

## Role of participative communication on lake management in the Sahel: Case of Lake Bam in Burkina Faso

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### Abstract

In Burkina Faso, natural resources are often considered by people as a gift of God that has no limit. This is the case of Lake Bam, the largest lake in Burkina Faso, located in the Bam province. The lake plays an important role in the socio-economic activities the people who get the most for their existence. Indeed, green beans were produced there, making Burkina Faso the second African exporter of this product after Kenya. Fishing was also well developed there. However, we observe the shrinking of this natural water source because of siltation which is caused by agricultural activities and the adverse effects of climate change. The lake plays an important role in the socio-economic activities of the people who get the most for their existence. Therefore, to address this problem, measures to rehabilitate the lake have been taken, which will include the enhancement of the Lake spillway, the management of 500 ha for agriculture, the rehabilitation of 400 ha of existing cultivated areas. To support the implementation of the project it was agreed to involve communication processes, because communication is also a key challenge that helps address issues in social support for risk processes. The methodology used was based on semi-structured, individual and often focus groups discussion. The study concerned populations around Lake Bam, users of this lake, taking into account the diversity of activities that are undertaken there. It appears from this survey that people are aware of the problem but the way the project was introduced to them does not induce membership. Also, it emerges that another form of communication that integrates the participatory approach must be used to ensure better water resources management of Lake Bam.

**Keywords:** Lake Bam, siltation, participatory communication, rehabilitation, Territory, Burkina Faso

In many cosmogonic narratives and approaches in Africa, natural resources are seen as gifts from God or transcendental forces and often as inexhaustible. These resources include water, an essential element for life, especially in a Sahelian country like Burkina Faso. Besides its contribution to food and feed among other things, water is with manure (organic, inorganic) a determining factor in agricultural production. When we know that family agriculture represents over 80% of farms in Africa, we understand the need for better water resources management. Indeed, these farmers are the engine of the rural economy, and it is clear they appear in the forefront of the degradation of natural resources, including natural water points.

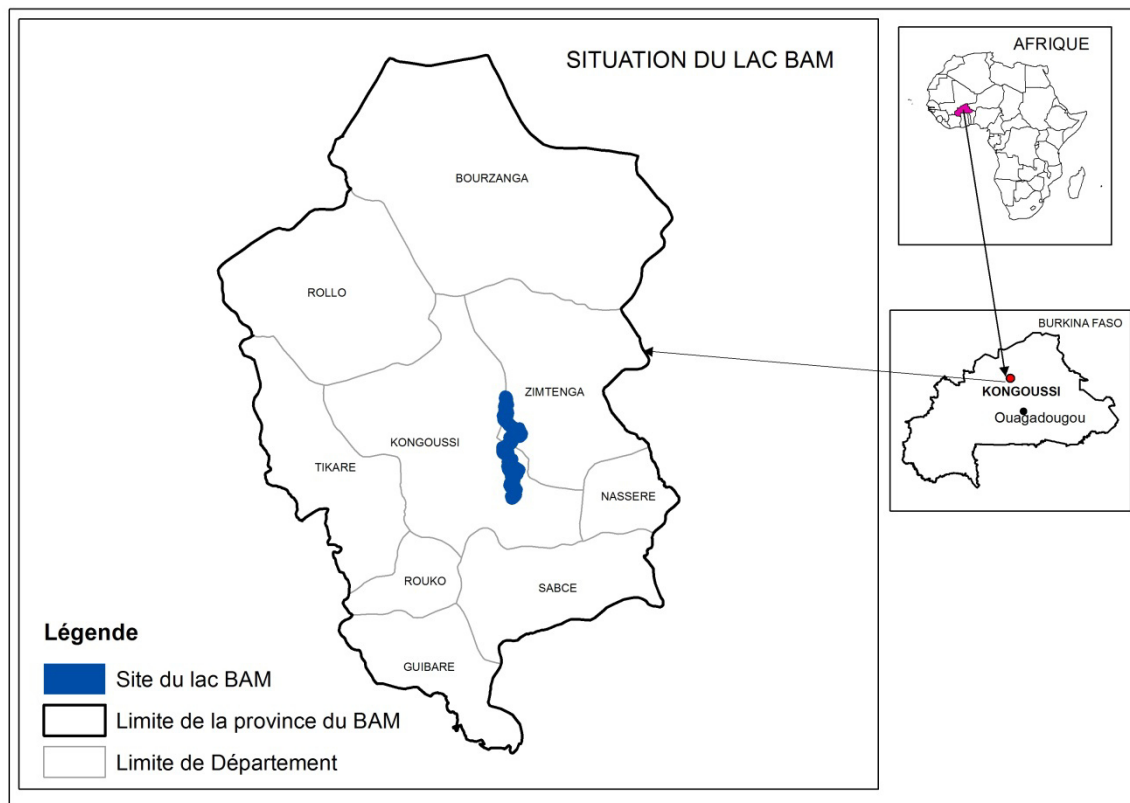
It is therefore necessary to bring rural people to ensure their socio-economic development while preserving the natural resources that have proven exhaustible. To achieve this, communication has emerged as a very fast answer. However, it needs to be adjusted and participatory because until now it has been reduced to mere activities of mass information dissemination to passive recipients. In conclusion, too many projects have failed because of the verticality of their planning and implementation (Dragon, 2001). Using communication in this form discredits both communication and the concept or practice of development it serves. Participatory Communication for Development (PCD) emerges as the result of an ethical reflection on development and communication. It is often referred to as participatory communication or communication for social change. It facilitates participation to a development initiative defined and chosen by a community as opposed to the traditional approach to communication based on diffusion, (Bessete, 2004). It requires a local management (Bacque et al, 2005) based on an organized communication (Giroux 1994), that leads to rehabilitation (Reynaud 1997). In this matter, questions should be asked on the implications of the CPD in a context of natural resource management where populations are themselves one of the main causes of degradation. In order to show the importance of communication in the management of natural resources, Lake Bam in Burkina Faso was selected as a study site. This lake suffers from an advanced state of siltation that threatens its survival and consequently the socio-economic development of local communities that are highly dependent on it. This situation justifies the establishment of a rehabilitation project aiming at increasing the Lake's spillway, managing additional 500 hectares for agriculture, rehabilitating 400 ha of existing agricultural zones, desilting the lake basin and defining supporting measures.

Common to these activities is the need for a multi-stakeholder process. If implementing these activities requires appropriate techniques, the organization and conduct of this implementation goes beyond the competencies of technicians. It is necessary to involve communication processes, because communication is also a challenge, a key determinant that helps address challenges in support of risky social processes (Bouzon, 2002).

### Study site

Lake Bam is located in the capital of Bam province, 110 kilometers north of Ouagadougou, capital of Burkina Faso (Map 1). Lake Bam is a natural and permanent water reservoir, which occupies the fossil bed of an old tributary of Nakanbé River. It originates in Bourzanga village in north and flows down to Kongoussi (Ouattara, 2009). Initially, Lake Bam had an area of

2610 km<sup>2</sup> for a perimeter of 205 km. It is the largest lake in Burkina Faso located in the valley between the hills surrounding the city of Kougoussi. The dimensions of the lake have been greatly reduced because of human activities and are largely determined by rainfall variabilities. The lake derives its name from that of one of local resident. The permanence of water in the villages favored the development of multiple socio-economic activities especially along its banks. Given its importance, its geographical situation and the biological diversity in place, Lake Bam was listed by the Convention on Wetlands as a Ramsar site.



Map 1 : Study site location

### Study objectives and methodology

The objective of the study is to see how communication represents a key issue in the social support of the Lake Bam rehabilitation process? In other words, if communication is one of the issues neglected in action, under what conditions is it one of the cornerstones in the renewal process of the rules of the game and the constitution of stakeholders around common objectives clearly identified in co-production processes? The initial hypothesis to answer such questions postulates that if the lack of communication has an important part in the siltation of the lake Bam, the rehabilitation of the lake cannot be envisaged without a deep involvement of the populations. This hypothesis, inspired from communication for behavior change, poses that change in human behavior generally follows a gradual process in which the steps or stages to follow are interdependent. The Transtheoretical Model of Prochaska and DiClemente (1982) we are inspiring from suggests that change is obtained after going through various stages ordered chronologically, including "pre-contemplation, contemplation, preparation, action, maintenance and termination". In the first stage, the subjects involved do not intend to change their risky behavior. At the stage of contemplation, even if the subjects intend to do it, they can remain there for two years. At the preparation stage, the persons involved intend to take initiatives that will be implemented during the "Action" stage. This last phase is called unstable because the subjects are at risk of relapse. The maintenance stage confirms choices previously made. In the final stage, subjects are no longer tempted to fall back into the earlier stage. It is important to know the stage of change in which, are the stakeholders of Lake Bam, if any. This could be the role of communication in this process that becomes the object of research.

To understand this role, emphasis is laid on a qualitative method based on the discourses of the actors and the sense they give to their discourses as well as the practices and processes they describe or present. Thus, the survey was implemented based on semi-structured interviews, individual and often group discussions. The study involved populations surrounding the lake, and users of the lake, taking into account the diversity of activities taking place. This was to understand the perceptions of the populations on the Lake Bam considering that it is a natural resource. And as such, people who make use of it may have different links and approaches to this site. It also takes into account technical agents (ministry of agriculture, that of water and

environment) involved in the rehabilitation process of the Lake Bam but also all the staff who work there either for the implementation of production strategies or the follow up of the actors and users around the water resource.

## Results

Local residents agree on the natural character of the lake and raise no mystery about its presence. For some, the non-artificial nature of the infrastructure makes it inexhaustible. The people interviewed know that the lake is a natural resource and express it in different ways. It is clear from their answers that the lake is a gift of nature, a gift from God.

People therefore know the difference between a natural lake and a dam. They emphasize its potential in terms of resources and are grateful to this grace. To this feeling is associated a mythical representation dedicated by a devotion characterized by regular rituals. A certain identity of the region is attached to Lake Bam. This link reinforces the functional dimension that the lake plays in the livelihoods of surrounding populations. Beyond this almost mythical relationship to the Lake Bam, the gratitude rests on its utility, the potential it represents to the everyday life of populations who consider themselves as products of the lake. The lake constitutes an economic potential for the region. The reputation of the city, of its lake and even that of the country for the production and export of green beans have made of Koungoussi a renowned town and touristic site.

Local stakeholder's actors have a keen awareness of the economic and vital importance of the lake for themselves and for the region. For the manager of the rehabilitation project, the lake provides important functions or rather represents at the same time specific resources. As the first natural water reservoir in the country, it is a national heritage, therefore a local resource to be preserved as such. This water resource is thus the heart of the local economy and can be used to develop many economic activities that would help improve the livelihoods of the populations.

This utility is determined by the diversity of activities and uses of this natural resource. The main activities are agriculture, fisheries, and livestock. Other uses relate to the use of water for construction, gold mining, laundry, and the use of water for road construction. Most of these activities contribute to the promotion of the local economy.

From what the respondents said, it is the diversity of activities that is expressed and this reflects the vital utility of the lake. If people insist on this utility, it is precisely because the lake allows populations and users to go beyond natural production constraints. In other words, the lake keeps production activities, beyond the rainy season.

According to local residents, the presence of the lake is vital for Koungoussi and its surroundings. The lake represents everything for the populations who perceive it as their hope. They often identify themselves as children of the lake. In addition to agriculture and vegetable production that they practice, including market gardening they practice, fishing, fish farming, and livestock breeding are other activities in which they engage. Herdsmen come here not only to graze their animals but also for water use. Fishing in addition to the activity itself and aquaculture are developing a mini market around the lake. Indeed, women bike to the river beds with their baskets to buy fish and this brings around a lot of people. Some seize the opportunity to sell fresh water. Washing clothes at the river banks is a common practice. Moreover, miners come along with bike taxis to collect water for ore washing out of the bank. Despite its importance to the population, there is more shrinkage due to siltation.

People do not mix up water resources, or natural gift of God, with its preservation. Blame is put on the various uses in the depletion of the resource.

The different stakeholders of Lake Bam are aware that this is a matter of life and death. Their observation is overwhelming. The amount of water is going down, including the resources it contains, like fish, but also the activities that were developing in its surroundings. One of the main causes is siltation of the lake. Siltation has a negative impact on each activity they undertake. Siltation and the subsequent drying up are progressive. Stakeholders then fear that the lake will eventually disappear, since it is not a renewable resource in itself. Human actions and climatic hazards lead to a drastic reduction of natural resources. The reduction of water resources contributes to the disruption of production activities.

Everyone is aware of the siltation of the lake (Photo 1). However, if some remain skeptical and fatalistic, others hope that rehabilitation some activities. rehabilitation maintaining



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is necessary to ensure users sustainability of their  
They indeed know that  
is the condition for  
the lake.

Photo. Compaoré J., juin 2015

Photo 1 : Overview of anthropic actions on Lake Bam' banks

The lake is suffering from evil. Both populations and technicians share the same opinion. This ascertainment was made years ago from residents' experiences and observations. For some stakeholders the issue of siltation is known to all; there was a statement on the problem and all the inhabitants of the surroundings are aware of this.

Observations during the field trip have allowed to make some ascertainments. Around the lake we noticed the presence of ESCOBAM irrigation device for green beans production that used to make the reputation of Kongoussi. According to the cooperative, these plants were made after some topographical studies for an exploitation that would not undermine the sustainability of the lake. These plants are still visible around the lake. The new situation is in contradiction with the industrial systems. Overexploitation of the lake, one of the causes of the drying up and siltation, is obvious despite their awareness of the problem. The lake is threatened but none of the stakeholders takes concrete actions to resolve or prevent the situation from getting worse. Cropping is done not within 100 meters of the lake but also inside the lake. Tunnels are dug to drain water to the banks for vegetable production (photo 2). This is for those who have the means to acquire the machinery to propel water up to the plane located in the former cooperative plants. For those who do not have these means, the logic is simple, crop inside the lake. In addition to this is the free mobility of animals in the lake's bed.



Photo :Compaoré J.

Photo 2: Drainage device for irrigation in the minor bed of Lake Bam



It is important in the model of participatory communication for development to ensure that communities have extensive knowledge of all the ins and outs of the development problem. In this present case, if natural factors are mentioned, populations are pointing different uses of the water of the lake as part of siltation factors. Anthropogenic factors include for example deforestation, degradation of the natural vegetation cover of the lake, trees and herbaceous that played that role. Correspondingly, the sand drained by rainwater piles-up into the lake's bed and contributes to filling it gradually. However, the drainage power of the sand in the lake is favored by the destruction of the vegetation cover due to human action.

Alongside, attempts to protect the lake against desertification by building stone-bunds unfortunately stand up irrigation tunnels, which at the first rainfall; will drain sand into the lake. Different uses and operating modes are the leading causes of siltation. Therefore for those affected, agriculture is the main source of the siltation of the lake. For them, this is caused by vegetable producers because they cultivate everywhere around the lake. To the activities of vegetable producers, are combined those of water fetchers.

In conclusion, we almost feel like saying as Freud that "hell is others." Between self-designations and mutual accusations, most water and surrounding resources users are designated as responsible for the siltation. Vegetable production is the main cause pointed at by most informants. However, everyone's responsibility is recognized and emphasized. We are thus in a co-responsibility process. It is this co-responsibility which forms the reality of the lake's decline, beyond imputation speeches, which represent some kind of mutual accusations. The imputation consists of pointing at the person to blame for a given situation, rather embarrassing, while trying to clear oneself. Yet, in reality, the truth is always different.

## Discussion

If everyone's responsibility is recognized in the advent of a problem, solutions must be sought for by all stakeholders considering that Lake Bam is as well a natural heritage as a resource that carries several economic activities and ensures the survival of surrounding populations. This is why there is no doubt among stakeholders for the need of its preservation. Some also believe that we must find ways to ensure a minimum of equalization based on a water management plan. We are in a rationalizing logic, because there is strong and effective awareness regarding the scarcity of water as a natural resource.

Solutions have been considered, experimented without always succeeding, like this rehabilitation project that never ended as some respondents said. They remain necessary. NGOs have worked one after the other to overcome the gradual siltation. There were restrictions as to the use of resources around the lake. This is the case of a restriction to cultivate within 100m from the lake even though such a restriction did not concern everyone, but only farmers.

One of the major concerns is the failure of all these restrictive measures that aimed at preventing or reducing the siltation rate. Awareness of the problem of siltation and the need for its management had the effect of paving the way for the establishment of associations. These associations have the task to help prevent the gradual decline of the lake.

Measures to safeguard the lake are not only the job of NGOs and associations. Policy makers, the central government and local governments make decisions. Precisely in the area of public action, decision is taken up by the competent government authority in a given territory. It is the effective implementation of the decision and the rules that derive from it that gives meaning to a policy while allowing its operability. It is the non-respect of these rules that is not yet guaranteed in the various operating activities related to Lake Bam.

Farmers and local residents continue to hope that other measures would help overcome the problems of siltation and water depletion. They suggest, for example the implementation of technical measures that prevent runoff to drain the sand into the lake bed. This is the case of stone-bunds. For others, it would be important to clean out the lake, with all the costs that it entails. For others, solutions should take into account communication plans with the effect of increasing the awareness of various stakeholders around the lake. The advantage of using communication is the need to involve all stakeholders in the debate process and decision-making that are conducive to stop the the siltation of the lake.

Designated as a wetland of international importance under the Ramsar Convention, the lake is becoming an ecological heritage which protection is also as a result of the country's commitment to international conventions. Yet, Lake Bam is a territorial resource that should be further activated to unveil its full potential and the construction of a territory that can count on its own resources, especially the most strategic ones. In a development process, it is the capacity of stakeholders to promote and activate local resources that makes these resources strategic (Pecqueur, 2009, Landel and Senil, 2009). The fact that the lake makes it possible to engage in production activities during the dry season increases its usefulness and makes it a first class strategic resource in a social context where production activities depend largely on natural resources, and especially climatic constraints. But then, the lake makes water available for various activities and for different social uses. Poor rainfall was not an absolute obstacle to vegetable production around Lake Bam. But it is no longer the case with the gradual depletion of the water resource. It is the negative relationship between natural and anthropogenic factors that causes the lake's siltation. In this process, users do not respect the minimum requirement for the use of the water resources and its surrounding resources. Users' behavior is then pointed at: burning of vegetation around the lake in search of manure, soil dug very close to the lake and which enters into the lake once the rain starts.

For all stakeholders to be involved, as wished and suggested by most respondents, we must put in place action mechanisms through which communication is central, like a safety valve, the missing link, the essential link among the different stakeholders on ground in order to ensure the occurrence of perennial trade-offs negotiation devices (Finch, 2009).

The need for such involvement should take into account the constraints faced by any participatory process. For now, the stakeholders met on the ground have identified some constraints and concerns. These constraints are of a material nature. The recurring issue of material difficulties comes up whenever a concern is raised while hoping for the participation of stakeholders. And as such, it represents the major constraint because everyone thinks it is enough to gather the material and financial means to resolve problems. Decision-making faces uncertainties due to the context of prevailing poverty. These uncertainties arising from the context tend to reduce the effect of decisions. Prohibitions are difficult to be enforced because the issues often take an ethical twist. Indeed, it is important you have to combine protection of the lake with the food needs of the populations who are highly dependent on it.

It is in this context of multiple challenges that stakeholders think or resort to the idea of external support. In addition to the alleged or effective difficulty of the action is associated the impossibility to intervene without any external help. Financial resource mobilization becomes a major issue. Populations, Lake users do not always react in the desired manner. What happens most often is resistance or refusal to pay taxes.

To solve these equations, landowners must be consulted, as suggested by some people. Their argument rests on the fact that they are the ones giving land. The argument is that if landowners define the operating modes of their land, farmers would comply logically. Their involvement is a necessity of first order because they would be the only ones to make rules accepted and applied on the lands that belong to each of them. Beyond the involvement of such specific stakeholders, all actors, users, technicians, residents, should be part of any intervention process aiming at preserving what remains of the resource, and its rehabilitation.

On analysis, stakeholders of the lake are at the stage of contemplation, the stage where they deeply feel the need to change their behavior imminently. Despite their good intentions, it is estimated that stakeholders have not yet got over that stage to be in those of preparation and action. They lack a consultative action plan.

From their formulation and the expected scope of their implementation, solutions suggest that any initiative or project to rehabilitate the Lake Bam makes communication a major determinant.

When listening to some stakeholders, communication can be considered in the rehabilitation of the lake Bam as one of the neglected and marginalized aspects.

In doubt, some stakeholders prefer to talk about the means of communication as one of the factors of failure of previous projects to rehabilitate the Lake Bam. Project managers have denied poorly communicating on the project. This communication was made on the basis of information provided by the people involved, and direct discussions with them, through several field trips. Multi-stakeholder workshops, seminars have been organized for this purpose.

Residents and users also confirm in their observations that meetings were held involving all those who gravitate around the lake. Testimonies insist that stakeholders were involved in the discussions from scratch. Some have even made suggestions for better management of the issue of the siltation of the lake.

We are facing positive judgments of the approach that the project initiators have adopted from its implementation. But this positive perception of the approach seems to contrast with the expectations of the people. That is, if everyone admits that they have taken part to several meetings, one has the impression that this was a compilation of meetings, a series of meetings that have not been followed up in terms of Information and communication. The impression is that after the first moments when communication seems to have existed, the process did not move forward. People are in a waiting posture, they observe activities, without understanding what is happening.

Notwithstanding the limitations of the communication process surrounding the rehabilitation of Lake Bam, it is clear that some effort of communication is made.

But as a communication device, project managers have an embryo device that has not had time to take root. This device comprises an office located in situ. People can go there to get information. The device also includes meetings, training workshops, and sensitizing meetings. It involves project managers, but also focal points, and administration officials. Thus, the project relies on decentralized structures to ensure the link with the populations.

Overall, we can say that the approach is based on a sense of communication through which processes are invented, imagined in high places, by the direct stakeholders of the project, and later suggested to or imposed on the stakeholders on the ground, diverse populations, local residents, users of water and surrounding resources of the lake. Such an approach shows that there is an attempt to involve the different stakeholders; this process takes its roots from a top-down approach. Meetings, workshops and other meetings merely allow to endorse the decisions and ideas developed by the project's experts. But then, the legitimacy of a process in the implementation of a project involves a participative, dynamic communication, with the objective of causing change. This communication process for change should also meet stakeholders' expectations in

communication. Indeed, as Bessette (2004) said, "The expression" community participation "does not refer to mere participation in the activities described by others, but the decision on the activities to be undertaken and the objectives to pursue. It applies to community groups within a community, including those who generally have no access to decision-making."

These expectations are based primarily on the communication means to mobilize. In this purpose, Lake Bam stakeholders believe that no tool should be neglected. It should also use a variety of communication means to ensure effective communications by integrating it into a process in the form of a complex system. We are in a systemic perspective in which organizations are open systems in constant interaction with the environment. The organization is thus a living system which as such, is a complex system. This complexity refers to the high number and diversity of the types of elements and relations of any living system.

It is in this perspective that the systemic means of communication to mobilize should be articulated in such complexity that all together and in their mutual interdependencies they meet the diverse needs and expectations of stakeholders, and the rehabilitation project stakeholders of the lake. Various means of communication are mentioned by informants, traditional tools, endogenous to modern tools, classic, contemporary but also within the Information and Communication Technologies. There are also training workshops and sensitization, various meetings and discussions, posters presentation, consultation frameworks and different communication channels at the local level: NGOs, associations, local political authorities, traditional and public administration, and religious. It is the consistent and thoughtful pooling of all communication means that would ensure a minimum of consensus, despite the differences that Pinson (2009) calls the operating agreement or communicate in such a way that everyone looks the same direction.

Regarding key stakeholders, it should be remembered that the issue of natural resources in different societies in Burkina Faso involves the role of traditional leaders, who in spite of the modern land tenure system, invokes ancestral laws to keep all legitimacy on the control and management of these resources (Zongo, 2009). Informants have all emphasized the central role that landowners play in any communication process around Lake Bam as a resource. They also insist on the place and role of the elders and very few raise the issue of youth and women. Yet, in communication for development, the approach should consider gender, taking into account all social categories; especially that women and youth are the drivers of development by their propensity to provide much of the labor, and to be project initiators. So it will therefore be the ability to reconcile or balance two normative orders around a natural resource that is expected of any implemented or yet to be built communication device. This process should be inclusive and participatory based to account for all social categories and all stakeholders. It is such a process that must highlight the meaning and scope of interactions around the water resource by allowing, through participatory research dynamics, to challenge any lack of communication. Any other practice would foster rumor, source of all forms of interpretation.

Lack of communication, or the manifest or latent refusal to communicate is usually one of the sources of production of rumors in organizations. In the case of this rehabilitation project, it would be appropriate to work to prevent rumor from taking over the communication process formalized in a coherent strategy with tangible implementation tools. Similarly, one of the major challenges in this communication process is to manage to part with any bureaucratic procedure that has a tendency to forget or overlook the main actors who experience daily problems. For any the project to rehabilitate Lake Bam, the focal points are the provincial authorities, including high commission officials. Communication should not be limited to administrative agents. Indeed as Bessette (2004) stated "To effectively address the three interrelated challenges that are the fight against poverty, food security and environmental sustainability, development practitioners must work actively with all stakeholders to facilitate the dialogue, learning and active participation in natural resource management initiatives" It should therefore involve populations in the first place. The life or survival of these populations is closely linked to the lake. If all are stakeholders in the management of water resources, populations, with the diversity of their activities, are attached to it, because their survival depends on it.

Thus as it appears, it is a paradigm shift which is in question. We must go beyond the vertical model of communication focused in part on the distribution of messages and information and also on persuasion practices to develop and use communication as a tool for facilitating participation in development activities. This is clearly the strategy that we must radically change to favor the participatory method. The diverging points according to Dagron (2001) are some of those that separate participatory communication from other communication strategies for development in the research of social change "horizontal vs. vertical, process vs. campaign, long-term vs. short term, collectives vs. individual, specific vs. generally, people's needs vs. imperatives of donors, ownership vs. access, consciousness vs. persuasion"

The communication device to set up should be permanent under the auspices of a formal structure which will ensure constant monitoring for the success of any communication action. Project leaders and the different stakeholders would want it to be a multi-actor device, not exclusive and not underestimating the role and scope of action of each actor related to the lake. This idea contrasts with the initial idea that apprehended the cost that the implementation of such formalized structure would entail. The expectations of stakeholders in terms of communication introduce the reflection on the need for action. Communication here is an effective way to bring about change. In this respect, and to build it in an efficient and effective way, it is appropriate to base it on an integrated approach.

Such an integrated approach around the water resource aims to minimize conflicts and their effects on the management of the resource. If there is no policy on an integrated management of the resource, this will lead to conflicting uses, says the leader of the rehabilitation project of Lake Bam. In this integrated management, it would be important to put in place a contingency plan. This contingency plan would ensure a minimum of equalization so that all participate and all benefit from the resource. The role of communication in this dynamic is also to foster learning processes and actions they imply, but also learning each one's roles in his relations with the water resource, in its relations with other actors, whether conflicting or not. It is, moreover, what is required for a responsible management of natural resources.

## Conclusion

Lake Bam is an inter-district jurisdictional resource shared by two districts, Kongoussi and Zitenga. It deserves to be treated and valued as an inter-district resource capable of producing wealth for the two municipalities. In this context, the uses of Lake Bam for survival, should be better organized and regulated to ensure sustainability while allowing it to continue to ensure the wealth production. However, the empirical evidence shows the gradual dry-up and siltation of the lake. This study on the role of communication in the lake Bam rehabilitation project has reinforced the importance and scope of communication in any project of social transformation. In the case of this lake, social representations do not confine it only as a natural resource, a gift from God or nature to exploit without reserve. Fortunately, the surveyed stakeholders are aware of the finiteness of natural resources and the necessity to preserve it. The different factors pointed out, besides the natural factors, focus on human actions. It is the human factor that boosts or enhances the natural factor to cause siltation of the lake and consequently its progressive drying up. However, this is indeed an economic resource, a resource to which local residents and various water users attach particular importance. The sustainability of the water resource determines the survival of a variety of socio-economic activities at the local level. By bringing together the different stages of behavior change process highlighted in the trans theoretical Model of Prochaska and DiClemente to the Lake Bam rehabilitation project, it is legitimate to say that the different stakeholders are only at the stage of contemplation. There is still a long way to go, the risk of relapse is high. But such challenge cannot be overcome if there is no integrated resource management, taking into account all factors that pose problems, but also all stakeholders, their concerns and expectations. This is the main challenge of participatory communication as an interpretative category of social relations around a development project and links that unite or oppose stakeholders, but also as an action variable.

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