Open Access

Contemporary Research Analysis Journal

e-ISSN: 3050-5909
p-ISSN: 3050-5895

Volume 02 Issue 05 May 2025

CrossRef DOI: 10.55677/CRAJ/02-2025-Vol02I05

Page no: 229-241

A Distinction Between the Stakeholders Around the Salbisgo Dam in Burkina Faso to Better Understand Their Logic of Action

Frédéric BATIONO[1], Tiraogo Prince Florian BOUDA[2], Issa SORY[3], Yélézouomin Stéphane Corentin SOME[4]

[1,2,3,4]Human and Social Sciences Research Laboratory (LABOSHS), Department of Geography, Norbert ZONGO University, Koudougou, Burkina Faso.

Corresponding Author: Frédéric BATIONO

ABSTRACT: The multiplicity of water resources uses around hydraulic structures is at the cause of unconsidered pressure on water, which nonetheless leads to their degradation. Competition for the use of the resource is the result of the contradictory rationales of the involved actors. Around the Salbisgo dam, a group of stakeholders generally includes on the one hand "direct stakeholders", i.e. those who have a physical impact on the dam. On the other hand, are the "indirect stakeholders" who, through their choices, influence the management of the dam through influence on the direct stakeholders. The formers tend to draw on the dam's water resources to satisfy their own needs, while the latters act with a view to efficient governance of the dam's water resources. The aim of this article is to understand the rationale behind the practices of the stakeholders of the Salbisgo dam. The methodology is based on secondary and primary data collected from key stakeholders, combined with field observations. Analysis of the data revealed that the various stakeholders have contrasting rationales. The agricultural users of the dam, such as the market gardeners, have a financial rationale with regard to their actions on the dam pushing them to make their investments profitable. A closer glance at the behaviour of livestock farmers shows that they are trying to sabotage the common good. Actors like fishermen, are pursuing both financial and ecological rationales. As one of the stakeholders, the ONEA is concerned with drinking water supply. Other indirect actors such as the DREA-COS (Direction Régionale de l'Eau et de l'Assainissement du Centre-Ouest), the AEM (Agence de l'Eau du Mouhoun), the CUE (Comité des Usagers de l'Eau) and the Ramongo town council are all involved in technical and administrative issues. All these approaches have an undeniable impact on the sustainability of the dam.

KEYWORDS: Stakeholder logics, direct stakeholders, indirect stakeholders, sustainability, Salbisgo dam, Burkina Faso.

INTRODUCTION

The development of hydraulic structures, especially in developing countries, is an important factor in the fight against poverty and the achievement of food security. These structures bring together a large number of users with a wide range of activities and practices. Their often contradictory ways of exploiting water resources contribute to their degradation. As a general rule, community management of water resources remains dysfunctional in several regions of developing countries. In a context of increasing scarcity of water resources and rationalisation of their uses, water is a commodity to be managed sustainably. However, the logic of local stakeholders is not in harmony with global considerations (Baron & Bonnassieux, 2011 ; Fossi *et al.*, 2014 ; Le Visage & Kuper, 2019; Ruf, 2000 ; 2004a ; Reynard, 2005) , because access to water resources requires the payment of a fee in order to perpetuate hydraulic structures. Some users, particularly sedentary pastoralists in the Ferlo region of Senegal (Ancey *et al.*, 2008), consider water to be a free common good that falls from the sky and requires no payment for its abstraction. This is why many waterworks are experiencing management problems due to the reluctance of users to pay the tax inherent to water uses. As a result, available water resources are being over-exploited and uncontrolled extraction is taking place by certain users, who fraudulently or *incognito*, use water for their herds of animals.

The customary authorities, emblematic figures who used to be at the heart of the entire management and decision-making process (Bédoucha-Albergoni, 1976 ; Rivière-Honegger *et al*, 2000 ; Jozan & Baubion, 2004 ; Platteau, 2004 ; Ballet, 2007) in the management of local resources, have seen their decision-making powers and management prerogatives eroded by the advent of decentralised management, with decision-making power now in the hands of local councillors (Calas, 2011 ; Sanou *et al.*, 2013). In Ecuador, (Girard, 2006; 2008; 2009), neoliberal political trends in recent years have reinforced structural inequalities in the access to water resources. This situation is reflected in an 'extractivist' approach that maintains concentrations of water rights based on the principle that 'he who has the most land needs the most water', thereby favouring those with the greatest economic power and political influence. Within this logic of dismantling the roles of the State, local government and civil society in the Rio Ambato

catchment area have developed their own ways of managing water resources. Indeed, it should be noted that dam management responsibilities are ambiguous due to the profusion of local actors in charge of these dams. This situation reflects the power games that crystallise the balance of power at local level, depending on the issues and interests of each stakeholder or user (Coulibaly *et al.*, 2007 ; Hmouri *et al.*, 2017 ; Mboungou *et al.*, 2017).

The oligarchic nature of management, which is expressed in terms of influence and decision-making power, combined with the financial capacity of certain great users, further accentuates the logic of free access to water resources without payment charges (Selmi, 2000 ; Keita *et al.*, 2001 ; Le Roy, 2000 ; Sidibé, 2012).

As far as irrigation is concerned, several users have very different, even divergent, approaches to appropriating the resource (Plottu & Plottu, 2009). These include *the logic of the pioneer front*, according to which water belongs to the first to discover it and claim exclusive access for themselves. Another approach is *the logic of the* central *state*, where water is seen as a strategic resource to bolster the often despotic power of a political regime. In this approach, access to water resources depends on the population's attitude towards the ruling government, and this can involve corruption and power abuse from state actors committed to managing the resource. In addition to the former approaches, there is also the *community logic*, in which the collective effort shared to create the resource through a common system results in rights defined and negotiated within the community of founders and their heirs who maintain the system. Approaches to appropriating water resource also comprehend *the logic of a private service* invoiced by a manager, a company that ensures the distribution and the controls of the resource or that it receives under delegated management[1]. These approaches also take into account *the logic of individual and private access* to a local resource without any form of regulation or cooperation between investors (Ruf, 2017).

A stakeholder is a person, a group of individuals, an organisation or an institution, with one or more spokespersons. In a nutshell, a stakeholder is "a group of natural and/or legal persons, organised or not, with or without legal personality, and capable of acting - directly or indirectly - on the state variables of a system" (Bernoux *et al.*, 2001). In geography, a stakeholder is a human group acting not only on a space but also intervenes in that space management in which the stakeholder may have autonomy of initiative and reaction (Pumain, 2001 ; Piveteau & Partoune, 2010). Within a group of stakeholders, there may be a direct stakeholder on the one hand, acting materially and physically on the territory or space considered. On the other hand, there may be an indirect stakeholder who, acting on the management of the space or territory by influencing the other direct stakeholders through the choices made. In the case of the Salbisgo dam, the direct stakeholders refer to the users and the local populations, while the indirect stakeholders refer to the representatives of the structures, whether at local, regional, national or even international level. The study on stakeholders sheds light on a geographical situation by arising pertinent questions such as "Who is doing what?", "Why is it being done here and not elsewhere?", "What are the power relationships? It is interesting to note that in geography, almost all the stakeholders are collective. They may be state authorities, administrative authorities, associations or groups of associations. Furthermore, the stakeholders on the geographical level play practically the same role as those in the theatre, who are not alone on the stage, but who are replicating each other. stakeholders in the geographical area are in constant interaction with other actors in the same area, which sometimes leads to conflict between them over the appropriation of a space or a resource in the area (Mormont, 2006). Hence the term "stakeholder games", which refers to these interactions. Stakeholder games or strategies can be the positions, choices and decisions of stakeholders in relation to the system and its components, or in relation to other stakeholders. Each stakeholder has his own strategic behaviour, which he implements to achieve his objectives.

Partoune (2009) has developed two key tools for understanding the logic of one or more stakeholders : the asset audit and the CAPE matrix.

The asset audit is based on a number of principles. Four (04) asset criteria can provide an operational approach to a stakeholder's logic. The first is richness, i.e. the abundance of what interests the stakeholder. The type of question he is usually asked is : "How would you represent this richer space ? Secondly, there is the security of the stakeholder's position, which is analysed on the basis of the risks to him or his environment. To find this out, we ask the stakeholder the following type of question : "What threatens the stability of this space, or of your position in it ? How can these threats be averted ? Thirdly, adaptability, which in this case refers to the potential for change offered to the stakeholder by the way the environment is managed. The question posed here is as follows : "What are the conditions for resolving the conflict ? What concessions are you prepared to make ? And fourthly, coherence, which refers to the actor's coherence with regard to his institutional role (Maury & Richard, 2011). The type of question put to the actor is as follows : "In what way is your behaviour towards the conflict legitimate in view of the institution or structure you represent ?"

Furthermore, these four (04) criteria can be broken down into "expressed" logic and "interpreted" logic. Expressed logic refers to verbalised logic, i.e. what the actor says outright and without concealment. Interpreted logic, on the other hand, reflects the actor's real stakes, which motivate his action but which he does not wish to express. For example, elected representatives who are motivated

[1] Delegated management is a common phenomenon in the urban world, but a little rarer in the agricultural world, and is well established in Spain, Morocco and France in the form of regional development companies.

by the need to retain their electorate rarely admit it. Even if it is difficult to detect the interpreted logic, it is important to know that it is essential for understanding the consistency of the stakeholders practices with their discourse.

Furthermore, the notion of logic of action can take on several meanings, all of which have in common that they seek to reveal the reasons why stakeholders act by taking into account the diversity of their motives, based above all on the discourse that they themselves hold and on their conduct. The dualism that may exist between the actor and the system can be transcended in order to gain a better understanding of the behaviours of actors at work (Bréchet & Schieb-Bienfait, 2011). Human behaviours are difficult to predict and predictable at the same time because of the system of interaction and interdependencies of the games of actors (Garraud, 2016). Depending on the circumstances that arise, an actor is led to reconsider his choices. People discover their own desires according to the current opportunities. They do not make an optimal decision, but rather the one deemed satisfactory according to the information and resources of the moment. In this way, their behaviours reveal their strategy[2]. As far as the CAPE matrix[3] is concerned, this is a way of looking at stakeholders from the point of view of whether they are internal or external to the area, and whether or not they regulate the area issues.

With regard to the internal or external nature of the stakeholder in relation to the area, he highlights two (02) types of situation. On the one hand, the micro-region constitutes the reference area for the internal stakeholder, which may be based on economic and social reasons. On the other hand, the external stakeholder, who is often a multi-regional stakeholder, the micro-region is one of many areas interesting him or her. This stakeholder therefore has an impact on the area without living there or participating in the local debate.

With regard to the regulatory or non-regulatory nature of the stakeholder in relation to the issues at stake in the zone, on the one hand it is a question of the regulatory stakeholder wanting to preserve the overall balance of the zone and maintain its autonomy. On the other hand, the nonregulating stakeholder who takes the environment to its own logical conclusion and has no plans for the area.

When we combine these two (02) criteria, we get four (04) stakeholders profiles. These are the collective stakeholder, the private stakeholder, the referee stakeholder and the external stakeholder. The collective stakeholder belongs to a professional or social group with a clear common project for the zone. Private stakeholders, act on an individual basis and are *a priori* resistant to the idea of collective action. The referee, has a global vision and constantly seeks to regulate everything, but remains outside the microregion. The external actors, is the one who acting on an individual basis and can, if necessary, move to another territory to carry out his activity. The latter brings openness, an outside view and innovation.

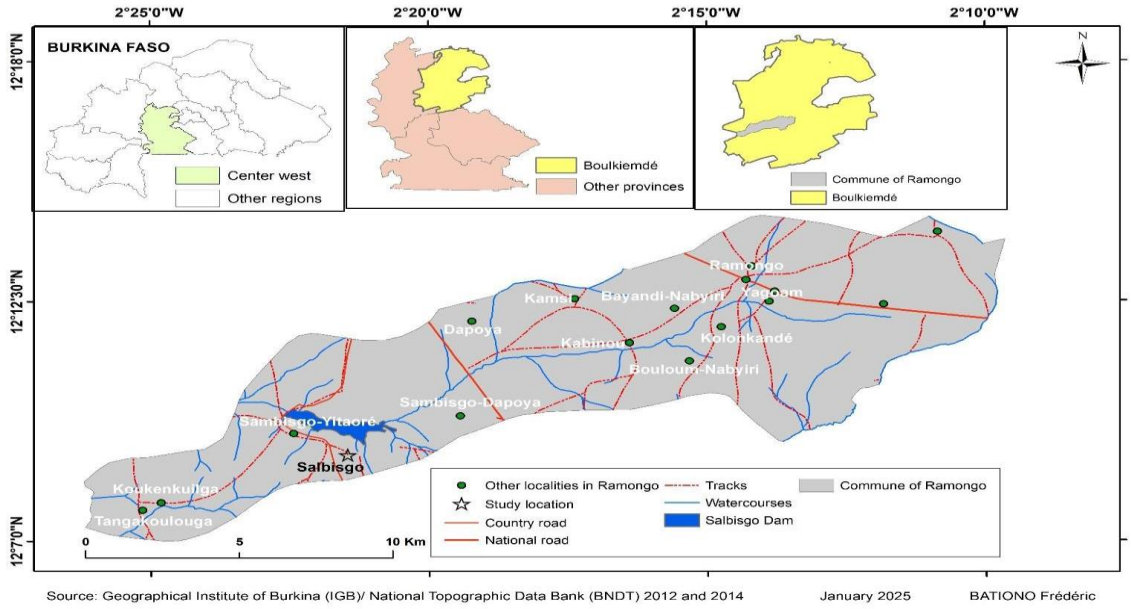
In the present case, an actor's logic is a vision specific to a given actor. It refers to the reasoning used by the stakeholder. The divergence of stakeholder logics can constitute an obstacle to the governance of a common good, because very often they are not in phase when it comes to governance. In this respect, several logics can be attributed to stakeholders, notably the appropriation logic, the financial logic, the technical-administrative logic, the ecologist logic, the territorialist logic, and so on.

It is important to recognise that logics are determined by stakeholder behaviour. In order to do this, stakeholders must be clearly identified according to the way they intervene in the common good. Generally speaking, stakeholders act according to what they can gain or lose. Their practices are in line with their own interests. In addition, each stakeholder manages as far as possible to take advantage of a situation or good beyond the pre-established rules.

The Salbisgo dam crosses two (02) villages, Salbisgo-Itaoré and Salbisgo-Dapoya (Map), and is located in the commune of Ramongo. It is a multi-use dam, with several categories of users drawing water from it.

[2] https : //www.dygest.co/michel-crozier-et-erhard-friedberg/l'acteur-et-le-système, consulted on 22 August 2023.

[3] It should be noted that the CAPE matrix was originally proposed by Piveteau Vincent. This matrix can be summarised as follows : "C" as the collective actor; "A" as the arbitrating actor; "P" as the private actor and "E" as the external actor. Each actor has a clearly defined role.



The water from the dam is used for farming, especially market gardening, for watering animals, for human consumption through its extraction by the ONEA (Office National de l'Eau et de l'Assainissement) in Koudougou, for road paving by construction companies pumping water from tankers, for domestic use by local bricks makers, for house building and for organised fishing. Through this multi-use of the dam's water, the article mainly analyses the logics of the actors around the Salbisgo dam and the reasons justifying their actions around the structure.

1. RESEARCH METHODOLOGY

The methodology used to carry out this study includes a theoretical reference framework, data collection and analysis of the collected data.

1.1. Theoretical frame of reference

This article draws on Elinor Ostrom's theory of collective action and Garrett Hardin's theory of the commons.

Garrett Hardin's theory of the commons theory stems from his famous article "The Tragedy of the Commons" in 1968. Hardin explains that when a resource is freely accessible but finite, each individual has an interest in making the most use of it, which leading to over-exploitation and degradation of the resource. This is the famous tragedy of the commons. Hardin warns against the lack of regulation in the use of shared resources, and the difficulty of reconciling individual and collective interests. For him, management will only be optimal when the resource is either privatised or regarded as a commodity to be preserved (Bon, 2001 ; Ballet, 2007). This theory was of course subsequently criticised and enriched by Elinor Ostrom, who showed that communities can self-organise the sustainable management of a common good.

From a theoretical point of view, Ostrom (Ruf, 2011) has shown that, contrary to the pessimistic vision defended by Garrett Hardin, communities are capable of self-organisation and sustainable management of a common good, provided they respect a set of principles. These include clearly defined rights, appropriate local rules, user participation, monitoring, graduated sanctions, local conflict resolution, etc. When the prescribed rules are not respected by users, sanctions are predicted for bad users. When users fail to comply with the prescribed rules, penalties are imposed on those who do not. This Ostromian concept of the commons has made a significant contribution to the debate on water resources. It has guaranteed local communities an opinion in the management of water resources and infrastructure (Ivars and Venot, 2018).

1.2. Collecting, processing and analysing data

The article is essentially based on secondary and primary data, and also field observation. The secondary data consists of a review of the literature on the issue. It allows to discover what is already known about the rationale of the various actors involved in water development and their underlying practices. The primary data consisted of qualitative data collected from leaders of agricultural and market gardening cooperatives, local and regional political authorities such as ONEA, DREA-COS, the Mouhoun Water Agency, CUE and Ramongo town hall. The surveys covered the two villages bordering the dam, namely Salbisgo-Itaoré and Salbisgo-Dapoya. Thirty-three (33) direct and indirect stakeholders were interviewed in order to gain a better understanding of their rationale for action.

The interview guide is the collection tool used to interview the stakeholders. Field observation was used to capture the realities on the ground in order to supplement the data obtained from the interviews.

All the data collected is analysed using appropriate techniques. Qualitative data is first recorded and then transcribed manually. This data was then processed and analysed using the content analysis model. The interviews were transcribed literally in order to remain faithful to what the respondents said. The content analysed consisted essentially of listing interesting passages (in the form of verbatims used throughout the writing process) and relevant passages with a view to identifying concepts, key words and ideas for analysis. To ensure anonymity, pseudonyms were used to identify the respondents. ArcGis software was used to produce the location map of the study area.

2. RESULTS AND DISCUSSION

2.1. Results

The stakeholders involved in a common good do not necessarily have the same organisational structure or the same *modus operandi*. Determining their different rationales necessarily involves answering questions such as: "Who does what ?", "Why do they do it ?", "Why here and not elsewhere ?", and "What are the power relationships ?

2.1.1. Direct stakeholders around the dam and their rationale for action

Those directly involved in the use of the Salbisgo dam include market gardeners, fishermen, livestock farmers, brick-makers and the ONEA (Office National de l'Eau et de l'Assainissement).

On the market garden plots, production techniques speak volumes about the objectives pursued by the farmers. On some market garden plots canals are dug to facilitate the flow of irrigation water (Photo 1). In this situation, much of the water is wasted and discharged into the environment (Photo 2).

Photo 1: Internal canals dug in a market garden plot to carry water
Source: BATIONO Frédéric, March 2020 and November 2022

Photo 2: Water spilt outside a market garden plot
Source: BATIONO Frédéric, November 2022

These practices lead to significant water losses. Many users pay little heed to this and are obsessed with monetary gain. The following comments clearly illustrate this state of affairs :

> *"... Before, market gardeners used to dig wells and use buckets to water their plots. Now it's a case of pulling with machines and then sitting there, it comes in, and when it's good, they go and turn off their machines. So, all the water is gone. There's no saving water. Water is dispersed everywhere. That year, it rained for a while, so we know that the water can't finish. But the way they've started, it's going to dry up".* (Interview with Gopacelo, a farmer in Salbisgo-Itaoré, November 2022).

The market gardeners, each on their own plot, are only interested in increasing their productivity at any cost, despite negative impacts on the dam. This is made even more obvious by the fact that allochthonous users who come to temporarily occupy the banks of the dam to produce intensify their production techniques in such a way as to damage the dam. As a result of the practices of agricultural users have a financial rationale.

Livestock farming is an activity that uses a significant proportion (Table 1) of the dam's water resources, given the increase in livestock numbers in the Ramongo commune (Figure 1).

Table 1 : Estimated water requirements for animals

Water consumption in m^3/year			
Years	**Cattle**	**Sheep**	**Goats**
2013	1646, 4	90, 3	18, 06
2024	2351, 5	182, 93	36, 6
2029	2596, 2	222,6	44, 51
2034	2866,34	270, 8	54, 16
2044	3494, 25	400, 82	80, 16

Source: Koala, 2014.

According to Integrated Water Resource Management (IWRM), water requirements differ depending on the animal species, the quality of the fodder it consumes and the climate in which it lives. On average, cattle consume 39.2 litres of water per day, sheep 4.3 litres, goats 4.3 litres, asians 30 litres and horses 23 litres.

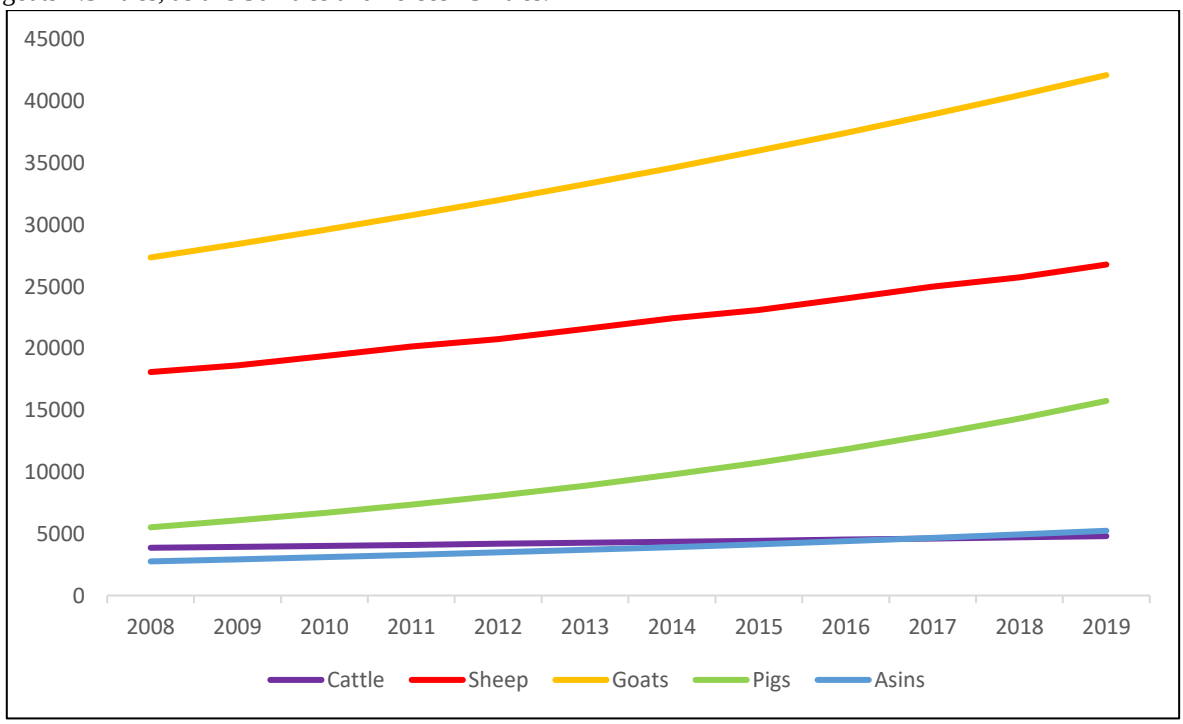


Figure 1: Estimated number of animals

Source: Commune of Ramongo, 2013.

The dominant animal species in the municipality is the goat. Other species are also abundant and require permanent watering and available water resource. At the Salbisgo dam, the average volume of water used to water the animals is estimated at 2,353 m^3 per year. The data in table 1 can be used to assess the scale of the volumes withdrawn and their impact on the depletion of the resource (Bationo, 2020).

With the considerable increase in livestock numbers in the coming years, water requirements will be even greater and the dam would not meet this demand. The livestock farmers whose animals drink from the dam are clearly motivated by the desire to use the dam's water resources free of charge. The objective is not just financial. One farmer declared that "we don't just see the money, but we also want the dam to last. We also want the dam to last."[4]

Contrary to the idea that all users of a common asset necessarily seek to maximise their profit and pursue their own interests, it is interesting to note that some users are concerned about the sustainability of the asset they share with others. Breeders find it useful to preserve the dam rather than exploiting it excessively for its further deterioration. The presence of the dam is an opportunity for them to shorten their grazing routes in order to find watering points for their animals. It even makes this task less arduous than it used to be for some farmers, who had to draw water from wells or any other water supply point that required physical efforts to pump.

However, that some livestock farmers have practices damaging the quality of the water in the dam. This is particularly true of those who rear small ruminants and poultry. One farmer pointed out that :

> *"Yes, there are consequences. Why say that ? Because I went before the rain came, I went to find two (02) goats, five (05) chickens, the person came like that with it in a bag to throw into the water. I asked him why you'd left all this way to come and throw it away here ? What happened and these animals died like that ? He said it was a contagious disease, so he couldn't stand it and that's why he threw it away. You come and throw them away here. Now, you know that our sheep come to drink, if it's a disease, if they drink, what's going to happen ? It's going to contaminate them. I went to collect them and put them in a well that we don't use any more".* (Interview with Gopacelo, a farmer in Salbisgo-Itaoré, November 2022).

This isolated case of a farmer who didn't know how to get rid of his dead animals and went to throw them into the dam shows the state of mind of some farmers when it comes to preserving the dam. The dam is seen as a receptacle, a dustbin, a dumping ground for dead animal carcasses. Not only is this detrimental to the quality of the dam's water, it could also be a serious blow to the health of local residents and their livestock who come to drink from the dam. Ignorance or not, the actions of the farmers are an attempt to sabotage the common good. Fishing is also an activity that requires the permanent availability of water from the dam.

As far as fishing is concerned, it should be emphasised that fishermen also have their own objectives, which are to catch as many fish as possible and sell them quickly to generate income. However, certain fishing practices are detrimental to the sustainability of the dam's ecosystem. All species of fish and other aquatic animals are exposed to extinction due to the overexploitation of the dam's fishery resources. In the past, a certain type of fishing net was discouraged on the dam by the local environmental officers, although it was not at all easy for them to systematically prohibit its use.

The "difficult" reconciliation of the practices of dam users with the prescriptions of the administrative authorities constitutes a real obstacle to the sustainable preservation of the hydraulic structure. When local people rebel against the protection measures advocated by environmental officers, this seems to indicate that the latter are motivated by a desire to maximise their profits, to the detriment of the long-term preservation of the dam. This would suggest that the constraint of respecting the authority established over the dam is not a sustainable solution that could lead local populations to adopt behaviours taking into account the sustainability of the dam. In fact, this is a conflict of interests requiring the intervention of the structures in charge of the dam. The misunderstanding between environmental officers and local residents should not serve as a lesson for water users, particularly fishermen. The latter are driven by a logic of productivism causing the uncontrolled use of unapproved fishing tools on the dam. The behaviour of the fishermen towards the environmental officers clearly demonstrates a desire to exploit the fishery resources of the dam to the full. The catching of fry using small-mesh nets poses a risk to the renewal of the dam's fish population. There are even "stowaway" fishermen[5] who plunder the dam's fish stocks without the knowledge of the local population or other users. Gopacelo, who lives near the dam, reports that :

> *"Others even come at night. Even the caimans that are over there, there are people who come to shoot them with rifles even around 12am, 1am. From time to time, when I sleep here, I hear the sound of guns at the edge of the dam. They take the guns and run off with them. It's those from Palogo who come to do this. No one will know, everyone's asleep at that time of night".* (Interview with Gopacelo, a farmer in Salbisgo-Itaoré, November 2022).

The practices of fishermen, who come to steal part of certain often-defended fish resources, reveal their carelessness about the extinction of certain aquatic species. The caiman, for example, is an animal that is both sacred and protected by the people of the

[4] Interview with Ragouné, a livestock farmer in Salbisgo-Dapoya, November 2022.

[5] A *free rider* is a user who takes advantage of a common resource free of charge and shares it with other users, leaving them to pay for the services linked to this resource. They can also be described as people who, without paying the cost of a service, nevertheless benefit from it.

village. However, some fishermen plan their capture and their sale at high prices elsewhere. For this reason, local people are doubling their vigilance to report anyone committing this type of act to the local authorities. Other fishermen, on the other hand, aim to :

> "[...] *to get people to develop the dam through fishing. This will certainly encourage the authorities to develop the dam properly, because silting up is a serious problem. My objective is not just based on money, but also on maintaining the dam. Because if the dam is well maintained, it will benefit our children and our children's children, although the objectives are diverse".* (Interview with Phibi, a fisherman in Salbisgo-Itaoré, November 2022).

In the light of the above, the fishermen surrounding the dam of Salbisgo have both a financial and an ecological rationale when it comes to the way they use the dam. In addition to the fishermen, the brickmakers use the water from the dam for a variety of purposes.

Brickmaking is an activity that enables a large number of people living near the dam, whatever their main activity, to build houses and even sell a few bricks to people in need. However, the persistence of certain behaviours, such as digging holes to extract earth, is causing some inconvenience to local residents.

Residents of the village deplore the consequences of such practices :

> *"We've noticed that those who make the bricks are gradually digging canals. Animals and even people can fall into them if they* [the canals] *are overflowing with water. Some vehicles, especially those looking for sand, get bogged down in them. People and animals break their legs in these holes".* (Interview with Migo, an authority in Salbisgo-Itaoré, November 2022).
>
> *"It's due to the fact that people make bricks on the edge of the dam, and when it rains, the water now carries away the mud that they dig into the dam".* (Interview with Godazon, a fisherman in Salbisgo-Dapoya, November 2022).
>
> *"Well, water itself is important. For example, if I want to build right away, I take the water from the dam instead of going elsewhere to buy bricks. Some people are even digging at the edge of the dam, and now it's all just holes. Right now, if you go in there and want to walk, you're going to fall into a hole. If you don't even know how to swim, you'll stay there. That's the problem. They're digging holes to make bricks ; right now it's full, in a little while it'll be gone, you'll see the holes".* (Interview with Gopacelo, a farmer in Salbisgo-Itaoré, November 2022).

These statements lead us to believe that the brickmakers were pursuing both financial objectives and the rational use of the dam. However, if we look at the consequences of their actions in the vicinity of the dam, it is easy to understand that they are hardly concerned about the long-term future of the dam. What matters is being able to satisfy their needs. Similarly, the ONEA uses water from the dam to meet the ever-increasing drinking water needs of households in the town of Koudougou.

The Office National de l'Eau et de l'Assainissement (ONEA) is considered to be the largest user of water from the Salbisgo dam. The water drawn from the dam is used to meet the high demand for drinking water in urban areas. ONEA, which is also a state-owned company, is looking to make its investments profitable. Despite its public utility, it pays taxes and water charges in the same way as other users of the dam. A manager from the ONEA in Koudougou explains some of the actions taken by the company :

> *"We have actions. We have interviews. I know that since I've been here, what have we been doing ? Every year, I programme the intake, but we don't have an action that can cover the whole structure. We only try to maintain the catch. That's all we've done to maintain the dam. Now, if there are actions where certain* actors *can contribute, like the Mouhoun Water Agency, even often, we can send a document to ONEA, which comes, we're receptive".* (Interview with Omigor, a manager at ONEA in Koudougou, November 2022).

In order to preserve the dam's water resources and guarantee regular pumping, ONEA has set up measures to protect and maintain the dam. Obviously, the ONEA pumps much more water from the dam than other users. ONEA's actions do not extend to the entire dam. They are limited to basic maintenance of the pumping station. Indeed, ONEA also seeks to maximise its profits while avoiding to bear the burden of protecting and/or maintaining the dam site alone. Nonetheless, it is seeking to protect the structure against possible depletion. The financial objective does not visibly appear in the ONEA's logic of action. On the basis of the "user pays" principle, the ONEA declines all responsibility for taking full charge of the dam. However, it is helping to safeguard the dam by making representations to authorised bodies such as the Mouhoun Water Agency and the Centre-Ouest Regional Water and Sanitation Department. Even though the ONEA draws water from the dam to supply the people of Koudougou with drinking water, it does not want to play the main role in the maintain of the site, which depends on the regional water authority. The Ministry of Water mandates its decentralised structures to maintain the dam with the support of the local population. The ONEA's role is to support or accompany the organisations dedicated to protecting the site. This could therefore explain the timid attempts it has made to protect and perpetuate the site. However, with the backing of these structures, the ONEA could organise the local populations so that they implement empirically effective local strategies to safeguard the dam. The ONEA is one of the very first users of the dam, if not the first, depending on its initial purpose. This gives it a certain legitimacy to coordinate the actions of all the stakeholders around the dam. Also, the ONEA is ostensibly pursuing both a financial and an environmental approach. The logic of appropriation is far from being prioritised by the structure because of its strong inclination to safeguard the structure. Hence the ecological

rationale, which is at the forefront of the pursued objectives, in that the structure mobilises local people to maintain the dyke, often covered with grass.

The basic and irregular maintenance of the dam's embankment means that it cannot be cleared of the weeds that grow there. The ONEA does not frequently maintain the structure, but coordinates actions by involving local actors, particularly local opinion leaders, in sharing and disseminating information about protecting the structure. The lack of continuity in the actions initiated by the ONEA does little to ensure the long-term future of the structure. The structure plays a dual role : it respects the "user pays" principle as a user of the resource. At the same time, however, it helps to regulate the use of water resources and establish sustainable conservation practices. It is in line with the principle of drinking water supply.

As far as the indirect actors are concerned, it should be emphasised that most of them are outside the area where the competition for access to water resources is taking place : the Salbisgo dam.

2.1.2. Indirect stakeholders around the dam and their rationale for action

The indirect stakeholders around the dam are mainly the DREA-COS (Direction Régionale de l'Eau et de l'Assainissement du Centre-Ouest), the AEM (Agence de l'Eau du Mouhoun) and the CUE (Comité des Usagers de l'Eau).

In fact, the dam belongs to the State, but managed by a local authority. And the positive externalities linked to the presence of this structure fall directly on the said communal territory. Although a few actions are taken from time to time, the general trend is for Ramongo town council to gradually withdraw from issues relating to the current and future protection of the dam. An official from the town hall confided that :

> *"Yes. At the beginning, we tried to organise the operators so that when someone arrived, they could be registered, so that they could be authorised to set up at and in return they could pay something, a small tax. But it didn't work, because the landowners were reluctant not willing to accept. They preferred a direct collaboration between them and the operator. They didn't want the town council to interfere.* [...] *The town council set up a project to protect the banks of the dam. But we weren't able to carry out the project, the farmers refused".* (Interview with Badoubo, a manager at Ramongo town hall, November 2022).

Basically, the Ramongo town council wants to make its contribution to saving the dam. However, its ambitions have been "dampened" by the inadequacy of its financial, technical and material resources, or even by its lack of real political will. When one considers the importance of such a structure for the municipality, the ambiguous role of the various actors in its governance must be questioned. The mayor's office is both in a position to regulate uses and in a territorialist position, given that the dam falls within its territorial jurisdiction and that it would prefer to preserve this structure in order to be the real beneficiary in the long term. Despite the efforts made by the mayor's office to preserve the dam and take long-term ownership of it, the fact remains that at the local level, i.e. in the villages of Salbisgo-Dapoya and Salbisgo-Itaoré, a committee has been set up to closely monitor the state of the dam and, if necessary, provide appropriate solutions to ensure its long-term survival.

As far as the Salbisgo Dam PEC is concerned, the committee has made some progress in the field. One of the people in charge said : "As I was saying, the digging of canals has stopped, and we have had to make people aware of the need to stay away from the dam bed for gardening and other work. They complied to some extent, but not completely.[6] " He added, however, that "the committee is acting from a conservation perspective as well as a financial one. I say 'financial', because to protect, you need money, for activities in the field and so on. So, you need financial resources to be able to safeguard the dam.[7] " These few actions by the CUE in the field effectively prove that the organisation has both an environmentalist and a territorialist rationale. The committee's ambition is to protect the dam from harmful practices, but also to appropriate some of the rights on the use of the dam.

From a technical point of view, the DREA-COS is making its contribution to the preservation of the dam, even if the local populations remain irresistibly resistant to the management changes the structure is making. Nevertheless, the structure remains committed to supporting the CUE in its technical and administrative approach. This technical-administrative logic, clearly perceptible in the actions of the DREA-COS, is closely followed by the Agence de l'Eau du Mouhoun (AEM), acting sometimes in synergy with the DREA-COS to preserve the dam.

As far as the AEM is concerned, it is interesting to note that in the case of the Salbisgo dam, initiatives to manage the water resources of the structure remain timid for the time being. Furthermore, they are sometimes nipped in the bud because of the internal management mechanisms initiated by the local populations, in contradiction with the agency's philosophy. Unsuccessful management attempts leave the structure open to doubt and reticence as regards future actions. Fundamentally, the AEM's rationale is one of sustainable preservation of the dam's water resources. This rationale cloaked in a technical-administrative logic in the sense that organisation, hierarchisation or distribution of roles, training and awareness-raising remain the main roles and objectives pursued by the structure.

[6] Interview with Mongué, a member of the Salbisgo dam PEC, November 2022.
[7] *Idem.*

2.2. Discussion

The logic of the stakeholders at the Salbisgo dam is not isolated. Some examples can be found almost everywhere around developed bodies of water. An analysis of water governance around the Salbisgo dam sheds light on the concrete conditions under which a common resource can be managed collectively in a sustainable manner, or not.

Reading these results in the light of Elinor Ostrom's theory sheds light on the strengths, limitations and challenges faced by local management systems and the logics of action at work. In the case of the Salbisgo dam, several of these principles are partially present. For example, the setting up of a local management committee demonstrates a desire to structure water use collectively. Some users are involved in management, rules exist and attempts are made to mediate in the event of conflicts. However, our observations also reveal profound limitations in the effective application of these principles. Firstly, usage rights are not always clearly defined or equitably distributed : certain groups, such as the most influential market gardeners, have privileged access to the resource. On the contrary others such as fishermen, brick-makers and certain livestock farmers remain marginalised, sometimes excluded from decision-making spheres. This imbalance weakens the sense of justice and undermines collective adherence to common rules. Secondly, the applicable rules are often poorly understood and respected or even circumvented, particularly during periods of water stress. Monitoring is weak or almost non-existent, sanctions are rarely applied, and conflicts resolution mechanisms remain informal or dependent on external mediation. This shows that collective governance remains fragile, as it lacks shared legitimacy and the capacity for local autonomy. So, although Ostrom's model is theoretically applicable, its implementation at the Salbisgo dam is coming up against structural and social obstacles such as inequalities between stakeholders, poor coordination, the weight of external institutions and a lack of inter-stakeholder dialogue. Our results therefore call for a pragmatic re-reading of Ostrom's theory : collective management is neither automatic nor universal. It must be contextualised, co-constructed and supported by a process of shared responsibility, in line with the socio-economic and cultural realities of the area.

Our field data reveals recurring conflicts of use between market gardeners, livestock farmers, brick-makers and fishermen, particularly during the dry season. Each group tends to defend its own interests (priority access to water for irrigation, livestock watering or craft activities), often to the detriment of the others, without necessarily taking into account the resource's capacity for renewal. This logic is a perfect illustration of the paradox posited by Hardin : an individual rational logic in the short term becomes collectively destructive in the long term. The creation of the local management committee was intended to regulate these uses and prevent a "tragedy of the commons". However, our observations show that this committee has little legitimacy with certain marginalised groups (such as fishermen and brickmakers), and the rules of distribution are sometimes circumvented or little respected. This lack of shared governance contributes to maintaining a climate of mistrust aggravating tensions. Thus, our study confirms Hardin's warning that the absence of clear rules, collective control and sanctions can lead to the degradation of the common resource.

Users of water from the Salbisgo dam are driven by the desire to exploit the dam to meet unnecessary needs. This jeopardises the actual sustainability of the dam. Furthermore, the use of phytosanitary products and chemical fertilisers is the cause of water pollution in the Téra dam in Niger. In addition, agricultural activity, particularly market gardening and fruit growing, consume the dam's water resources. In fact, as a result of the stirring up of the land in the vicinity and the subsequent water erosion, materials are carried away and deposited at the bottom of the dam. The pipes dug from the dam up to the irrigated plots also contribute to the dam filling in, because the flow of water facilitates the transit of rubbish and mud towards the dam. Livestock farming is characterised by the presence of cattle, most of which drink water from the dam. The smearing and defecation of animals near the water pollutes the water, despite the fact that this water is used to supply drinking water to the town of Téra (Hassane Seyni *et al.*, 2014). Similarly, the Salbisgo dam, although used by the ONEA to supply drinking water to the town of Koudougou, is polluted by the chemicals used by market gardeners. Also, the herds of animals that come to drink defecate on the banks. There is also a lot of wastage of water resources through the use of gravity-fed irrigation canals and cracked pipes. In the Senegal River valley, there are more often than unbroken canals leading to wastage of water resources. There is no economical use of water resources (Le Roy, 2000). In spite of this inconvenient use of the dam's water resources due to the essentially financial logic motivating some of stakeholders. Others actors, are more focused on regulating uses with a view to curbing or mitigating unsuitable practices on the structure. In the same vein, we note that, as a general rule, the world's states are setting up regulatory and arbitration bodies. Some of them placed under the authority of the state with its democratic legitimacy, others under the authority of rural communities, which are also duly representative of society (Ruf, 2000).

CONCLUSION

There are many and sometimes divergent logics surrounding the Salbisgo dam. They contribute to the deterioration of the hydraulic structure. These logics stem from how they intervene on the dam, the behaviours and the tangible or underlying reasons justifying these different ways of acting. On the one hand, there are the direct stakeholders who act directly on the structure with the inevitable consequences of their *modus operandi*. On the other hand, there are the indirect stakeholders playing a regulatory role in the uses made by the direct ones. As far as the direct stakeholders are concerned, the first are the agricultural users such as market gardeners.

Most of them come from localities near or even far from the dam, and are financially interested in exploiting the dam. Then there are the livestock farmers, whose herds consume a large volume of water from the dam. In addition, fishermen and brick-makers have a financial interest in the dam, but also, and above all, in preserving it. Also, the ONEA (Office National de l'Eau et de l'Assainissement) is a major actor in the extraction of water from the dam. It withdraws large volumes of water to supply the town of Koudougou with drinking water. At the same time, it carries out protection activities to ensure the long-term existence of the dam. This means that the ONEA's approach is based on water supply, the environment and, above all, finance. As for the indirect stakeholders, their influence is not yet perceptible. The Ramongo town council, the Centre-West Regional Water and Sanitation Department (DREA-COS), the Salbisgo Dam Water Users' Committee (CUE) and the Mouhoun Water Agency (AEM) are all involved in both technical and administrative issues, as well as environmental issues. The general trend in the logic of the actors reveals that most of the users of the dam's water are hardly concerned about the "perverse effects" of their practices on the structure. Other users tend to sabotage it even though they benefit fully from it. Participatory management would therefore make it possible to regulate the use of the dam's water and ensure the long-term future of the structure.

REFERENCES

1. Ancey V., Wane A., Müller A., André D., et Leclerc G., (2008), *Payer l'eau au Ferlo : stratégies pastorales de gestion communautaire de l'eau,* in *Autrepart*, Presses de Sciences Po, Vol.2, N°46, pp. 51-66.
2. Ballet J., (2007), *La gestion en commun des ressources naturelles : une perspective critique*, in *Développement durable et territoires*, Varia (2004-2010), 18 p.
3. Baron C., et Bonnassieux A., (2011), *Les enjeux de l'accès à l'eau en Afrique de l'Ouest : diversité des modes de gouvernance et conflits d'usages*, in *Monde en Développement*, Vol.39-2011/4-n°156, pp. 17-32.
4. Bationo F., (2020), *La gestion de l'eau sur les périmètres irrigués du barrage de Salbisgo (Burkina Faso),* mémoire de master en aménagement du territoire et gouvernance locale, Université Norbert ZONGO, Département de géographie, 99 p.
5. Bédoucha-Albergoni G., (1976), *Système hydraulique et société dans une oasis tunisienne*, in *Études rurales*, N°62, pp. 39-72.
6. Bernoux P, Bion J-Y, Cohen J-C et Meunier-Chabert M, (2001), *L'analyse des systèmes d'acteurs : Cahier n°1 : Diagnostics de territoire et systèmes d'acteurs,* Rapport de recherche, Centre d'études sur les réseaux, les transports, l'urbanisme et les constructions publiques (CERTU), 104 p.
7. Bon E., (2001), *Systèmes d'irrigation par gravitation du nord de l'Inde : le rôle du capital social dans la gestion locale des ressources communes*, in *Tiers-Monde*, Les nouvelles politiques de l'eau. Enjeux urbains, ruraux, régionaux, tome 42, N°166, pp. 333-351.
8. Bréchet J-P et Schieb-Bienfait N, (2011), « Logique d'action et projet dans l'action collective : Réflexions théoriques comparées », in *Finances Contrôles Stratégies*, Vol.14, N°1, pp. 101-129.
9. Calas B., (2011), *Introduction à une géographie des conflits… en Afrique*, in *Les Cahiers d'Outre-Mer*, Revue de géographie de Bordeaux, N°255, pp. 295-320.
10. CAPES (Centre d'Analyse des Politiques Économiques et Sociales), (2007), *Contribution des cultures de saison sèche à la réduction de la pauvreté et à l'amélioration de la sécurité alimentaire*, Rapport provisoire, Ouagadougou, 120 p.
11. Commune de Ramongo, (2013), *Plan communal de Développement de Ramongo, 2014-2018*, document définitif, 73 p.
12. Coulibaly A., Ouattara H. A., et Cecchi P., (2007), *Pastoralisme et stratégies d'acteurs locaux : pluralisme de règles et conflits*, in L'eau en partage : les petits barrages de Côte d'Ivoire, Editions IRD, pp. 201-215.
13. Drabo K, Yaméogo J et Sawadogo L, (2016), « Examen de la gestion et stratégies de protection des berges du lac Bam à Kongoussi au Centre-Nord du Burkina Faso », in *International Journal of Biological and Chemical Sciences*, Vol.10, N°3, pp. 944-956.
14. Fossi S., Bakouan N. D., Traoré A., et Barbier B., (2014), *Variabilité de la crue du fleuve et options agricoles dans le delta intérieur du Niger : riziculture ou bourgouculture ?* in *Sciences Eaux & Territoires*, la revue d'Irstea – Article hors-série, N°15, 5 p.
15. Garraud P, (2016), « Jeux d'acteurs, propriétés et dynamique d'un « système d'action complexe » : les relations internationales en Europe et le déclenchement de la Seconde Guerre mondiale », in *Nouvelles Perspectives en Sciences Sociales*, Vol.11, N°2, pp. 43-80.
16. Girard S., (2006), *Politique de l'eau et gestion locale des ressources hydriques dans les Andes Équatoriennes, le cas du bassin versant du Rio Ambato*. PCSI-4e Séminaire international et interdisciplinaire, Montpellier, France, 14 p.
17. Girard S., (2008), *Quatre siècles de luttes et d'alliances pour le contrôle de l'eau dans le sillon interandin : du monopôle des haciendas sous la colonisation espagnole au récent réveil indien, le cas du versant de Santa Rosa-Pilahuin (Équateur),* in *Bulletin de l'Institut Français d'Études Andines*, Vol.37, N°2, pp. 375-401.

18. Girard S., (2009), *L'accès à l'eau et la participation à sa gestion : un double blocage pour l'amélioration de l'irrigation dans les Andes équatoriennes ; le cas du versant de Santa Rosa – Pilahuin*, in Ayeb H., et Ruf T., (Éds.,), *Eaux, pauvreté et crises sociales*, pp. 423-442.
19. Hassane Seyni H, Ousmane B, Soumana I et Yamba B, (2014), « Impacts des activités socio-économiques sur les ressources en eau du barrage de Téra au Niger », in *Afrique Science*, vol. 10, N°2, pp. 149-172.
20. Hmouri A., Bouzidi Z et Kuper M., (2017), *Révéler ce qui fait communauté dans un système irrigué par l'analyse des dynamiques conflictuelles*, in *Revue Marocaine de Sciences Agronomiques et Vétérinaires*, Vol.5, N°1, pp. 83-95.
21. Ivars B., et Venot J-P., (2018), *Entre politiques publiques et matérialité : associations d'usagers et infrastructures d'irrigation au Cambodge,* in *Nature Sciences et Sociétés*, vol.26, N°4, pp. 383-394.
22. Jozan R., et Baubion C., (2004), *Gestion de l'indépendance et legs soviétique en Asie centrale : un souffle de réforme sur la politique de l'eau en Ouzbékistan*, in *Cahiers d'Asie centrale*, N°13-14, pp. 261-284.
23. Keita I., Bélières J.-F., et Sidibé S., (2001), *Gestion du système hydraulique de l'Office du Niger : évolutions récentes et perspectives,* in Atelier PCSI (Programme Commun Systèmes irrigués) sur la gestion. La gestion des périmètres irrigués collectifs, Montpellier, France, pp. 65-81.
24. Koala S., (2014), *Variabilité climatique et valorisation des ressources en eau dans le bassin versant du barrage de Salbisgo*, université de Koudougou, mémoire de maîtrise, département de géographie, 128 p.
25. Le Roy X., (2000), *La difficile mutation de l'agriculture irriguée dans la vallée du fleuve Sénégal,* in Rivière-Honegger A., Ruf T., (dir.), *Approches sociales de l'irrigation et de la gestion collective de l'eau : démarches et expériences en France et dans le monde*, pp. 165-177.
26. Le Visage S., et Kuper M., (2019), *Sous le gölet, les forages. Infrastructures d'irrigation et trajectoires des territoires de l'eau dans la région d'Izmir (Turquie)*, in *Développement durable et territoires*, Vol.10, N°3, 22 p.
27. Maïga Y, (2020), *Problématique de la gestion durable paysanne des périmètres maraîchers de Sourgou dans la province du Boulkiemdé (Burkina Faso) : cas du foncier et de l'environnement*, mémoire de master en aménagement du territoire et gouvernance locale, Université Norbert ZONGO, département de de géographie, 147 p.
28. Maury C et Richard S, (2011), « La difficile gestion de l'eau en contexte transfrontalier : un exemple franco-espagnol », in *Articulo-Journal of Urban Research*, Vol.6, 12 p.
29. Mboungou I., Ag Ehiya A., et Maisonnave E., (2017), *La gestion des conflits autour des points d'eau : l'expérience de SOLIDARITÉS INTERNATIONAL dans la région de Kidal*, 23 p.
30. Mormont M, (2006), « Conflit et territorialisation », in *Géographie, économie, société*, Vol. 8, N°3, pp. 299-318.
31. Partoune C, (2009), « Comprendre la logique des acteurs », in Tableau de bord *« Participation et espaces publics »* - Pour un développement et une gestion concertée des espaces publics », Recherche Topozym pour la Politique scientifique fédérale, partenariat Ulg (UGES), KUL (USEG), Institut d'Eco-Pédagogie (IEP), Vorming plus Antwerpen, article 52.
32. Piveteau V et Partoune C, (2010), « Un exemple d'exploitation d'un jeu de rôle : l'analyse du jeu des acteurs », in *Lettre du Graine*, N°19, pp. 34-35.
33. Platteau J.-P., (2004), *Le développement décentralisé, stratégie de réduction de la pauvreté*, in *Afrique Contemporaine*, Vol.3, N°211, pp. 159-214.
34. Plottu É et Plottu B, (2009), « Logiques territoriales et aménagement du territoire : quelles règles de coordination et de décision ? » in *Lavoisier* « Géographie, économie, société », Vol.11, N°4, pp. 283-299.
35. Pumain D, (2001), « Villes, agents et acteurs en géographie », in *Revue européenne des sciences sociales*, N°121, pp. 81-93.
36. Reynard E, (2005), *Transformations récentes de l'irrigation communautaire en Valais (Suisse),* Lausanne, Institut de Géographie, 9 p.
37. Rivière-Honegger A., Rieu T., Ruf T., et Terreau J- .P., (2000), *L'eau unit les sciences sociales,* in Rivière-Honegger A., Ruf T., (dir.), *Approches sociales de l'irrigation et de la gestion collective de l'eau : démarches et expériences en France et dans le monde*, pp. 229-230.
38. Robert E, (2011), *Les risques de pertes en terre et en eau dans le bassin versant de la Doubégué (Burkina Faso) : pour une gestion intégrée*, université Michel de Montaigne-Bordeaux 3, thèse de doctorat en géographie, 540 p.
39. Ruf T., (2000), *Du passage d'une gestion par l'offre en eau à une gestion par la demande sociale : ordre et désordre dans les questions d'irrigation et de conflits d'usage de l'eau,* in Rivière-Honegger A., Ruf T., (dir.), *Approches sociales de l'irrigation et de la gestion collective de l'eau : démarches et expériences en France et dans le monde*, pp. 9-33.
40. Ruf T., (2004a), *Les grands principes de la gestion sociale — concertée — de l'eau pour l'agriculture,* in Rivière-Honegger A., Ruf T., (dir.), *La gestion sociale de l'eau, concepts, méthodes et applications,* pp. 7-14.

41. Ruf T., (2011), *Le façonnage des institutions d'irrigation au XXe siècle, selon les principes d'Elinor Ostrom, est-il encore pertinent en 2010 ?* in *Natures Sciences Sociétés*, Dossier « Le champ des commons en question : perspectives croisées », vol.19, pp. 395-404.
42. Ruf T, (2017), « L'accès à l'eau, une question de justice pluriscalaire », in *Objectifs de développement durable*, ODD6, pp. 160-170.
43. Sanou K, Nikiema A, Dipama J-M, et Cecchi P., (2013), *Communalisation et gestion intégrée des ressources en eau dans le bassin de Nariarlé (Burkina Faso) : échelles imbriquées et prérogatives tronquées*, in Charlery de la Masselière B, Thibaud B, Duvat-Magnan V (Dir). *Dynamiques rurales dans les pays du Sud. L'enjeu territorial*. Presses Universitaires du Mirail (PUM), Toulouse, France, pp. 227-241.
44. Selmi S., (2000), *La gestion collective des lacs collinaires en Tunisie : vide juridique et pouvoir social important*, in Rivière-Honegger A., Ruf T., (dir.), *Approches sociales de l'irrigation et de la gestion collective de l'eau : démarches et expériences en France et dans le monde*, pp. 153-164.
45. Sidibé Y., (2012), *Tarification non linéaire de l'eau d'irrigation en cas de ressource aléatoire*, université de Montpellier, thèse de doctorat en Économie et Gestion, 217 p.