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Research Article

Participatory Forest Management in Burkina Faso: Perceptions of Local Populations in the Cassou Managed Forest

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Abstract

In recent decades, the participation of local populations has become an imperative and a solution in forest management. Mystified and idealized, the participatory approach is seen as the key to sustainable management of this resource. This approach was adopted in Burkina Faso in the mid-1980s, leading to the establishment of the Forest Management Sites (FMS or CAF in french), administrative and technical structures for sustainable forest management involving local populations. However, the area of managed forests has continued to decline at an alarming rate. In such a context, we are tempted to ask whether there really is participation in systems described as participatory forest management, and if the populations have appropriated the approach. This study, carried out among the local populations of Cassou forest management site, attempts to answer these questions. Its aim was to gather local people's perceptions on their involvement in the forest management. To achieve the study's objective, eight (8) focus groups with men and women were organized during July and August 2022 in the villages of Cassou, Vrassan, Kou and Dao. The study analyzed local people's perceptions of the following scales of participation: "*consultation, involvement, information sharing, collaboration, decision-making and sharing of economic benefits*". The data analysis using Nvivo 21 software showed that local people felt 100% involved only in sharing economic benefits, while the level of participation on the other scales was barely 20%. These results show the low level of participation of local people in the forests management. The decision-makers therefore need to work towards genuine involvement of local populations in the management of these areas, so that they see them as part of the community heritage to be defended. The socio-political situation in Burkina Faso today proves that this is all the more important given that, in addition to the environmental stakes, forests represent a national security issue.

Keywords

Participatory Approach, Managed Forest, Cassou, Burkina Faso

1. Introduction

"Participatory management is an answer, a solution to management problems". This is what Morand [17] said in his dissertation: *«Analysis of a case study in the implementation of participative management in schools ».* According to him, the emergence of the concept of participatory management in the sphere of development followed the failure of centralized or dirigiste management policies implemented in most countries since the end of the Second World War. We are certainly not going to focus on what we mean by mismanagement, but we will concentrate on the concept of participation and, above all, its application and implications for forest management.

The concept of participation is mobilized in economic, sociological and anthropological disciplines to qualify and explain not only the behavior and relationships of actors in the implementation of societal development strategies in general, but also the results or outcomes of these strategies. The diversity of settings in which participatory management is used, and the definitions and dimensions attributed to it, make, according to Daou & al [7], "polysemic" the concept of participatory approach, and its application to forest management remains nuanced depending on the context and the authors who implement it. It is a concept that has enjoyed a very wide audience in natural resource management in sub-Saharan Africa. The analyses of participative management have mostly associated it with the advent of political democratization, with all its attendant social and economic aspects. For this reason, Mormont and al. [18] consider participation to be an indispensable component of sustainable development. The literature on participation in forest management in sub-Saharan Africa is abundant and diverse. For the purposes of this research, we have focused mainly on papers written from the 1980s onwards, a period when the use of the word "participation" in the literature rose dramatically.

According to the literature, this approach has a number of advantages that give it credibility in sustainable forest management. Institutionally, the architecture of the participatory approach fits into a political perspective aimed at decentralization and the practical, active participation of local populations in the management of their forests [13]. In environmental terms, it appears to be an effective solution to the tragedy of commons [9], since it reduces the effects of misuse or abuse of forests on the one hand, and free-rider behaviour (individuals who do not respect collectively established rules) on the other, thanks to the existence of possible sanctions [22]. In economic terms, not only is management organization based on the equitable distribution of resources, but also part of the economic benefits is generally devoted to compensating for the social costs generated by resource exploitation. However, for another category of authors, a mixed view seems to dominate on the contributions in terms of the changes hoped for in the daily lives of the populations targeted within the framework of participatory approaches, in forest management in particular. This observation raises a series of questions about the perceptions of the "participatory tool" by categories of stakeholders who, according to Poissonnet and Lescuyer [19] are guided by the common objective of sustainable forest management, but whose interests sometimes diverge.

Implemented in Burkina Faso in the early 1980s, the CAF participatory model is based on the involvement of local populations in forest management. While it has achieved ecological and economic results [4], a study of the effectiveness of the model's network of stakeholders [5], has shown that the model has not yet reached its stabilization phase, enabling effectively sustainable management of the natural resource, as stakeholder involvement remains problematic.

This is why we wanted to assess the level of participation of local populations in Cassou's Forest Management Site (FMS or CAF: Chantier d'Aménagement Forestier in french), in the Centre-west of Burkina Faso.

Thus, our research is somewhat exploratory and original in that it attempts to measure the intensity of participation across the full range of scales of involvement of local populations, based on their apprehensions regarding criteria for participation in the management of the forest in their terroir over the last few decades.

In this article, first, we will attempt to give some assertions encountered in the literature on the concept of participation. Secondly, we will give an overview of the CAF model. Then, we will present our study methodology, followed by the results of our research, and finally we will give some elements of analysis and discussion of these results.

2. Theoretical Elements of the Research

2.1. Participation: Between Idealization and Illusion

According to Alexei [1], the concept of participation is one that theoretically lacks a consensual definition. In practice, too, the results have rarely lived up to the expectations of the beneficiary populations.

Indeed, since the emergence of the concept, all sensibilities, from international development organizations and development specialists to researchers in all fields of the human and social sciences, have been unanimous about the importance of people's participation in the development of human societies in the broadest sense of the term. For example, according to Primo [20], participation is seen as a determining factor in the success or failure of community development projects. For Dumas [8], participation of local people means empowering and involving them in their own development. According to him, "*participation would enable people to identify their legitimate needs, to satisfy them as a matter of priority, and also to mobilize available resources and allocate the services or*

products most likely to satisfy these needs". For Bresson [6], participation is used in a variety ways, but beyond this, the essential question that underpins the legitimacy of the concept of participation is power-sharing, i.e. quite simply "how to implement the democratic ideal". However, Lulle [16] expresses a number of reservations at this level, as he believes that some participatory experiments are short-term and not very institutionalized, and are often implemented to meet specific, momentary needs. In such cases, mobilization ceases as soon as the demand is satisfied. Lebovics [15], for his part, points out that many authors believe that projects resulting from participatory processes are viable in the long term, even if this requires the beneficiary communities to be trained in order to sustain the achievements. In fact, on this positive approach, it should be noted that the theoretical characteristics of participation (consultation, involvement, training, etc.) are considered to be the key predispositions or factors that can lead to successful implementation. However, experience has shown that there are contrasts between the positive rhetoric of participation and the actual results on the application environments [16]. This situation raises the question of whether the capacities of the participatory approach, or at least its implementation, can continue to be the bedrock of grassroots development, hence the skepticism expressed towards the issue of participation. But for these authors, the participatory approach has been so mystified that it has become difficult for its advocates to face up to the fact that it has many shortcomings. For example, Primo [20], in his study of people's participation in community development projects implemented by non-governmental organizations (NGOs) in Haiti, and in an attempt to answer the question relating to the nature and function of the participatory approach in the implementation of community development projects in general, wonders whether the participatory approach was not simply fulfilling a function of legitimizing the project to the community with a view to guaranteeing its smooth running. Indeed, based on an empirical study, he shows that the method as implemented is a means of enabling the project to achieve objectives already set outside the population.

In the field of participatory forest management, particularly in Africa, most of the texts we have reviewed dealing with evaluations of these experiences show unsatisfactory results. This grey literature identifies numerous obstacles and shortcomings of the participatory model. In the context of a critical reading of participation, the studies of Daou & al, and Ballet [7, 3] are very instructive in this sense. According to Daou & al. [7], the failure of the participatory approach in forest management in Cameroon is clear. Based on a cross-sectional and comparative literature review of five participatory mechanisms (*annual community forest rent, area rent, community forest, community-managed hunting area, integrated conservation and development activities*), these authors explain the reasons of the participatory forest management approach failure in Central Africa, the continent's forest heartland. In their view, development actions,

and more specifically those relating to forest management, seem to have great difficulty in breaking away from certain structural and political constructs, most of which have their roots in the governance schemes put in place since the colonial period. Thus, they note that participatory management is part of a development decentralization dynamic in which local elites (often government clerks) become the key interlocutors and manage development under a top-down [1] governance favoring patronage relationships, which is an obstacle to local populations real participation in the management of their forest resources. Even if Daou & al. [7] do not invalidate the participatory approach in natural resource management, they virulently call of into question the practice. For them, the implementation is "anti-participatory" and far from the egalitarian and virtuous intentions and ambitions of the participatory approach. They think that in this model of forest management, certain faults such as corruption, embezzlement, clientelism, etc., are widespread. In the same vein, Laurent [14], discussing the implementation of the participatory approach in forest management in Burkina Faso, talks about "façade participation" or "truncated" implementation of the approach. This is to be understood as meaning that local populations participate in the action without really being involved. However, Camille's perception of Burkina Faso contrasts somewhat with that of Ringuette [21], who believes that the context of Burkina Faso is favorable to the application of participatory management. For Ballet [2], in his article "*Common management of natural resources, a critical perspective*", while not questioning the relevance of the participatory approach, warns against certain abusive uses which do not take the necessary precautions for implementation. According to him, participatory management brings together actors (individuals, groups or networks) who sometimes embody values that are not all conducive to genuine collective resource management, and where some actors hold more power and influence than others. In these conditions, marginalized groups unable to assert themselves or feeling excluded from the process may, according to Ballet [2], adopt "free rider" behavior, which sometimes leads to looting, or even setting forest fires in retaliation for their exclusion. In fact, Ballet [2] develops a set of arguments to show the impertinence of making the participatory management perspective a miracle model applicable anywhere and under any circumstances. Finally, Ballet notes the importance of dialogue in achieving a convergence of interests, to agree on a minimum of things, necessary for successful community management.

The participatory approach has thus come in for a great deal of criticism from many social scientists, and even more so when applied to natural resource management. Indeed, shortcomings have been noted on all sides, depending on the field in which it is applied. But, it should be noted, however, that these various positions on the approach do not invalidate it or call it totally into question, even if most of them seem to
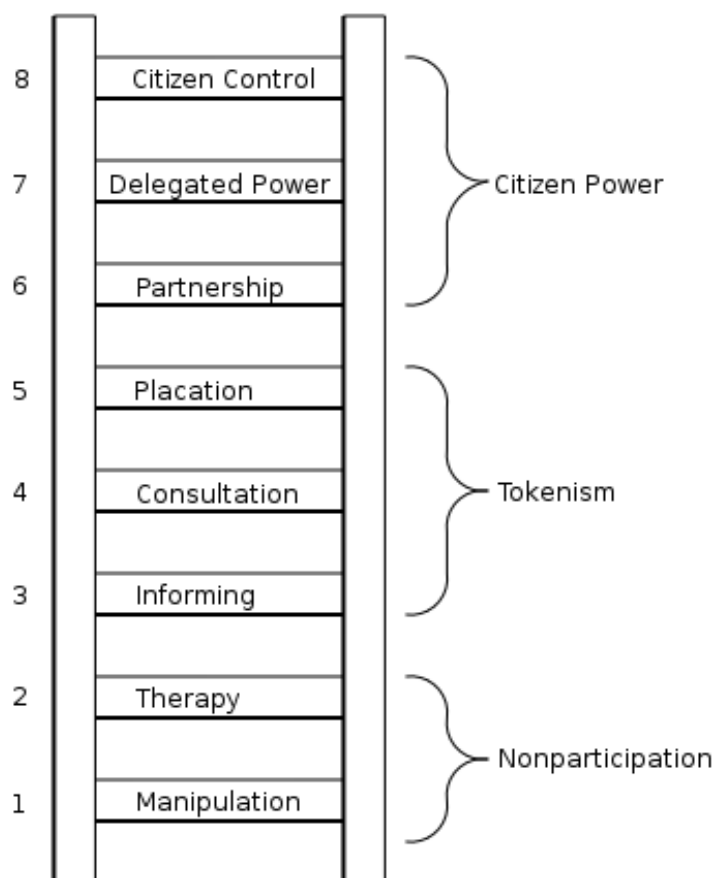
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1 The initiative for the decision comes from "high", i.e. from central government.

highlight cases of relative failure. Participation has thus become a scientific concept, and one that is constantly being questioned. And one of the questions that arises when analyzing participation is related to the level, scale, degree or form of participation.

2.2. Multiple Forms of Participation

In the literature, different levels of participation are described by practitioners and theoreticians of participatory development. Institutions and researchers have represented participation in some form of levels or scales of participation, which distinguish between degrees of involvement and responsibility of populations in a participatory process. One of the best-known scales of participation is that proposed by the American urban planner and sociologist Sherry Arnstein (1969, [10]) in which she distinguishes eight (8) levels (see figure 1) of citizen participation in projects that concern them.

Source: Hourard, ([10], P. 8)

Figure 1. The eight levels of citizen participation according to Sherry Arnstein (1969).

On this scale, the first two levels (manipulation and therapy) are considered, according to Arnstein, as an absence of participation, with the intervention of decision-makers aimed at converting (or "conscientizing", as it is sometimes called in the context of environmental conservation) or "treating" the citizen in order to convince him of the validity of the decisions that are going to be imposed to him. the following three levels (information, consultation and appeasement) correspond, according to Arnstein, to the *tokenism*, in which citizens can be informed and express their opinions, but remain excluded from decision-making. Ultimately, the author recognizes participation only in the last three degrees of this scale, which give citizens decision-making power. The distinction between these last three levels is: for "partnership", in the ability of citizens to negotiate and share responsibility for decisions; for "delegation of power", in giving citizens a central role in decision-making (committees on which they have a majority); finally, for "citizen control", in full participation in management, notably through access to sources of financing.

Although Arnstein's scale has been used in research into urban planning and housing in USA, it has become a reference point and theoretical basis for research into issues of citizen participation. Like all scientific work, Arnstein's scale has been criticized in certain aspects, but its merit continues to be recognized in research on participation.

For example, the International Association for Public Participation (IAP2), a group of participation professionals, has developed a scale called the "Spectrum of public participa-

tion" to help groups define the role of the public in any participation process. Like Arnstein's scales, the IAP2 [11] Spectrum defines the goals and degree of engagement with the public, and includes five (5) levels: to Inform – to Consult – to Implicate – to Collaborate- to Delegate (See Table 1).

Table 1. Summary of the IAP2 Participation Spectrum.

	to Inform	to Consult	to Involve	to Collaborate	to Delegate
Aim of public participation	Provide the public with all the information necessary, objective, help them to understand the problem, the planned options and solutions	Get feedback on studies, options and decisions to be made.	Working together with the public to ensure that their concerns and expectations are understood and integrated in the decision-making process	Seek partnership with the public at all stages of the decision-making process, including developing options and identifying the preferred solution	Entrust to the public final decision-making
Commitment towards the public	We will keep you update	We'll keep you informed, respect your concerns and expectations and we'll let you know when we've taken your input in the chosen solution	We will work with you to ensure that your concerns and expectations are taken into account in the choices made. We'll let you know when your input has been taken into account your contribution in the choice of solution	We look forward your advice and innovative ideas to find solutions and will as much as possible in the choice of the chosen solution. selected	We will implement your decision

Source: https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/Spectrum_8.5x11_Print.pdf

In its formal considerations, participation in most cases includes the five (5) levels presented in the IAP2 Spectrum. They are also a reference for international institutions such as the Organisation for Economic Co-operation and Development (OECD) and Food and Agriculture Organization (FAO), which advocate participation in their development projects. In one way or another, and in most areas of development, participation is synonymous with taking into account at least two or three levels of the Spectrum. Even in the field of forest management, although with some nuances, there is really no dividing line with the participatory forms presented above.

2.3. Participation in Forest Management

Nevertheless, other perceptions of forms of participation can be found in the literature, even though they are not necessarily far removed from those presented by Arnstein and in the IAP2 Spectrum. This is the case, for example, of Froger & al (cited by Ballet [2]), who distinguish, in the field of forest management, three forms of participation corresponding to three levels of population involvement: passive participation, active participation and responsible participation.

According to the authors, passive participation is characterized solely by a process of consultation with the population, in the form of a collection of opinions on the state of the situation and, where appropriate, the actions to be taken. It is based on a vertical information and decision-making structure, and does not guarantee that the opinions expressed by local populations will be taken into account. In fact, consultation consists in convincing the population of the merits of the planned action. As for active participation, it takes the degree of participation a step further, and presupposes that representatives of the local population are genuinely involved in project design and implementation. But here too, according to Ballet [2], the question arises as to the nature of the local representatives and how representative they really are. Since these representatives are often drawn from the socio-political structure, they are not elected from within the population to designate project leaders. In this sense, if participation is active in form, it is hardly so in substance. Finally, in the case of responsible participation, local actors benefit from a transfer of authority in the management of the resources. Projects are then built on a partnership between the government and local populations, or more precisely their representatives. This partnership is based on trust in the communities' management capabilities. At this level, decentralization is assumed to be sufficiently advanced. Even at this stage, the author feels that we are still a long way from a democratic process, since no guarantee is given as to how representative power will be allocated.

Based on these latter aspects, we can establish correspondences between Arnstein's scales and the forms presented by Froger & al (cited by Ballet [2]) (see Table 2).

Table 2. Correspondence between Arnstein's citizen participation and the forest management participation of Froger & al.

Sherry Arnstein's citizen participation		Participation in forest management according to Froger & al.
Manipulation	Non-participation	Passive participation
Th érapy		
Informing		
Consultation	Tokenisme	Active Participation
Placation		
Patnership		
Delegated power	Citizen Power	Responsible participation
Citizen control		

It is quite impossible to exhaust all the different postures in the literature on the forms or levels of participation (citizen or forest management). Nevertheless, this overview shows that participatory approaches can take different forms depending on the people or institutions implementing them, their objectives, the means available and the context. It therefore appears difficult, if not impossible, to convince ourselves of the existence of a standard form of participation to be presented or adopted as a solution to potential socio-economics and environmental problems.

2.4. Cassou Forest Management Site (FMS/CAF): A Managed Forest

The Cassou forest management site was created in 1986, following the implementation of the "Management and exploitation of forests to supply the city of Ouagadougou with firewood" project (Project PNUD/FAO/BKF/85/011), financed by the UNDP and with the involvement of the FAO [12]. The implementation of this project involved participatory and rational forest management, based on the cutting and marketing of energy wood. The implementation of this project consisted in a participative and rational management of forests based on the cutting and marketing of energy wood. This new management approach should contribute to the rational and sustainable exploitation of forest resources with the supervision of the forestry administration and its partners. Local village communities, organized into Forest Management Groups (FMG) are also involved and participate. The economic spin-offs are shared between the various actors and contribute to local and national economic development. The active and voluntary participation of local communities is therefore the key of sustainable forest preservation. The local population is thus de facto involved in the administrative, economic and ecological management of this natural asset. These activities and this approach make this area what is known as a managed forest, with participation being the spearhead of such a management model. It is this participation factor that our research seeks to evaluate.

3. Methodological Approach

3.1. Study Villages

The work involved four (4) villages bordering the Cassou managed forest, Ziro province in the Centre-west region. The Cassou protected forest covers an area of 29,515 hectares, and its management and exploitation involves twelve (12) villages in three (3) municipalities: Cassou, Bakata and Gao. We chose the villages for convenience and also for ease of access, as the work took place during the rainy season (July, August 2022). The villages were chosen so as to have one village for each commune, but Cassou was chosen as the site's technical headquarters. This region was also chosen because it is one of the country's top three (3) forest areas. It is also the region with the highest number of CAFs in the country (7 out of 26).

The figure above shows some of the geographical features of the Cassou CAF and the location of the study villages.
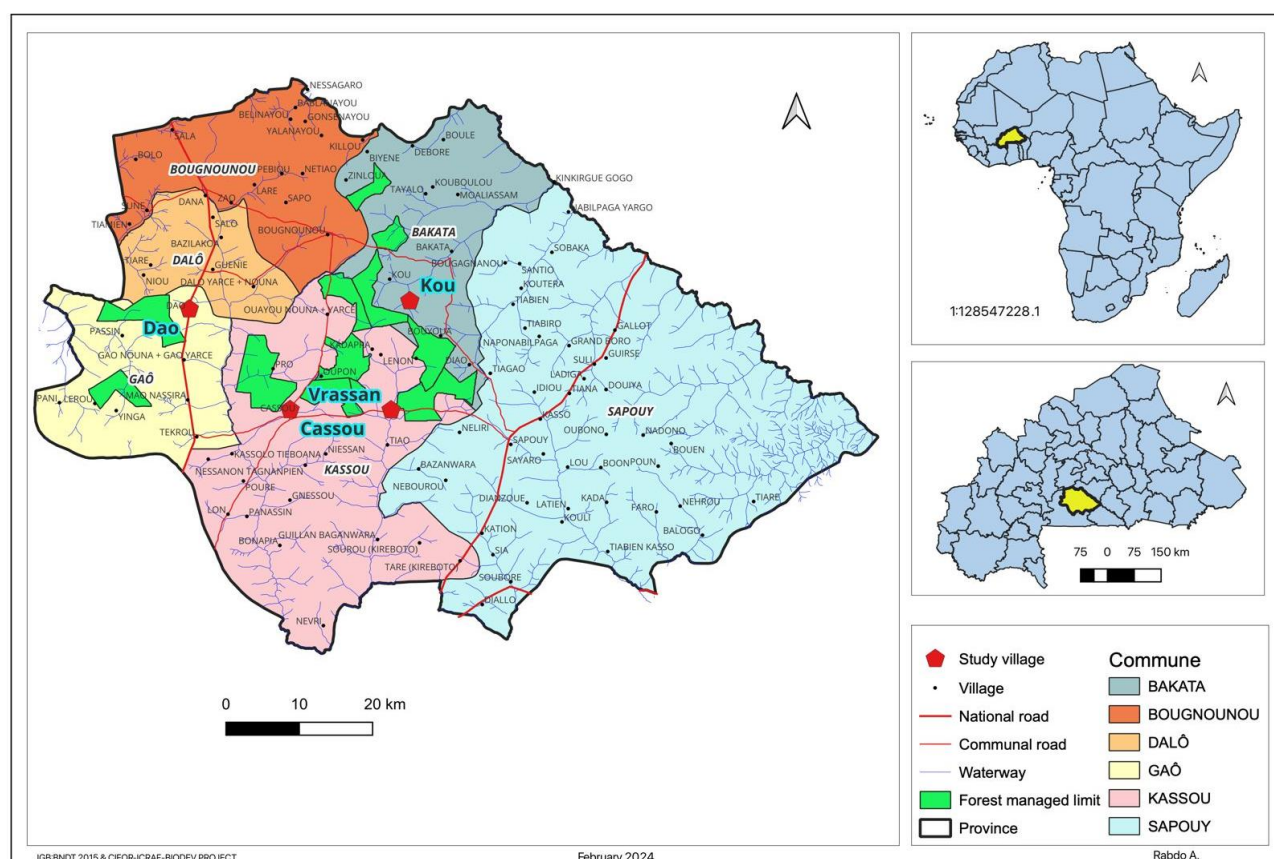
Figure 2. Map of the Cassou managed forest and the study villages.

3.2. The Data Collected

The data on people's perceptions of their participation in CAF management were collected through men and women focus groups in each of the four (4) villages, i.e. a total of eight (8) focus groups. Table 3 below provides information on the focus groups used in our research.

Table 3. Summary of focus group interview periods.

Date	focus groups	Interview duration
08/01/2022	Focus women Cassou	10h 30 mn-11h 30 am
08/01/2022	Focus women Vrassan	8 h – 9h 45 am
07/31/2022	Focus women Dao	16h-17h 42 pm

Date	focus groups	Interview duration
07/31/2022	Focus men Dao	16h-17h30 pm
07/30/2022	Focus women Kou	16h30-18h pm
07/30/2022	Focus men Kou	16h30-18h pm
07/29/2022	Focus men Vrassan	7h- 8h30 am
07/31/2022	Focus men Cassou	16h40-18h pm

The aim of the focus group interviews was to assess participation with the local population at the following levels: Consultation (of the population) - Involvement – Information sharing - Decision-making (Empower) – Equity; levels of participation taken from Hurard [10] and IAP2 (see Table 4).

Table 4. Levels of participation considered in this research and their variants.

Participation dimension	Description of proposed variants
Consulting	We were at the origin of the design of the CAF model, the set-up of the project, and its implementation.
	We are consulted regularly or through our structures to give our opinion on the site management.

Participation dimension	Description of proposed variants
Involvement	Our points of view count a great deal when it comes to decisions making about managing the forest.
	We feel we are an important part in the management of the forest site process
	We and our structures have a great deal of responsibility in decision-making on the management of the Forest Management Site (FMS)
	We play an active role in decision-making concerning site management
	We were at the origin of the design of the CAF model, the set-up of the project, and its implementation.
	CAF management structures (Technical Management, Control Committees) work closely with our village structures (FMGs) to take into account our concerns and expectations.
	We receive reports on the decisions taken by the Management structures
Information sharing	Our expectations and concerns are taken into account when decisions are made on site management.
	We are kept informed of all problems, choices and solutions, as well as the overall management situation at the Forest Management Site.
	We are informed about the use of the financial resources generated by the CAF every year.
Decision-making	The CAF model is based on proposals from our community
	The final decision on the site management comes to us through our FMG.
Equity	The benefits Sharing in the forest management is equitable and is right for us

The main question asked to local people is whether or not they agree with the claim that they participate in the management of the CAF.

Thus, interviewees should give their opinion on these statements about scales of participation in the forest management. Suggested answers are as follows: *Strongly disagree - Disagree – Not completely agree - Agree - Strongly agree.*

3.3. Data Analysis

The data collected was entered in Excel and then organized in Word into question and answer files according to the study's objectives. Based on the themes and sub-themes to be addressed in the research, nodes were created in Nvivo 21 (a qualitative data analysis software) and the responses were encoded. After encoding, the files were exported to Word to be processed in such a way as to retain only the answers relating to each theme or sub-theme. These files were then brought back to Nvivo for further processing to obtain the desired results in the form of a cloud of the most frequent words in the answers or simple frequencies. These results are then imported into Excel to create graphical representations. To make it easier to read the word clouds on the answers, we have combined the words of certain answers expression, as illustrated below:

Stronglydisagree = Strongly disagree;
Notcompletelyagree = Not completely agree;
Stronglyagree = Strongly agree.

4. Study Results

The Nvivo 21 software enables us to obtain results in the form of word clouds of the most frequent answers, from which the graphical representations are constructed.

4.1. Perceptions of Local Communities Consulting in the CAF Management

The figure 3 below shows the results of the interviewed groups answers on the consulting criterion.

***Figure 3.** Word cloud about local populations consulting.*

The words cloud shows that the most frequent answer of people's perceptions about consultation is "*strongly disagree*". with responses proportion of 40% (See the summary in figure 8). In other words, almost 81% of answers show that people are not consulted in the CAF management.

4.2. Perceptions on the Mechanism of Involving Local Populations

Results on the local populations involvement in CAF management are presented in the words cloud (figure 4) below.

Figure 4. Word cloud about local populations involving.

The results show that local populations are only marginally involved in CAF management because the words cloud show that the most frequent answer is «*Strongly desagree*». The figure 8 shows the most frequency answers. We can see overall 48% of desagree (40% for *Strongly desagree* and 8% for *desagree*), 37% for *not completely agree and* 15% of answer agreeing.

4.3. Perceptions on Information Sharing with Local Populations

The results of local people's perceptions of information sharing in relation to CAF management activities are presented in the word cloud below.

Figure 5. Word cloud about information sharing.

The word cloud shows that the most frequent response to people's perceptions on the level of information sharing is "strongly disagree" (figure 5), with 50% response rate according to the graphical representation (figure 8). Ultimately, people feel that information on the site management is not shared with them.

4.4. Perceptions of Local Populations on Decision-Making

Results on the degree of participation of local populations in decision-making are presented in the figures 6 and 8 (summarize of most frequent answers).

Figure 6. Word cloud about decision-making.

The figure shows that the most frequent answer of local residents' perceptions of their involvement in decision-making concerning CAF management is "strongly disagree" (figure 6), with 75% answer rate (figure 8). Overall, the interviewees expressed their non-participation in decision-making.

4.5. Perceptions on Equity Criteria in the Distribution of Financial Resources in the CAF Management

The results of local people's perceptions of fairness in the distribution of financial resources from the CAF are presented in the figure below.

Figure 7. Word cloud about equity on financial resources sharing.

The results show that all the groups interviewed are agree that the distribution of financial resources derived from the management of the forest is equitable and suits them (100 %° agree). That means that, according to the people living near the managed forest, the distribution of economic profits is judged to be equitable.

4.6. Perceptions of the Local Population in All the Participation Levels

The data analysis software Nvivo 21, gives us the percentage of the most frequent answers about the participation levels (Consulting, Involvment, Information-sharing, Decision-making and Equity) of local populations in the CAF management. The figure 8 summarizes these proportions.
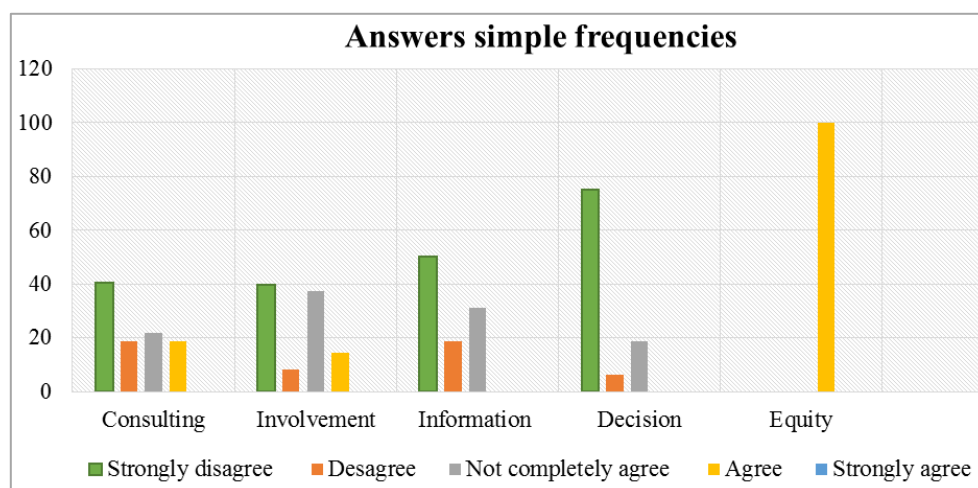
Figure 8. Graphical representation of the answers simple frequencies.

The figure shows that the most frequent answer of local populations is *«Strongly desagree»* in the participation levels that are Consulting, Involvement, Information sharing and Decision-making. The degree where they are agreeing, is the Equity in the CAF resources sharing.

4.7. Overall Participation Level

The overall participation level gives the perceptions of all the groups in the five degrees of participation considered in this study. The results are presented in the figures below.

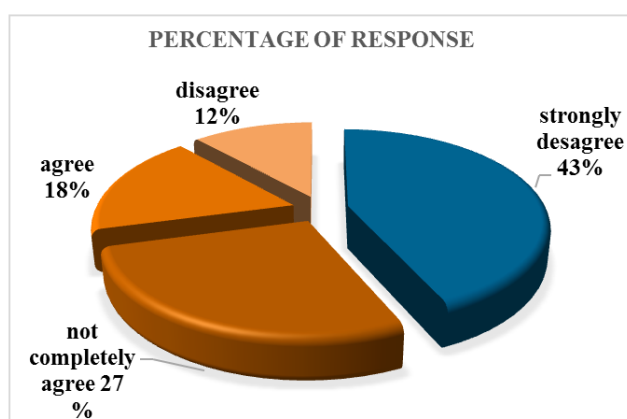*Figure 9. Word cloud of the answers on global participation.*

Figure 10. Graphical representation of the answers on global participation.

According to the figures, we can see that the most frequent answer of local populations perceptions of their global participation in CAF management is "strongly disagree" (figure 9), with a 43% answer rate (figure 10). We can say that the interviewees expressed their non-participation in the CAF management, with over 82% response rate.

5. Analysis and Discussion of the Results: Always Participation But No Real Participation

This research has enabled us to assess the intensity of participation at the different scales of local populations involvement in the forest management. The fundamental position that emerges is that the forest management system is participatory in color, but without real participation of local populations.

In fact, we note that the most frequent responses to the question of the intensity of riparian population participation on the different scales of involvement, whatever the angle considered, show that people generally disagree with the statement: "the participation of riparian populations in the management of the CAF is proven".

The most frequent response from the population on the evaluation of the intensity of participation in the management of the forest management worksite is "*strongly disagree*". The only mechanism in which people affirm their participation is in the sharing of economic benefits. This can certainly be explained by the fact that these populations observe that 50% of the revenue from the sale of wood goes to the loggers, and this is deemed satisfactory. According to them, this income has enabled them to improve their economic conditions, by buying means of transport, taking care of their health, financing their agricultural and livestock activities, and also their children's schooling. Even if the people agree on the acceptable distribution of economic benefits, they question the

management of other categories funds, such as the Forestry Development Fund and the Village Investment Fund set aside to finance village development, for which they say, do not have any information.

When it comes to consultation, involvement, information and decision-making mechanisms, the most frequent answer from local people's perceptions is "strongly disagree", as the results indicate. If we consider the consultation mechanism, it is analyzed in our research with variants taking into account the entire mechanism of the planning phase and the implementation phase of the development project. As a reminder, these variants of the consultation mechanism are as follow: «(i) *we were at the start of the design of the CAF model, of the project set-up, and of its implementation*, (ii) *we are consulted regularly or through our structures to give our opinion about the CAF management*, (iii), *our points of view count a lot in decision-making concerning the forest management and* (iv), *we feel our importance in the management processes of the CAF »*. It was on these variants that the groups interviewed were asked to give their perceptions. The results show that the local populations do not totally agree with the statement that they are consulted in the management of their local forest. Indeed, in their responses on perceptions, a response rate of over 80% illustrates their overall disagreement with the statement "being consulted in the management of the CAF". Even if the local population was consulted at the outset during the planning phase, this was to show them the need to accept the model as a prerequisite for the sustainable conservation of their forest, and to undertake the preliminary biophysical and socio-economic studies required to implement the project in the best possible conditions. According to Arnstein's (cited by Hurard [10]) view, this is a form of non-participation or passive participation (Froger & al. [2]), where local people are simply called upon to provide project technicians with socio-politico-economic information about their terroir. But they were not at the outset of the project design and set-up. In other words, the project did not originate, as Dumas [8] and Primo [20] assert, from a general awareness of the needs felt by all inhabitants. It's a model whose orientations seemed to have already been pre-defined in the offices of technical and financial partners and state technicians, to be presented to local population, and which Primo describes in these terms: "*the first reflections were carried out outside the community, and this without any form of community participation*" [20]. Local people were not at all central to the design of the model. It was designed and then presented to them simply for their approval.

Furthermore, the project implementation reference documents, such as the Development and Management Plan, mention that land chiefs, village chiefs and notables were consulted during the planning phase; does this mean that the populations did not feel fully involved from the start of the process? Was the legitimacy of the customary representatives (chiefs, notables) questioned by the local population from the start of the process? The temptation is to answer in the affirmative. Indeed, African customs and traditions recognize the impossibility for village populations, in most cases, to contradict the position of their customary chiefs, even if this position is not always in the interest of their subjects or does not win their assent. That's why Ballet [2], is questioning the impact of social capital on the success of participatory approaches in forest management. In his view, community structuring based on several social categories and individual power strategies within the community are not conducive to a good resource management. The anthropologist Zougouri [23] develops this posture in her thesis " *Behind the development showcase: forest management and local power in Burkina Faso* ". According to her, villagers find it difficult to identify themselves with their traditional chiefs, who are in charge of the Forest Management Groups (FMGs), and do not feel involved in the CAF system, so they do not respect the rules laid down for the rational exploitation of the forest.

We can make the same analysis concerning the mechanism for sharing information on the CAF management. Participants were questioned on the following variants: "*We are informed on everything concerning problems, choices and solutions, as well as on the overall situation of the site's management*" and "*We are informed on the use of the financial resources generated by the site each year*". As the results show, none of the responses is totally affirmative when it comes to sharing information about the forest management. In fact, the mechanism for sharing information in some way raises the question of accountability with regard to this information. In its Spectrum, IAP2 [11] notes the importance of information sharing in a participatory project, which is to provide the public, in this case the local population, with "all the necessary and objective information to help them understand the problem, the options and the solutions envisaged". Like the mechanisms for consultation, involvement and information sharing, the results of perceptions on the decision-making mechanism are very mixed, illustrating the low level of participation of local populations.

Indeed, the results of this study show that participation will never cease to be an ideal, and that even in forest management, its adoption is not necessarily a guarantee of achieving the balance between forest conservation and its use to create economic wealth. These findings are in line with numerous studies assessing participation in tropical forest management [7, 3, 14, 19], which conclude that participation is a façade participation or anti-participation. These participatory models, implemented in a biased way, often contribute to the disorganization of people's social structures when it comes to conserving natural resources. So, according to the local populations, "*Although we recognize the merit of the CAF's participatory model in protecting certain parts of the forest, it is the one that has above all contributed to monetizing the tree, in other words showing local people that the forest is some money, to the detriment of these social values. This state of mind has contributed to accelerating the forest degradation*". Faced with such a sentiment, the question arises as to whether the design and implementation of the CAF model is the result

of a process of collective awareness of the need to manage the forest according to such a model. If the local population has not been involved in the initial decision to design the model, or in successive decisions during the operational phase, there is a strong likelihood that the model will not prosper.

In short, the model gives the impression of having been conceived and designed by the authorities and their partners for the local populations, which is not far removed from top-down governance, contrary to the methods used in participatory projects and one of the major weaknesses identified by many research studies on participatory approaches. We note that meetings were indeed held downstream of the development work, with the aim of explaining to the local population the merits of the model that will govern forest management with a view to its sustainable preservation, and make them aware of the need to manage the resource according to the CAF model. This is a form of participation that remains in the realm of non-participation (therapy and manipulation) and passive participation (tokenism), without any real consideration for the aspirations and suggestions of local populations.

6. Conclusion

In this research, the objective was to measure the intensity of local people's participation at different levels of involvement in the management of their local managed forest. Our assessment focused on the key levels of participation generally presented in the literature: consultation, involvement, information-sharing, decision-making and equity in the economic benefits sharing.

The results showed that the most frequent answer to perceptions of participation revealed a rate of around 80% of "Disagree, Strongly disagree and Not completely agree", illustrating a mixed level of participation in the forest management.

The different levels of participation seem so interwoven and interdependent so that one wonders whether there can be any success in a participatory process without consultation or involvement or information sharing or collegial decision-making or equitable distribution of benefits. Participation therefore appears as a whole, a system of gears made up of different levels of participation (from passive participation to the empowerment). Thus, in a participatory process, when the project design is not the result of a decision based on collective awareness - which is generally the case in our regions - those in charge of the project (the State and its partners) must encourage the evolution of the process from the so-called passive participation phase to the effective exercise of power, by strengthening the technical and operational capacities of local actors. Every means must be made available to these populations to achieve this. Furthermore, the practical tendency of participatory projects to approach populations with the preconceived idea of saying "this is how you should participate", rather than asking them "how can you participate?" or "what participatory actions do you propose in the system", needs to be reviewed. This is all the more important as they have some choices to

make according to their aspirations and needs, while always considering the forest as their property. In this case, the local people learn from the government technicians and partners, and vice versa. This is why Bennett and Howlett (cited by Mormont M. and al [18]) in their article "*Participation as a component of sustainable development: four case studies*", argue that participation is "*a way of walking to find out where we can go from here, a learning model rather than a 'decision' model*". This is important for success in forest management, given the interests and stakes this resource represents for the local and national economy, as well as for the global environment.

Success in participative practice has become an utopian dream, as failures are revealed, and we must have the courage to say so, as our forests continue to erode. As a result, it becomes difficult to turn things around, because a failure in natural resource management or a dysfunction in the management system is inevitably accompanied by disorder in the exploitation of the resource and a reduction in the forest area, which is sometimes difficult to renew. What's more, today, forest resource management is also a national security issue, since several information maintain that these so-called protected forest areas have become refuge zones for armed terrorist groups. This situation further highlights the need for strong involvement on the part of local populations, who see these areas as part of the community's heritage to be defended. If this is not the case, participation will always remain a façade of participation, with a confiscatory approach to forest management for these local populations. Today, we need to think about defining a new approach of forest management that gives greater responsibility to local populations and takes into account the security factor in the country.

Abbreviations

FAO	Food and Agriculture Organization of United Nations
FMG	Forest Management Group
FMS	Forest Management Site
IAP2	International Association for Public Participation
NGO	Non-Governmental Organization
OECD	Organization for Economic Co-operation and Development
UNDP	United Nations Development Programm

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Author Contributions

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Visualization, Writing – original draft, Writing – review & editing

Compaoré Eveline: Conceptualization, Funding acquisition, Methodology, Resources, Software, Supervision, Validation, Visualization

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Conflicts of Interest

The authors declare no conflicts of interest.

References

[1] Alexei, J. 2006: «L'apparition de la notion de participation dans la pensée et le discours du développement » [*The emergence of the notion of participation in development thinking and discourse*]. Perspectives internationales et européennes, URL: https://halshs.archives-ouvertes.fr/halshs-03279524 18 pages.

[2] Ballet, J. 2007: La gestion en commun des ressources naturelles: une perspective critique [*Common management of natural resources: a critical perspective*], Développement durable et territoires Économie, géographie, politique, droit, sociologie, Varia (2004-2010), 18 pages. https://doi.org/10.4000/developpementdurable.3961

[3] Ballet, J. et al., 2009: La soutenabilité des ressources forestières en Afrique subsaharienne francophone: quels enjeux pour la gestion participative ? [*The sustainability of forest resources in French-speaking sub-Saharan Africa: what's at stake for participatory management?*]. De Boeck Supérieur, Mondes en développement, n°148, pages 31 à46. https://doi.org/10.3917/med.148.0031

[4] Birba, S. 2014: *Evaluation écologique et socio-économique des Chantiers d'Aménagement Forestier (CAF) au Burina Faso: Cas du CAF de Cassou*. [*Ecological and socio-economic evaluation of forest management sites (CAF) in Burkina Faso: the case of the Cassou CAF*] Mémoire de Master en Développement, Université Senghor D'Alexandrie/ Campus Ouaga II, 70p.

[5] Birba, S. et al., 2024: Innovation in Forest Management in Burkina Faso: Analyzing the Dynamics of the Actor-Network in Cassou. American Journal of Agriculture and Forestry. Vol. 12, No. 2, pp. 74-86 https://doi.org/10.11648/j.ajaf.20241202.13

[6] Bresson, M. 2014: «La participation, un concept constamment Rénventé: analyse sociologique des enjeux de son usage et de ses variations » [*Participation, a concept constantly reinvented: a sociological analysis of the issues surrounding its use and variations*], Socio-logos, Revue de l'association française de sociologie. 9 | 2014, https://doi.org/10.4000/socio-logos.2817

[7] Daou, V. J. et al., 2014, La gestion participative des forêts en Afrique centrale: Logique développementiste, gouvernance antiparticipative et stratégies d'acteurs, [*Participatory forest management in Central Africa: developmental logic, anti-participatory governance and stakeholder strategies*]. Revue d'ethnoécologie, 28 pages.

[8] Dumas, A. 1983: «Participation et projets de développement » [*Participation and development projects*]. In: Tiers-Monde., tome 24, n°95, pp. 513-536 https://doi.org/10.3406/tiers.1983.4306

[9] Hardin, G. 1968: The Tragedy of the Commons, Science New Series Vol. 162, No. 3859: pp. 1243-1248. https://doi.org/10.1126/science.162.3859.1243

[10] Hurard, M. 2011: La participation citoyenne au développement durable à l'échelle locale en Europe, Think Tank européen Pour la Solidarité, [*Citizen participation in local sustainable development in Europe, European Think Tank for Solidarity*] Collection Working paper. 25 pages.

[11] International Association for Public Participation, 2000: public participation spectrum, *https://iap2.org.au/resources/spectrum/*

[12] Kabore, C., 2005: Aménagement des forêts au sahel: Point de vingt années de pratiques au Burkina Faso, [*Forest management in the Sahel: Twenty years of practices in Burkina Faso*]. Ouagadougou. 142 pages.

[13] Korahiré, J., 2011: La faune sauvage dans la forêt classée et ranch de gibier de Nazinga. Quel modèle pour une gestion durable des ressources fauniques. Thèse unique. [*Wildlife in the classified forest and game ranch of Nazinga. A model for sustainable wildlife resource management. Unique thésis*], UFR/SEG, Université de Ouagadougou, 232p.

[14] Laurent M. C., 2011: *La gestion participative des forêts, une notion devenue multiscalaire et une application différenciée sur le terrain: le cas du Burkina Faso, [Participatory forest management, a concept that has become multiscalar and a differentiated application in the field: the case of Burkina Faso*]. Mémoire de recherche, Institut d'Etudes Politiques de Toulouse. 102 pages.

[15] Lebovics M. 2007: Analyse des apports et des contraintes du développement Participatif, [*Analysis of the benefits and constraints of participatory development*], De Boeck Supérieur | «Afrique contemporaine » n° 223-224 | pages 403 à 432. https://doi.org/10.3917/afco.223.0403

[16] Lulle T. 2002: A qui sert la gestion locale participative ? éléments de réflexion à partir d'une expérience à Bogotá (Colombie), [*What's the point of participatory local management? Considerations based on an experience in Bogotá (Colombia)*]. Presses de Sciences Po | «Autrepart », n°21 | pages 151 à168. https://doi.org/10.3917/autr.021.0151

[17] Morand M. 1981: *Analyse d'un cas d'implantation de la gestion participative en milieu scolaire*, Mémoire en vue de l'obtention de la Maitrise en Education, [*Analysis of a case study in the implementation of participative management in schools, Master's thesis in Education*]. Centre d'études universitaires dans l'ouest Quebecois. 246 pages.

[18] Mormont M. and al., 2006: La participation, composante du développement durable: quatre études de cas, [*Participation as a component of sustainable development: four case studies],* Vertigo, revue électronique en sciences de l'Environnement, L'Afrique face au développement durable Section courante. Volume 7 Numéro 2. 27 pages. https://doi.org/10.4000/vertigo.2346

[19] Poissonnet M. et Lescuyer G., 2005: Aménagement forestier et participation: quelles leçons tirer des forêts communales du Cameroun? *[Forest management and participation: what lessons can be learned from Cameroon's communal forests?]*, VertigO - la revue électronique en sciences de l'environnement, Volume 6 Numéro 2. https://doi.org/10.4000/vertigo.4290

[20] Primo O. 2017: Participation, développement communautaire et organisation non-gouvernementale. Mémoire, Université d'État d'Haïti, Faculté des sciences humaines, *[Participation, community development and non-governmental organizations. Master thesis, Haïti State University, Faculty of Human Sciences]* 146 pages.

[21] Ringuette, A. S-A. 2014. Gestion participative des ressources naturelle: analyse de son efficacité au Burkina Faso, *[Partici-* *patory management of natural resources: analysis of its effectiveness in Burkina Faso], Master thesis on Environment,* University of Sherbrooke, 114 pages.

[22] Yelkouni, M. 2005: La gestion communautaire: une alternative pour la forêt de Tiogo au Burkina Faso, *[Community management: an alternative for the Tiogo forest in Burkina Faso].* Armand colin | «revue d'économie régionale & urbaine» pp 557 à578 https://doi.org/10.3917/reru.054.0557

[23] Zougouri, S. 2008: Derrière la vitrine du développement: aménagement forestier et pouvoir local au Burkina Faso, *[Behind the development showcase: Forest management and local power in Burkina Faso].* PhD Thesis, Uppsala Universitet, Studies in Cultural Anthropology. 274 pages. https://doi.org/10.5771/0257-9774-2010-1-317