

Socio-Economic Uses of The River Oueme: From Human Activity to the Deterioration of a Common Resource (Socio-Economic Uses of the Oueme River: Human Activities Leading to the Deterioration of a Common Resource)

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ABSTRACT: The Ouémé River, Benin's main watercourse, is a strategic natural resource for domestic, agricultural, fishing, industrial and ecological uses. This research aims to analyze the anthropogenic actions that are contributing to the deterioration of this watercourse. The qualitative investigations used semi-structured interviews and direct observation as data collection techniques, accompanied by an interview guide and an observation grid, respectively. Through reasoned selection, a sample of thirty-two (32) actors was constituted according to the principles of diversification and saturation. Triangulation, content analysis and the theory of the "tragedy of the commons" were used to process the empirical data. The results show that the Ouémé River is used for fishing, agriculture, livestock farming, river sand mining, river transport, rituals, etc. These different uses of the river, perceived as a common good, accentuate its overexploitation and jeopardize its sustainability. A redefinition of the rules for collective management of the resource under investigation would make it possible to gradually reduce its deterioration.

KEYWORDS: Ouémé River, anthropogenic actions, social representations, deterioration.

INTRODUCTION

Human activities such as agriculture, fishing, and livestock farming, which provide the bulk of income for producers in the lower Ouémé Valley (J. Laourou, 2010), have always been contingent upon the presence of water resources in their territory. Nearly all economic activities depend heavily on the existence of water; without water, nothing grows, without water, life is practically impossible (H. Dupriez and P. De Leener, 1990). Consequently, people move and live according to the availability of water in their environment. Water has a social function; it is first and foremost a community and heritage asset before being an economic good (ML Bouguerra, 2003). Similarly, L. Francoeur (2004) affirms the fundamental right of access to water resources for all citizens, emphasizing that water is, above all, a right of the people. Since water is a constituent element of ideologies and beliefs, it is often attributed the importance of symbolic attachment (C. Vézina, 2008) but also one or more modes. Regarding governance, JP Olivier de Sardan (2009) argues that the coexistence of numerous modes of local governance around a resource is a central characteristic of African countries. The process of "stacking" power structures within local arenas is indeed widespread: the establishment of a new political body (by the state or development agencies) does not

replace existing structures but is added to them. The "polycephaly" characteristic of "village power structures" originates there (T. Bierschenk and JP Olivier de Sardan, 1998).

In research on the social values of access to water, researchers indicate that "[...] water, the source of life [...], is part of the common heritage [...]. Water seems, by its very nature, to belong to no one and to be offered for common use" (N. Belaidi and A. Euzen, 2009). These authors clearly state that water is a common good of humanity and that, presumably, no one has the right to private ownership of it. A. Takpé (2009) says that "water is a natural gift," as if to signify that water is a resource offered to human beings by nature. From a philosophical perspective, one could say that only nature has a right to private ownership of water, a collective resource over which the exercise of:

The legal status raises the issue of water ownership rights [...] Benin was a primitive society for whom law was the sum of custom, morality, practices, and everything that was socially accepted but not recorded in a document. In this primitive Beninese society, the common ownership of water resources formed the basis of inter-community relations (B. Adjou-Moumouni, 2008).

Referring to the Customary Law of *Dahomey*, an unpromulgated legal document that emphasizes water ownership, the same author stresses that the ownership in question is collective. Individual water ownership is not recognized (Ibid.). Article 28 of the forty-one laws of Hwëgbaja¹ stipulates in this regard that "watercourses are the property of the community. Anyone who appropriates one with the intention of engaging in trafficking must be put to death" (JC Alladayè, 2008). These considerations are also present in the Ouémé Valley, more specifically in the communes of Bonou and Aguégoués, where exploratory surveys have shown that the Ouémé River belongs to no one. In this context of collective ownership implying common use, each stakeholder enjoys unrestricted access to and use of the shared resource. Proposing a type of governance of the common good, Mr. Tidjani Alou (2006) believes that water, being a public good, should be managed by the public sphere. Indeed, the populations of Aguégoués and Bonou recognize the Ouémé River as a shared resource, a public good. And, in this sense, domestic, sacrificial, and economic uses, among others, that contribute to its degradation persist despite the actions undertaken by members of civil society, the government, and local authorities to uphold the principles of Integrated Water Resources Management (IWRM). These empirical observations raise the question: How do socio-economic practices structure the deterioration of the Ouémé River?

Assuming that uncontrolled socio-economic uses of the Ouémé River contribute to its deterioration, this article aims to analyze them. To achieve this objective, a methodological approach was used to collect field data, which was then discussed in light of a theoretical model.

1. METHODOLOGICAL APPROACH AND THEORETICAL MODEL

1.1. Methodological approach

To conduct this research, a qualitative approach in the human and social sciences was adopted. This methodological choice allowed for discussions with different social groups through semi-structured individual interviews and for observation of practices related to the uses of the Ouémé River. The qualitative approach, which Paillé (2007) describes as a "logic of proximity," makes it possible to capture experiences, actions, and discourses as closely as possible to lived realities. Within this framework, 32 semi-structured interviews were conducted, using purposive sampling, with riverside residents, institutional actors, local elected officials, elders, and community leaders. The selection of research participants was based on criteria such as residence in the research area, participation in an activity related to the Ouémé River, and membership in a public or private institution or a

non-governmental organization involved in the management of the Ouémé River. Direct observation supplemented the interviews, allowing for the documentation of the various uses of the Ouémé River. The data collected were processed using content analysis, then compared with the theory employed.

1.2. Theoretical Model

The "tragedy of the commons" (G. Hardin, 1968) served as the theoretical framework for analyzing the collected data. Hardin warns against the dangers of overexploitation, explaining that some resources are open to all, with few restrictions on their use. Faced with a resource, each individual's tendency is to use it to maximize their own immediate interest while neglecting the investment or effort that could preserve it for future shared use. In this scenario, all users collectively deplete the common resource. This is referred to as overexploitation. According to the tragedy of the commons, the non-excludability of use and rivalry in resource exploitation are the root causes. The only way to prevent this tragedy is through government coercion or the division of common goods into private property (G. Hardin, 1968). However, a distribution of individual ownership of the Ouémé River is not feasible. The tragedy of the commons theory is suitable for analyzing the results of this research, insofar as the Ouémé River is a collective resource that is subject to different uses contributing to its degradation.

2. RESULTS

The results are organized into two essential points, namely: the socio-economic and cultural uses of the Ouémé River, and finally the influence of socio-economic uses on the deterioration of said river by the riverside communities of Bonou and Aguégoués in Southwest Benin.

2.1. Socio-economic uses of the Ouémé River

The riverside communities use the Ouémé River for various purposes. Data collected in the field has made it possible to identify domestic, economic, and cultural uses of the collective resource investigated.

- Domestic uses of the Ouémé River

The Ouémé River, considered a public good, a gift from God, is one of the most consumed water sources for the riverside communities. They place great value on the river water for domestic uses such as laundry, washing dishes, drinking, etc. For them, the water of the Ouémé River is very useful, as illustrated by the words of one interviewee who stated:

The river water allows us to do laundry and other household chores. We drink river water more than anything else. It hasn't killed our grandparents since time immemorial, so we won't die either. To tell you the truth, the river water is softer to drink. This water

¹A King of the kingdom of Danxomé. During his reign, he established laws to which his subjects had to submit.

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contains all the vitamins because it's where we defecate and throw our garbage; all of this gives the river water its softness. If you want, you have to give me some gari and you'll see how I'll mix it with the river water right here in front of you, and that's what we do every time we go fishing (DG, 47 years old, Fisherman).

In the same vein, another informant adds:

"It's the river water that our parents drank, that we drink, that our children drink. But the State sees that it's not water that people should drink. That's why they started by building water pumps for us, and we have water pumps everywhere. Yet we have difficulty drinking it; we say that pumped water doesn't taste good, and we drink the water from our river, adding the azure stone to it" (AL, 35 years old, River resident).

These verbatim accounts show that despite the actions taken by the State to provide drinking water to the riverside communities, the latter prefer to consume water from the Ouémé River. They also use it for other purposes in their households. The remarks of one interviewee support this view when she states:

We use the river water for many things. We women use the river water the most. We wash our dishes with river water. If our clothes are dirty, we use the river

water to wash them. So we regularly go to the source to do these household chores. We wash our bowls and loincloths in the river (OI, 38 years old, River dweller).

Another informant concurs when she states:

I like going to the riverbank to do laundry and cleaning because there, you don't have to worry. You wash the bowls and then rinse them right away, no need for any formalities. It's the same with the pagnes (wrappers). What I like most is that by the river, you find lots of people, and while you're working, you laugh, hear stories, so in the end, you clear your head before going back home to your worries. If you're feeling lazy and you go to the riverbank with your bowls or pagnes, the laziness disappears and you get a good job done (QC, 32 years old, Riverside resident).

The comments of this interviewee show that women find it easier to carry out domestic tasks by the river than at home. They feel that once they are by the river, they can clear their heads and quickly complete their chores. The Ouémé River, in addition to motivating them to work, provides a place of recreation for the women living along its banks. After using the water by the river, the women carry it back to their homes for cooking. They collect a reasonable amount of water from the spring and store it in their houses. Figure 1 provides an overview of domestic practices around the Ouémé River .



Plate 1: Domestic uses of water from the Ouémé River

Source: R. Kounakou 2020, 2025

Plate 1 illustrates some uses of the Ouémé River by the local population. Images A and B show laundry and dishwashing on the riverbank. Image C shows a child fetching water from

the river for their home. Image D shows children emerging from the river after bathing.

During data collection, it was observed that riverside populations use the Ouémé River as a toilet, in that most go

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there to relieve themselves, as indicated by one interviewee who said:

When we're fishing and need to relieve ourselves, we do it in the river. Many people wash in the river because there aren't enough latrines here. Only those with money have been able to get their own latrines. Some take their dugout canoes to the river to relieve themselves because there aren't enough

latrines in the village. Others have even built their own latrines on the river (MT, 27 years old, Fisherman).

Because the river is considered everyone's property, it is subject to all sorts of exploitation by the local communities. They defecate in the water source, explaining this practice by the lack of latrines in the community. The following photo (1) provides a brief overview of waste management by the local population.



Photo 1: Dumping of piles of garbage in the Ouémé River

Source: R. Kounakou, 2025

Photo 1 shows piles of garbage dumped by riverside communities in the Ouémé River. This situation demonstrates the various ways in which the river is exploited by the local population. Each group uses the river for its own benefit. These activities, in one way or another, contribute to the river's pollution.

- *Economic uses of the Ouémé River*

The riverside communities rely on the river for their economic needs. Those interviewed stated that the Ouémé River is a true source of wealth. For them, it is the river that sustains them in their communities because it allows them to carry out economic activities. As an example, one riverside resident mentioned the following:

In reality, if this river weren't here, it would be impossible for us to still be on this earth; we would already be in other places, and most of us would have left. It's thanks to the river that we are here, it's thanks to the river that the riverside communities are still here. It's the river that feeds us. It's our source of income; it's everything to us. We who are here have no other activities than those related to it (GB, 41 years old, Riverside resident).

The Ouémé River is a source of income for the riverside communities. Fishing, agriculture, sand mining, and transportation are the various economic activities linked to the river. Fishing is a vital source of sustenance for most of the riverside communities. In this regard, one stakeholder interviewed stated:

In our area, if there's a drought, it suits us because everyone is trying to get rich by exploiting the sand. In the fishing sector, many people fish. Both of these activities benefit us. But fishing remains the dominant activity. It offers several advantages to the communities. (DO, 39 years old, River resident).

From these statements, we understand that these riverside populations live mainly from activities linked to the Ouémé river such as fishing, the exploitation of river sand, etc.

- *Cultural uses of the Ouémé River*

The Ouémé River is considered by the local people to be a gift from the deity Dan (serpent). They make offerings and sacrifices to the deity in the river. The riverside communities use the Ouémé River for ritual and sacrificial purposes, aiming to maintain peace and tranquility within their communities. Practitioners of traditional religions offer prayers and sacrifices to the river, imploring its protection and seeking peace in all river-related activities. This tradition is intended to maintain order and peace around the river. It should be noted that Christians also use the Ouémé River for baptism and purification rituals. This is confirmed by the following informant:

In our church, we use the river for baptisms. We also use the river water to purify ourselves, and we immerse the sick in the river, where they are healed. Sacrifices are offered on the riverbank. Pastors and priests baptize the faithful in the river (Priest of the Celestial Church of Christ, 53 years old).

2-2. Influence of socioeconomic uses on the deterioration of the river

Various practices, whether social, economic, or cultural, contribute to the degradation of the Ouémé River. The dumping of household waste in the river leads to its obstruction and pollution. This waste decomposes over the years, deteriorating the water quality and creating a risk of fish poisoning. As one local resident explained, "*To be honest, we throw the garbage in to create dry land. But over time, the garbage decomposes in the water, making the river dirty. And if the water is dirty, it's not good for us or for the species that live in the river. In short, the garbage is destroying the river.*" Therefore, dumping garbage in the river pollutes the water and destroys the Ouémé River's resources. Since the river is a resource freely accessible to the entire riverside community, the responsibility for its destruction is shared. Similarly, the transformation of the river into a water close constitutes a collective practice of river destruction. Once in the river, organic matter decomposes, leading to cellular putrefaction, which is noticeable through the odors it emits. This is how the river water degrades upon contact with organic matter.

Household activities such as laundry and dishwashing are responsible for the deterioration of the Ouémé River due to the chemical agents contained in detergents (powdered laundry detergents: OMO, powdered soap) and other substances used. There are also deviant behaviors observed among riverside communities, marked by the disposal of food scraps, oil, and beverages into the water. This is confirmed by the following interviewee:

If we go to the riverbank to wash the bowls, they are rinsed in the river water before and after washing; we don't pour

water on them as we do on dry land. We put everything in the water: the bowls containing oil, everything. For laundry too, when we wash the loincloths, we do it in the river and let the water carry the dirt away. It's not that we pour the water from the dirty loincloths out of the river; everything goes into the river (NE, 27 years old, Riveraine).

It is understood that the riverside communities, by using the river for domestic purposes, throw all the dirt from their dishes and laundry into the river. Thus, oil from the dishes and soap enter the river. They believe that the river's runoff carries these foreign substances away. This behavior pollutes the river water and is harmful to the aquatic species living in it, leading to the river's deterioration. The riverside communities, believing the Ouémé River to be a gift from the Dan deity, make sacrifices and offerings to this deity. In practice, this leads to the dumping of ingredients (red palm oil, boiled corn, bananas, yams, flour, etc.) used for sacrifices and/or expiatory rites into the river. These practices, observed in all the communities along the Ouémé River, cause a chemical imbalance in the river's waters through accumulation, resulting in their degradation.

Fishing, considered the primary activity of riverside communities, is partly responsible for the river's degradation. Indeed, with the use of akadja (depositing palm branches and other plants in the water), the branches are not removed and the debris is not dredged, leading to decomposition that pollutes the river water. Furthermore, fish create nests in these branches. However, these branches undergo transformations and produce flowers, which does not always promote good water flow or fish development. Photo 2 illustrates the obstruction of the aquatic environment by the akadja installations.



Photo 2: The Ouémé River is strewn with branches related to the practice of akadja.

Source : Field data, 2020

Photo 2 shows the unsanitary condition of the river. Uncontrolled or intensive fishing practices directly result in the degradation and overexploitation of the Ouémé River's fish stocks. In this regard, one interviewee added:

What further illustrates this is the problem: the water hyacinths you see there, commonly called Tokplé. These water hyacinths, along with the scourge of overexploitation by fishermen themselves, are causing the invasion to multiply. In other words, there is congestion, the body of

water is being invaded by these plants, and the mud is rising. This river is shrinking. That is why, in the meantime, the government has resolved to stop fishing activities using the practice of akadja (SE, 48 years old, Local Elected Official). Fishing practices, particularly those of the akadja, lead to overfishing and clogging of the Ouémé River. All of this discourages the preservation of the resource. The excessive exploitation of the river through sand dredging contributes to its widening.

3. DISCUSSION

The results of this research show that the Ouémé River belongs to the riverside communities, who use it in various ways to meet their basic needs. These uses are both social and economic. It is accessible to all, and each community uses it according to its needs. The Ouémé River becomes an acquired asset for these populations, a freely accessible resource that can be described as a common good (G. Hardin, 1968). The stakeholders explain that the river belongs to the riverside communities, which justifies their free access. This freedom of access to the river, coupled with equal access to its resources, condemns its preservation to a tragic fate (G. Hardin, 1968). Indeed, the riverside populations are overusing the river. Domestic uses such as laundry and dishwashing lead to the discharge of detergents into the river, thus disrupting the water's balance. Sand extraction leads to the widening of the riverbed, which stakeholders attempt to manage by dumping garbage into the river. This results in the silting up and poisoning of the Ouémé River. Solid waste dumped in the river or on its banks contributes to bacterial contamination and pollution from organic matter. Organic matter is considered a pollutant because it depletes the environment of oxygen (P. Gnohossou, 2006). The various uses of the river by stakeholders for their survival contribute significantly to the deterioration of the Ouémé River. The Ouémé River is therefore subject to overexploitation, ultimately detrimental to both the river and the stakeholders involved. This is reflected in the tragedy of the commons (G. Hardin, 1968).

Faced with this overexploitation of the Ouémé River, G. Hardin (1968) proposed either state regulation or privatization of the river. He suggested enclosing the Ouémé River and privatizing access rights for the riverside communities. In this way, everyone could benefit from the river without contributing to its production, ultimately leading to its loss to all. This is a description of the tragedy of the commons (G. Hardin, 1968).

CONCLUSION

This article, by problematizing the deterioration of natural resources, particularly the Ouémé River, has linked it to the various socio-economic uses of the riverside communities as essential factors in this phenomenon. These include fishing, agriculture, livestock farming, river transport, river sand

extraction, laundry, domestic work, rituals, etc. This intense dependence of the riverside communities does not guarantee the safeguarding and sustainability of water resources. Furthermore, the most common perceptions of the riverside communities, which consider the river a gift from the gods, a public good, and a local economic asset, also constitute an area of conflict between immediate needs and the sustainability of the ecosystem. All of this influences their adherence to the formal governance norms of the Ouémé River in southeastern Benin.

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