis and Investment Tool (COAIT) increases analytical capability and institutional capacity in community based natural resource management. In Diaw M.C., Oyono P.R. and Prabhu R. (eds.) « *In Search for Common grounds. Adaptation, Collaboration and Equity in Local Forest Policies and Management in Cameroon* », CIFOR-ACM, Bogor, Indonesia. Forthcoming.
- Burford de Oliveira N., Shiemo P., Tiani A.M. and Vabi M. 1998. *Developing and Testing Criteria and Indicators for Sustainable Community Managed Forests in the SOLIDAM Zone, Central Province, Cameroon*. Center for International Forestry Research. Bogor, Indonesia.
- Burford de Oliveira N., with McDougall C., Ritchie B., Hartanto H., Haggith M. and Setyawati T. 2000. *Developing and Testing Criteria and Indicators of Community Managed Forest as Assessment and Learning Tools: Objectives, Methodologies and Results*. Centre for International Forestry Research. Bogor, Indonesia
- Colfer C.J.P., Tchikangwa B., Brookesby M.A., Tiani A.M., Sardjono M.A., Porro R. and Salim A. 1999a. The BAG (Basic Assessment Guide for Human Well-Being). *CIFOR Toolbox Series no. 6*. Centre for International Forestry Research. Bogor, Indonesia.
- Colfer C.J.P., Tchikangwa B., Brookesby M.A., Tiani A.M., Sardjono M.A., Porro R. and Salim A. 1999b. The Grab Bag: Supplementary Methods for Assessing Human Well-Being. *CIFOR Toolbox Series no. 6*. Centre for International Forestry Research. Bogor, Indonesia
- Diaw, C. 2002. L'altérité des tenures forestières : les théories scientifiques et la gestion des biens communs. *Informations et Commentaires, no 121*, octobre-décembre 2002. Revue internationale de Sciences Sociales Appliquées, Institut des Sciences Mathématiques et Economiques Appliquées, CORENC, France
- Diaw, M.C., Oyono P.R. and Prabhu R. (eds) (in press) *In search for Common grounds. Adaptation, Collaboration and Equity in Local Forest Policies and Management in Cameroon*. CIFOR-ACM, Bogor, Indonesia
- FAO 2003. Overview. In *Natural resource conflict management case studies: An analysis of power, participation and protected areas: 1–18*. Castro A. and Nielsen E., 2003 (eds.) Food and Agriculture Organization of the United Nations, Rome
- Franken, R. 2001. *Human motivation* (5th ed.). Pacific Grove, CA: Brooks/Cole.
- Hartanto H., Lorenzo M.C., Valmores C., Arda-Minas L., Burton E.M. and Prabhu R. 2003. *Learning together. Responding to change and complexity to improve community forests in Philippines*. Center for International Forestry Research, Bogor, Indonesia.
- Global Forest Watch 2005. *Atlas forestier interactif du Cameroun*. Version 1.0. Document de synthèse Ministère de l'Environnement et des Forêts, Global Forest Watch, World Resources Institute.
- Karsenty A., Lescuyer G., Nasi R. 2004. Est-il possible de déterminer des critères et indicateurs de gestion durable des forêts tropicales? *Revue Forestière Française*, 4/2004.

- Lammerts Van Bueren E. and Blom E. 1997. *Hierarchical Framework for the Formulation of Sustainable Forest Management Standards. Principles, Criteria and Indicators*. Leiden, the Netherlands: The Tropenbos Foundation
- Lorenzo C. and Hartanto H. 2001. *Adaptive and collaborative Management (ACM) Planning Workshop*. CIFOR Workshop report. Center for International Forestry Research, Bogor, Indonesia.
- Maslow, A.H. 1943. A theory of motivations, *Psychological Review* **50**, 370–396.
- Millenium Ecosystem Assessment (MA) 2003. *Ecosystems and Human Well-being. A framework for assessment*. World Resources Institute. Island press, Washington DC, USA.
- Nasi R., Tiani A.M. and Nguiebouri J. 2001. Tournée dans l'UTO Campo-Ma'an. Village de Nkoelon (23–28/06/2001). Center for International Forestry Research. Bogor, Indonesia.
- Pokorny B., Cayres G., Nunes W., Segebart D. and Drude R. 2001. *First experiences with Adaptive Co-Management in Para*. Center for International Forestry Research, Bogor, Indonesia.
- Prabhu R., Colfer C.J.P., Venkateswarlu P., Tan L.C., Soekmadi R. and Wollenberg E. 1996. *Testing Criteria and Indicators for the Sustainable Management of Forests: Final Report*. CIFOR Special publication. Bogor, Indonesia.
- Ritchie B., McDougall C. and Burford de Oliveira N. 2000. *Criteria and Indicators of Sustainability in Community Managed Forest Landscapes: An introductory Guide*. Centre for International Forestry Research, Bogor, Indonesia
- Sardan (de), O. 1995. *Anthropologie et Développement : Essai en Socio-anthropologie du changement social*. Paris, Karthala.
- Shrestha K.M. 2001. *Criteria and Indicator-Based Self Monitoring in Community Forest Management in Eastern Nepal*. CIFOR Workshop Report, Bogor, Indonesia.
- Tiani A.M., Nguiebouri J. and Diaw C. 2004. Les Critères et Indicateurs simples pour la gestion locale des forêts : outil ambivalent. In Diaw M.C, Oyono P.R. and Prabhu R. (eds.) « *In Search for Common grounds. Adaptation, Collaboration and Equity in Local Forest Policies and Management in Cameroon* », CIFOR-ACM, Bogor, Indonesia, (in press).
- Wollenberg E., with Buck D. and L. 2000. *Anticipating change: Scenarios as tool for adaptive forest management. A Guide*. CIFOR, Bogor, Indonesia.
- Wollenberg E., Edmunds D., Buck L., Fox J. and Brodt S. 2001 (eds). *Social learning in Community forests*. Center for International Forestry Research, Bogor, Indonesia.

