

Solid Waste Valorization and the Challenge of Social Representations in Ganvié, Benin

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ABSTRACT: Ganvié, a historic lacustrine settlement in southern Benin, faces growing environmental and public health challenges due to inadequate solid waste management. This article explores how local social representations of waste influence both the practices of disposal and emerging valorization strategies within this aquatic urban space. Drawing on qualitative fieldwork including interviews, participant observation, and discourse analysis this study highlights the ambivalent perceptions of waste among residents, shaped by historical, symbolic, and material factors. While plastic and synthetic materials are often perceived as invasive and harmful, organic and fishing-related wastes are more easily reintegrated into domestic or agricultural uses. At the same time, longstanding beliefs in the lake's natural ability to absorb and regenerate waste persist, despite increasing evidence of pollution and environmental degradation. External initiatives aimed at improving waste management frequently encounter resistance or indifference when they fail to account for these cultural logics or local constraints. However, hybrid practices are emerging at the intersection of tradition, innovation, and necessity. This research contributes to the understanding of waste not merely as a material problem but as a social object, embedded in power relations, cultural meanings, and environmental imaginaries. It calls for an integrated and culturally sensitive approach to waste governance in complex urban-rural and aquatic contexts.

KEYWORDS: Waste Valorization, Social Representations, Lacustrine Settlement, Community Practices, Sustainable Development.

I. INTRODUCTION

Ganvié, known as the "Venice of Africa," is an emblematic lake city in Benin, built in the heart of Lake Nokoué in the Sô-Ava municipality. Unique in its nature, this floating settlement, accessible only by water, is home to thousands of inhabitants living in stilt houses. The local economy is primarily based on fishing, small-scale trade, river transport, and increasingly, tourism. However, this geographic uniqueness, while attractive, also constitutes a vulnerability factor. The lack of waste collection networks, organized dump sites, or infrastructure adapted to the aquatic environment leads to a growing accumulation of solid waste, with direct consequences on quality of life, public health, and the ecological balance of the lake (Behanzin, et al., 2023).

In this context of high anthropogenic pressure on a fragile ecosystem, the issue of waste management in Ganvié has become a priority (Zonou, 2015), as it is in most developing countries (Hounkponou, 2019). Waste produced daily (plastic waste, food residues, commercial and artisanal debris) is most often discarded into the lake's waters or abandoned around the stilt houses. This chronic pollution contaminates fishing areas, deteriorates local sanitary conditions, and also threatens the city's tourist image. However, several studies and experiences in other insular or enclosed contexts have shown that solutions do exist. The valorization of solid waste transforming it into reusable or marketable resources presents a promising path not only to reduce pollution but also to create new economic activities that generate income for local communities (Durand, 2021).

However, the success of such a transition to a circular economy at the community level does not solely depend on the availability of technical solutions or institutional support. It is closely linked to the social representations that the inhabitants develop regarding waste and management practices. These representations, deeply rooted in local cultures, religious logics, and relationships to the body, space, and nature, strongly influence behaviors. They shape what is perceived as clean or dirty, useful or useless, recyclable or untouchable. They also determine daily practices (disposal gestures, sorting methods, recovery initiatives)

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and contribute to creating a local framework for interpreting external interventions, including those from NGOs, pilot projects, or public policies.

In Ganvié, where social organization still largely relies on community logic, traditional knowledge, and customary authority, these representations play a central role. The perception of waste is not merely functional but also imbued with symbolism and often implicit social norms. For instance, certain waste disposal areas are delimited by unwritten community conventions. Sometimes, objects are perceived as "contaminated" and can only be handled by certain social categories. Religious or spiritual beliefs may also prohibit or condition certain recovery practices. These invisible but structuring elements must be taken into account if we are to understand the logics underlying the lack of structured waste valorization in this space.

It is with this in mind that the central issue of this research is posed: how do social representations shape the practices of waste management and valorization in Ganvié? This question invites a move beyond a technicist or normative reading of environmental solutions to explore the cultural, symbolic, and social dimensions that determine environmental behaviors. It is about understanding to what extent beliefs, shared narratives, implicit norms, forms of sanctification or stigmatization influence the way the people of Ganvié treat, ignore, or exploit solid waste in their immediate environment.

To address this issue, the research adopts a qualitative, inductive approach focused on the perceptions and narratives of local actors. It uses a combination of methodological tools: semi-structured interviews with a diversity of actors (inhabitants, community leaders, association members, women traders, young collectors, fishermen), direct observations of waste management practices in domestic, commercial, and public spaces, and focus groups to bring out collective representations and intra-community divergences. These data will be analyzed using a thematic framework drawing on contributions from the sociology of representations, environmental anthropology, and social practice analysis.

Beyond its academic interest, this study aims to produce knowledge that is useful for formulating policies and programs that are more sensitive to local realities. By highlighting the symbolic, cultural, and social levers that hinder or encourage waste valorization, it will allow for the design of interventions that are more adapted, better accepted by the population, and therefore more effective. It also opens perspectives in terms of social innovation by valuing vernacular knowledge and the micro-initiatives that are often overlooked in traditional urban sanitation or sustainable development schemes.

Thus, the study aims to combine a fine understanding of social representations with a critical reflection on the conditions for implementing locally anchored waste valorization. It seeks to make both a scientific and operational contribution to the broader issue of environmental sustainability in precarious contexts marked by hybrid forms of modernity and tradition, and the need to invent solutions tailored to the uniqueness of living environments. By using Ganvié as a case study, it provides a window into the tensions and opportunities inherent in lake societies facing contemporary environmental challenges.

II. RESEARCH QUESTIONS

1. What are the dominant social representations of solid waste within the communities of Ganvié, and how do they influence the perception of waste as a resource or a nuisance?
→ This question explores the symbolic, cultural, and social dimensions of the relationship with waste: its status (dirty, useless, sacred, neutral, etc.), associated categories, collective discourses, etc.
2. What local practices of waste management and valorization are implemented in Ganvié, and how are these practices influenced (or limited) by social representations?
→ This aims to describe observable practices (disposal, burning, recovery, informal recycling, storage, etc.), linking them to the social meanings or taboos that accompany them.
3. To what extent do awareness initiatives, social innovation, or external interventions manage to alter representations and promote waste valorization?
→ This question delves into the dynamics of change: acceptance or rejection of projects, the role of community leaders, collective learning, knowledge hybridization, resistances, etc.

III. RESEARCH METHOD

This study adopts a qualitative approach, grounded in a comprehensive sociological perspective, to understand the social representations and local practices related to the management and valorization of solid waste in Ganvié. The research is based on a field survey conducted between May and November 2024. Data were collected through three main tools:

- Semi-structured interviews with approximately thirty local actors: residents, neighborhood leaders, association heads, female traders, young waste collectors, fishermen, and representatives of sanitation structures. These interviews allowed for an exploration of narratives, perceptions, and implicit norms surrounding waste.
- Direct observations of daily waste management practices in various spaces (domestic, commercial, public, waste disposal areas), in order to identify uses, gestures, and practical logics, sometimes unspoken.
- Focus groups organized with specific social groups (women, youth, notables) to bring out collective representations, potential perception conflicts, and forms of community innovation.

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The data were coded and analyzed using a thematic framework inspired by social representation theory and environmental sociology approaches. This methodological triangulation aims to ensure the validity of the results and to cross-reference discourses, practices, and dynamics of change.

This approach enables a nuanced understanding of the interactions between local cultural norms and environmental practices, providing insights into how community members navigate the complexities of waste management. By integrating multiple data sources, the study also highlights the ways in which local knowledge, social structures, and external interventions intersect to shape the possibilities for sustainable waste valorization in Ganvié.

IV. RESULT AND DISCUSSIONS

Ganvié, an aquatic urbanity between memory and modernity

Located on the calm waters of Lake Nokoué, in southern Benin, Ganvié is one of the largest lakeside cities in West Africa. Founded in the 17th century by the Tofinu people, who fled from slave raids, it was built on a foundation of resistance, spirituality, and ingenuity. Water, seen as both a refuge, barrier, and resource, remains the structuring element of the city's social, economic, and spatial organization to this day.

For a long time, Ganvié consisted of a dense central nucleus, organized around fishing, stilted housing, and deeply ritualized communal practices. However, over the decades, the city has experienced gradual urban sprawl, driven by demographic pressure, the reduction of traditional fishing areas, and the emergence of new economic activities. This sprawl is reflected in the proliferation of precarious housing on the outskirts of the original core, often built on increasingly silted or artificially filled areas.



Figure 1: Location map of the lakeside city of Ganvié
Source: French Development Agency (2018)



Figure 2: Aerial views of land use in Ganvié

This unplanned lacustrine urbanization deeply transforms the ecological and social balances of the city. It complicates mobility, weakens traditional infrastructures, and amplifies vulnerabilities, particularly regarding waste management and sanitation. The lake, long perceived as a self-regulating system, is now overwhelmed by visible and persistent pollution.

Ganvié thus exemplifies a unique form of aquatic urbanity, characterized by a constant tension between the memory of ancient knowledge and the imperatives of adapting to modernity. It becomes the stage for social experiments, popular inventiveness, but also profound inequalities in the face of ongoing transformations.

Social Representations of Solid Waste in Ganvié: Between Symbolic Rejection and Banality

In the lacustrine city of Ganvié, solid waste occupies a central position within a universe of meanings, far beyond its materiality. It embodies perceptions related to cleanliness, danger, social order, spirituality, and modernity. These social representations, which can be defined as forms of knowledge socially constructed and shared (Moscovici, 1961), influence both individual and collective behaviors toward waste. Understanding them is crucial, as they shape the social acceptability of waste management or valorization practices.

Drawing on the work of Mary Douglas (1966), it becomes clear that dirt is not an objective reality, but rather a social judgment about displaced matter: dirt is "matter out of place." In Ganvié, this approach sheds light on the relative tolerance of waste accumulation in the water, as long as it remains "in its place," i.e., outside of the domestic, bodily, or sacred space. Waste is socially acceptable as long as it does not disrupt an implicit symbolic order. A prominent local figure expressed this view:

« It's not a big deal that the waste is in the water. It would be a real problem if it came into the house. »

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This tolerance is also rooted in a local cosmology where water, a fundamental element of life and spirituality, plays an ambivalent role of both purification and receptacle. Lake Nokoué is thus seen as a living space with natural purifying properties. It is often compared to a nurturing mother who cares for her children, even when they soil her. Many of the voices heard during the survey expressed this collective belief in the self-regenerating capacity of the lake:

« *The lake is our mother. It has always taken what we give it. It cleans, it swallows, and the water stays clean.* »

— Statement from a resident of Sokomey.

This ancestral belief in the lake's purifying virtues, inherited from oral traditions and ritual practices, today contrasts with observable ecological realities. The transformations driven by the rapid urbanization of Ganvié (increasing numbers of stilt houses, population densification, growing consumption of plastic products) have multiplied both the volume and diversity of waste. Moreover, the near absence of public collection or treatment infrastructure exacerbates the issue. The result: the lake no longer absorbs but rather saturates. Some areas have turned into stagnant pools where floating waste accumulates. Several respondents acknowledge this change without fully questioning the original belief. A sort of cognitive dissonance appears to persist:

« *Before, we didn't see trash in the water. Today, it stays there, it accumulates. But maybe the lake is sick, or it's tired.* » — An elderly fisherman from Agonmekomey.

This image of a "sick" or "tired" lake represents an attempt to integrate visible signs of pollution within an old mental framework, without necessarily drawing conclusions about the need to change practices. This confirms what Zsuzsa Gille (2007) calls a "politics of ignorance," where environmental transformations become invisible, not because they are hidden, but because they are integrated into cultural and social logics that make them bearable.

Moreover, the lake is often viewed as a "public" or collective space, in a vague sense, where individual responsibility fades away. The water, belonging to all, becomes the outlet for all. This situation mirrors Susan Strasser's (2000) work on how societies delegate the symbolic and material burden of their refuse to communal spaces. In Ganvié, the lake literally becomes the collective dump, both invisible and omnipresent.

This culturally structured relationship with waste is not solely based on the symbolism of dirt. It also incorporates a historical and emotional perspective on modernity. Some residents view the increase in waste as an unfortunate but inevitable consequence of "progress" and modern consumption. A teacher shares:

« *Before, we had leaves, calabashes, all of that returned to nature. Today, everything is plastic. It's not the same, but we can't go back.* »

This type of discourse aligns with the analyses of G. Hawkins (2006) and Tsing (2015), who highlight the tensions between consumption, modernity, and the accumulation of waste in peripheral capitalist societies. Discarded objects, especially plastics, no longer disappear. They persist, remind, and disturb. This material persistence of waste exposes the other side of modern progress, often imagined as clean, linear, and residue-free. In reality, plastics, packaging, and remnants of imported consumption become concrete markers of imbalance between globalized economic flows and local management capacities. For G. Hawkins, waste is not merely refuse: it carries social and political agency, revealing the limits of our treatment infrastructures, as well as the imaginaries tied to hygiene, cleanliness, and value.

In the context of Ganvié, this agency is embodied in the way floating plastic bags and objects mark the space, accumulate in the canals, alter mobility practices, and become visible indicators of a silent crisis. Anna Tsing, on the other hand, invites us to rethink our relationship with ruin and accumulation by showing that waste and remnants can also become spaces of creation, adaptation, and survival. In Ganvié, this perspective illuminates local practices of reusing and repurposing waste—such as crafting transportation means from jugs, making compost from water hyacinths, and repairing rooftops with used nets—testifying to social dynamics where waste turns into resource. However, this capacity for adaptation should not overshadow the magnitude of the tensions experienced: these are forms of makeshift solutions under constraints, symptomatic of a global system where the peripheries receive more than they can absorb or transform.

Thus, waste, far from being mere residues to be erased, is the visible trace of contradictions between aspirations for modernity, the importation of consumer goods, and the material, economic, and symbolic conditions of their management (Durant et al., 2015). In Ganvié, as elsewhere, it raises fundamental questions of environmental justice and the sustainability of a development model centered on extraction, consumption, and disposal.

In the face of this visible transformation, the normalization of waste in the everyday environment becomes a form of adaptation. Waste becomes part of the scenery, blending into the lacustrine landscape, and turning into a daily reality. This reinforces what M. Thompson (2017), in his Rubbish Theory, identifies as a process where certain objects slip from being resources to refuse without provoking an immediate social reaction, as long as their visibility does not become intolerable.

Nevertheless, this normalization is not complete. It coexists with localized forms of rejection, anxiety, or reinterpretation. Some residents express growing shame about the dirtiness, particularly regarding visitors or tourists. Others evoke nostalgia for a cleaner lake, where swimming was once pleasant. Thus, we see a pluralization of social representations, based on generations, gender, social status, or education levels.

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Finally, and this is an essential element, new representations are emerging, particularly through young people and women involved in recycling projects, as well as local NGOs supported by international partners. These actors are attempting to reconstruct an image of waste as "useful materials" that can be transformed. They propose an alternative narrative, at the intersection of ecology, creativity, and local development.

« *We want to show that waste is not just dirty. It can become art, tools. It's our way of changing mindsets.* » — Member of a local environmental awareness collective.

In summary, the social representations of waste in Ganvié are marked by strong contradictions: between the sanctification of water and ecological disenchantment, between cultural heritage and material saturation, between symbolic tolerance and growing irritation. Understanding these representations in depth is a necessary prerequisite for any action aimed at raising awareness, transformation, or sustainable valorization of waste in this territory.

Local Waste Management and Recycling Practices: Social Logics and Material Constraints

In Ganvié, an iconic lakeside city in southern Benin, local solid waste management practices are part of a complex dynamic where traditions, subsistence innovations, spatial constraints, and institutional disengagement coexist. In this aquatic environment, where dry land is rare and valuable, waste disposal and recycling methods cannot be conceptualized according to classical urban standards. In the absence of a formal management system, communities have developed practical strategies, rooted in daily life and influenced by the social representations mentioned earlier.

In general, waste management in Ganvié relies on three main practices: direct disposal into the lake, occasional incineration on elevated platforms (often the ruins of old dwellings or mounds of earth), and temporary storage in makeshift containers until dispersion by the water. Disposal into the lake is the dominant practice. One resident explains:

« *When we sweep, we put everything in a basin and throw it directly into the water. It's been like this forever.* »

This daily, repeated gesture is naturalized and trivialized, reinforced by the culturally rooted belief that the lake has an infinite capacity to absorb waste, like a natural purifying organ. This popular belief, viewed by some as a form of "ecological faith," echoes Mary Douglas' (1966) analysis, where societies establish symbolic boundaries between the pure and the impure to maintain social order. Here, the lake water becomes both a receptacle and a boundary: it removes waste from the household while hiding it from sight.

This phenomenon is rooted in a socio-ecological logic inherited from the past when biodegradable organic waste (food scraps, plant shells, natural fibers) dominated. In this context, disposal into the lake caused minimal visible disruption. However, the massive introduction of non-biodegradable products into household consumption (plastics, packaging, composite materials) has profoundly changed the composition of waste. As Hawkins (2006) and Strasser (2000) have analyzed, the evolution of materials and lifestyles disrupts the thresholds of tolerance to the visibility of waste and alters the perception of its "residual value." One elderly woman explains:

« *Before, the leaves and cassava scraps dissolved. Today, even after weeks, the bags still float, kill our fish, block navigation routes, and pollute our lake.* »

This evolution increases the sense of saturation and accentuates the gap between traditional practices and current effects. Meanwhile, some reuse practices exist. Rigid plastic bottles, broken buckets, cans, and used nets are repurposed for domestic, agricultural, or craft uses. For example, damaged fishing nets are used to make enclosures for animals or to reinforce shelters. Plastic bottles are often used to feed fish in ponds, by filling them with food scraps or fish feed, a practical way to recycle what seems useless. As for water hyacinths, they are harvested and turned into compost, improving soil fertility, especially in vegetable gardens and crop cultivation. Cans, especially rigid plastic ones, are often recovered to make mobility tools, such as small boats or makeshift floats, which facilitate transport through canals and lagoons. These cans are either filled with air to ensure buoyancy or assembled into larger structures that serve as lightweight boats. These practices demonstrate the creativity of the inhabitants in facing waste management challenges, but also their ability to integrate elements of their environment, even those often seen as harmful, into a cycle of recycling and subsistence. Recycling has thus become a true survival and resilience strategy in a context where resources are limited.

These forms of recycling remain mostly functional, driven more by necessity than environmental awareness. This echoes the dynamics described by M. Thompson in Rubbish Theory (2017), where the value of an object fluctuates between "declining object" and "potential object" depending on the social perception of it. In Ganvié, a young fisherman states:

« *Old nets, I use them to repair the roof or make shelters for the ducks. Nothing goes to waste when you know what to do.* »

However, the possibilities for recycling are still hindered by structural obstacles. The limited available space, the lack of sorting or storage areas, the absence of suitable equipment, and logistical isolation make the establishment of sustainable recycling systems difficult. Similarly, attempts at community projects (such as turning plastics into bricks or making compost from organic waste) often face challenges such as a lack of training, poor coordination among stakeholders, and the absence of a local market for products resulting from recycling. Another limiting factor is the social stigma associated with certain waste-related tasks. In a society still marked by symbolic hierarchies, handling trash can be perceived as degrading. As a local teacher points out:

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« *Young people don't want to be seen picking up trash. They say it's for people who haven't succeeded.* »

This rejection is reinforced by the lack of institutional recognition for local initiatives. Municipal authorities, often disconnected from local realities, rarely provide support for community efforts. This aligns with Boudet's (2015) observations on the frequent misalignment between public waste management policies in West Africa and local social dynamics. Finally, economic logic weighs heavily on practices. The lack of outlets for recycled materials, irregular buyback markets, and fluctuating prices discourage the structuring of informal recycling circuits. Additionally, there is a widespread perception of the illegitimacy or ineffectiveness of environmental policies. As a community actor explains:

« *Even when we collect the trash, we don't know where to put it. There is no designated area for it. It all ends up back in the water.* »

In summary, local waste management and recycling practices in Ganvié are shaped by a constant tension between cultural legacies, adaptive dynamics, and structural constraints. They reveal a moral economy of waste (Douglas, Hawkins, Alexander & Reno), where trash, while discarded, is sometimes a resource, sometimes a burden, depending on the context, the actors, and the uses. Any initiative aimed at transforming these practices must therefore take into account the multiple rationalities that underlie them, lest it reinforce mistrust and inefficiency.

Between Resistance and Dynamics of Change: Effects of External and Internal Initiatives

In Ganvié, waste management dynamics extend beyond the domestic or community space. They are also part of a web of external interventions, often initiated by NGOs, local associations, and government programs aimed at promoting more sustainable practices. These interventions have triggered some awareness, although they have not always succeeded in deeply changing the practices entrenched in habits and social representations.

Several local, national, and international initiatives have been deployed in recent years, particularly in the form of awareness campaigns, training on waste recycling, or pilot projects for waste collection and transformation (such as recycling plastic bags into paving stones or craft objects). NGOs have distributed floating waste bins, set up training workshops for youth, and supported women's groups in projects transforming waste into useful or decorative objects.



Figure 3: Handmade Products from Water Hyacinth Transformation in Ganvié

Source: ANPT (<https://anpt.bj/article/8/lancement-route-jacinthe-ganvie/>)

These efforts have sometimes yielded positive results: greater visibility of the problem, more critical discourse among younger generations, and the emergence of new practices such as sorting or community collection. A young woman interviewed during the study shares:

« *With our association, we collect plastics from certain areas of the lake and sell them in Cotonou and Abomey-Calavi. It's not always profitable, but at least it shows that we can do something.* »



Plate 1: Views of the plastic waste collection site in Ganvié

Source: Sonagnon NGO, 2023

However, these dynamics of change are met with several resistances. One of the most persistent is the perception that the lake can naturally "absorb" the waste; an idea supported by a nearly mystical view of the lake as a living and regenerative entity. As an elderly fisherman explains:

« *The lake has always swallowed everything. The waste goes away with the waves. It's God who cleans.* »

This type of discourse illustrates a powerful collective imagination, in which human intervention to "clean" is sometimes seen as unnecessary, even arrogant. Moreover, projects led by external organizations often suffer from a lack of local grounding: poorly adapted to the material, economic, or cultural realities, they fail to become permanently embedded in daily practices. Some residents express disillusionment:

« *They come, they talk, they give things, then they leave. And after? We go back to the same situation.* »

This feeling of disconnection underscores the need for genuine community participation, not only in the implementation but also in the design of initiatives. Without social ownership, even the best intentions struggle to lead to sustainable transformations. Additionally, a fragmented approach to waste management, focusing only on certain parts of the chain (such as awareness or collection without treatment, or sorting without economic outlets), resembles an incomplete loop. However, the logic of sustainability demands an integrated approach, covering everything from production to recovery, including collection, transportation, and final treatment (Topanou, 2012). If one of these links is missing or failing, the entire system falters.

This need for integration is even more critical in a territory as atypical as Ganvié, where the constraints of the lacustrine environment make waste transport particularly problematic. In the absence of suitable infrastructure, transporting waste from homes to collection or treatment points becomes a complex, costly, and often neglected operation. As a local official puts it:

« *Even if we want to evacuate the waste, where do we put it? And who will come to collect it? We need canoes, fuel, organization, money...* »

This logistical reality is too often overlooked in standard projects, which are designed according to classic urban models. Thus, any effective waste management and recovery strategy in Ganvié must necessarily integrate social, cultural, economic, and geographical dimensions, taking into account local mobility conditions, social representations, domestic uses, but also technical

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possibilities and real economic outlets. Without this, the efforts made are likely to fade away due to a lack of solid systemic and community-based grounding.

Furthermore, the pressure of increasing urbanization and tourism activities in Ganvié is creating new relationships with waste. The external gaze from visitors, the media, or national authorities is starting to weigh on the residents, prompting them to think about the image their city projects. Some young people are taking up these challenges to develop micro-initiatives or launch entrepreneurial projects based on waste, within a framework of economic valorization and social innovation.

Thus, a coexistence is observed between forms of resistance rooted in traditions, beliefs, and social constraints, and dynamics of adaptation, negotiation, and change. This dual movement reveals that transformations are never linear: they unfold within a slow, conflictual process, strongly dependent on how residents embrace or reject the sustainability logics that are being proposed.

Summary and Perspective

The findings presented reveal the existence of a complex system in which social representations, local practices, and external initiatives intertwine to shape waste management dynamics in Ganvié. On one hand, waste is still largely perceived through symbolic lenses inherited from a longstanding relationship with nature, where organic degradation and absorption by the lake were considered natural, almost automatic. This "myth of the lake's spontaneous regeneration" continues to underpin attitudes of neglect and passive acceptance of pollution, despite the growing evidence of the lake's saturation.

At the same time, residents demonstrate pragmatic know-how that reflects a form of resilience and local ingenuity. The reuse of worn objects, functional repurposing, artisanal upcycling of rigid plastics and fishing residues, composting with water hyacinths these practices, though limited in scale, contribute to a form of everyday ecology that deserves recognition and support. They are rooted in specific social logics, shaped by improvisation, informal recycling, and sometimes neighborhood-based solidarity.

However, these dynamics of change remain fragile. External initiatives often designed from a top-down and technocratic approach struggle to meet the real needs of local communities or to account for specific constraints, especially those related to water-based mobility, low income, and dispersed housing patterns. The disappointment voiced by residents about projects that yield no lasting impact highlights the urgent need for a paradigm shift: it is no longer enough to raise awareness or provide information; initiatives must be co-developed with and from within communities.

This perspective thus calls for rethinking waste management not only as an environmental or technical issue, but as a total social fact, in the sense of Marcel Mauss: it involves collective representations, ritual practices, economic stakes, power relations, and worldviews. In Ganvié, any sustainable solution must integrate local knowledge, endogenous innovation capacities, and better coordination across levels of action (municipal, community, national).

Finally, this study opens important avenues for both research and public action. It questions the relevance of imported waste management models, often ill-suited to amphibious environments, and advocates for a more contextualized approach grounded in cultural dynamics and territorial realities. It also invites a shift in perception: to no longer see waste solely as a "problem to eliminate," but as a potential resource provided that we understand its social uses, symbolic barriers, and possible value chains.

CONCLUSIONS

The study conducted in Ganvié reveals that solid waste management cannot be considered independently of the social representations associated with it. In this emblematic lake city in southern Benin, waste is not merely a set of material residues to be removed or treated, it is embedded in a unique symbolic, cultural, and economic universe. The lake, long perceived as a naturally regenerating environment, has been invested with an implicit power of absorption, fostering a form of indifference toward the accumulation of refuse. However, demographic growth, the massive influx of non-biodegradable plastics, and gradual urbanization have deeply disrupted this balance.

In response to these changes, the inhabitants of Ganvié have developed hybrid practices, halfway between traditional legacies, local adaptations, and survival strategies. While these practices reveal a genuine potential for social innovation, they remain constrained by a lack of infrastructure, economic precarity, and the absence of truly integrated public policies. Numerous initiatives whether led by NGOs, municipalities, or development partners have failed to move beyond a top-down approach that is often poorly adapted to the lacustrine context, its mobility constraints, and its social structures.

The results of this research call for a twofold awareness. On one hand, it is essential to recognize the cultural depth of people's relationship with waste and to incorporate this dimension into any strategy for awareness-raising or resource recovery. On the other hand, building sustainable solutions requires a genuinely participatory approach rooted in local knowledge, attentive to the specific constraints of the territory, and committed to "closing the loop": collection, sorting, transport, recovery, and education must form a coherent whole.

Ganvié thus offers a rich analytical field for rethinking waste management policies at the scale of unique territories. Far from a one-size-fits-all model, it is context-based, negotiated, and co-constructed solutions with local residents that stand the best chance of addressing current challenges. Waste recovery in Ganvié cannot be decreed it must be built through the layers of the social, at the intersection of the everyday, the symbolic, and the political.

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