

National Solid Waste Management Programs and Policies in the City of Bujumbura

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Abstract

Solid waste management is a major environmental challenge in Bujumbura City, where rapid growth, low public awareness, and inadequate infrastructure contribute to persistent unsanitary conditions. The objectives of this article are to analyse the evolution of national and municipal solid waste management policies, describe the main programs implemented since the 1980s, and identify the social, institutional, and environmental constraints that limit their effectiveness. A qualitative methodological approach was adopted, combining documentary analysis, institutional reports, participant observation, semi-structured interviews and focus group discussions. We conducted sixty interviews and two focus groups. The main obstacles identified include weak institutional capacity, lack of coordination, lack of sorting at source, low community ownership, and the persistence of informal dumps. The study concludes that sustainable progress requires increased awareness, improved collection infrastructure, the creation of a sanitary landfill, and more consistent environmental governance.

Keywords: Solid Waste Management; Public Policy; Circular Economy; Sanitary Landfil, Bujumbura City

Introduction

Solid waste management is still a major challenge, especially in developing countries (Kapekula *et al.*, 2007; Sujuaddin *et al.*, 2008; Longe and Ukpeber, 2009; Bundhoo, 2018; Adeleke *et al.*, 2021; Fadhullah *et al.*, 2022). In fact, some research shows that waste should be managed to achieve sustainable development (Lorrain, 2001; Bertolini and Brakez, 2008; Gracier, 2008; Zaman *et al.*, 2011; Bah *et al.*, 2021). Many countries have developed the “zero waste” policy nowadays to achieve better management of solid waste (Curran and Williams, 2012; Bogusz *et al.*, 2021; Rodríguez-Guerrero *et al.*, 2024).

The city of Bujumbura is among the African cities struggling with waste management challenges. Some obstacles to solid waste management in Bujumbura city have been identified: rapid urban growth, financial constraints, inadequate public awareness, inadequate infrastructure, and cultural attitudes (Ndabarushimana and Ndikumana, 2020; Ngabirano *et al.*, 2025). Then, these are the questions about this subject:

Which policy shifts occurred by decade? Which institutional bottlenecks persist? What can be done to improve solid waste management in Bujumbura city?

The framework of this study is about the socio-anthropological analysis of public policies. This theory studies how governments act to resolve social problems such as education, environment, etc. In this context, this

article aims to analyse the evolution of national and municipal solid waste management policies, describe the main programs implemented since the 1980s, and identify the social, institutional, and environmental constraints that limit their effectiveness.

Methods

General Presentation of Bujumbura City

The economic capital of Burundi is located in the far northeast of Lake Tanganyika. It is the oldest urban settlement in the country, founded in 1897 by German administrators on the site known as “Kajaga.” The city is characterized by clay soils in the north and sandy soils in the south, with undeveloped areas still occupied by fields, fallow land, and natural vegetation. Activities such as fishing, industry, administrative services, and urban agriculture are common (Kabanyegeye et al., 2021). Like the rest of Burundi, Bujumbura experiences four seasons: long and short dry seasons, and long and short rainy seasons (UN-HABITAT, 2012). This ecological and socio-economic diversity shapes both waste generation patterns and the capacity of households to manage waste.

Data Collection and Analysis

To address the study objectives, both documentary and ethnographic methods were used. Ethnographic informations were collected from eight organizations involved in solid waste management in Bujumbura. Ethnographic techniques included participant observation, focus group discussions, and semi-structured interviews. We conducted sixty interviews and two focus groups. Data were collected between January 2024 and February 2025. We visited six urban areas of Bujumbura city, such as Buterere, Ngagara, Rohero, Bwiza, Kanyosha and Musaga. Data were then interpreted using a qualitative content analysis approach, allowing theme generation and comparison of institutional narratives and community perceptions (**Figure 1**).

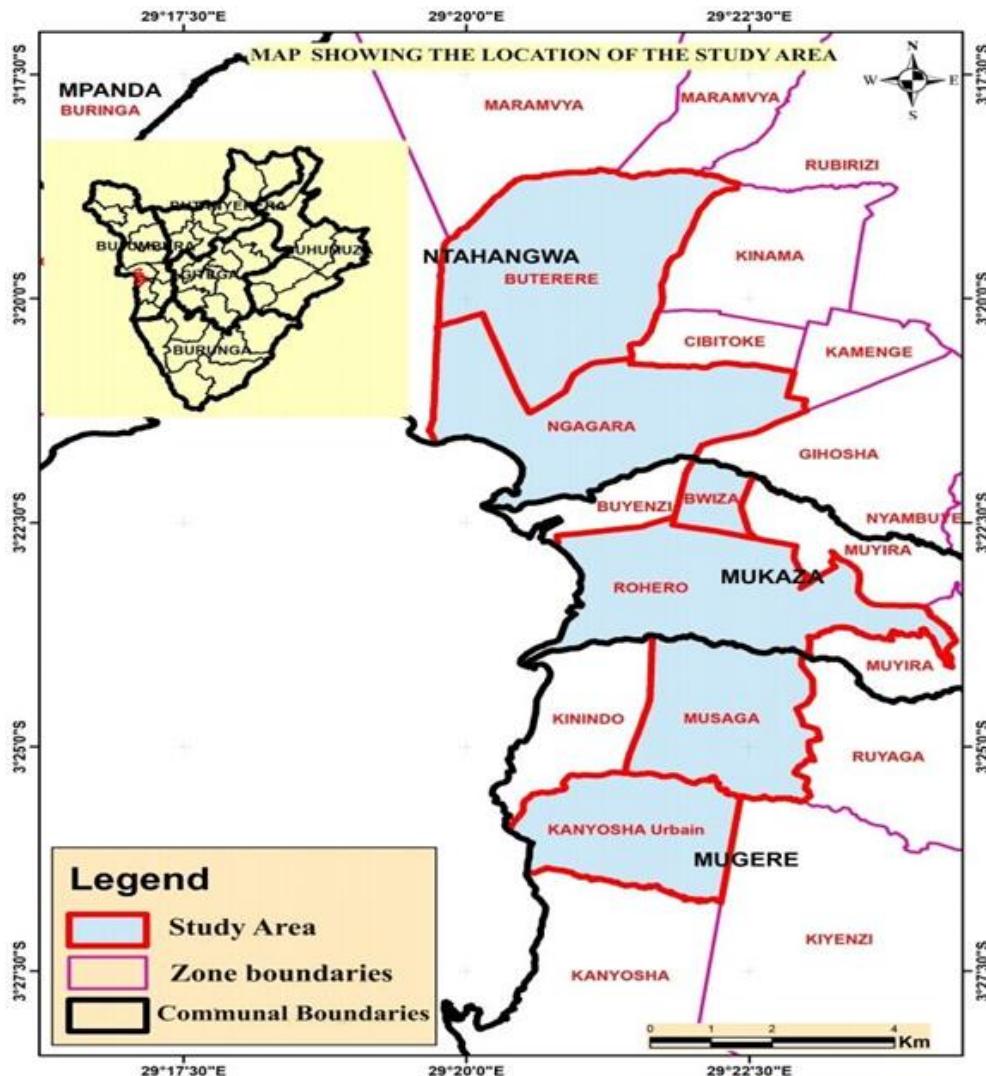


Figure 1: Map of Bujumbura showing study sites and photographed locations

Ethics Statement

This study is based on interviews, focus group discussions, field observations, and document analysis related to solid waste management in Bujumbura. Participation was voluntary and verbal informed consent was obtained from all participants. Data were anonymized to ensure confidentiality. No personally identifiable information is reported. The study involved no medical or biological experimentation, and in line with standard social science practice, formal ethics committee approval was not required.

Results

This section presents the results organized thematically, drawing on document analysis, institutional sources, field observations and photographs taken in Bujumbura between 2024 and 2025. Five main themes plus a summary table emerged from the analysis.

Theme 1: Policies exist but are weakly implemented

Since the early 1970s, Burundi has progressively developed a formal institutional and legal framework for solid waste management. The creation of a municipal waste service in 1972 and the national mandate established by Decree No. 100/162 of 1983 marked the first attempt to centralize responsibility for household waste collection and disposal. This was further reinforced by the 1993 National Environmental Strategy and later by the 2000 Environmental Code and the National Sanitation Policy, which clearly require that waste be treated, disposed of in approved facilities, and managed in ways that protect human health and the environment. However, despite this dense regulatory framework, field observations and photographs from Rohero, Ngagara and Kanyosha show widespread illegal dumping, open burning and waste accumulation in drainage channels and open spaces. The Environmental Code explicitly prohibits such practices and allows authorities to intervene at the expense of offenders, yet these provisions are rarely enforced in practice. This demonstrates a persistent gap between formal policy design and real-world implementation.

Implication: The weakness of enforcement transforms strong legal instruments into symbolic rather than effective tools, allowing chronic environmental contamination and public health risks to persist (**Figure1**).



Figure 2: Uncontrolled waste dumping and open burning in Rohero and Ngagara (January, 2025)

Theme 2: Fragmented governance and lack of coordination

From the 2000s onwards, a large number of private waste collection associations emerged in Bujumbura, including CEPRODILIC, Umoja Business Company, SS Burundi, Abagwaneza Company, GICOM-Girisuku, Omega Solutions and many others. These operators have contributed to job creation and to partial waste removal in some neighborhoods. However, their activities are poorly aligned with municipal planning and national sanitation strategies.

There is no unified citywide coordination mechanism that assigns clear service zones, monitors performance, or integrates private operators into a coherent system. As a result, service coverage is uneven: some streets receive collection while others are neglected, even within the same neighborhood.

Implication: Governance fragmentation produces territorial inequalities in environmental exposure, leaving poorly served communities more vulnerable to waste-related health risks (**Figure 3**).



Figure 3: Unequal waste collection coverage by private operators in Bujumbura
(May, 2024)

Theme 3: Household behaviors driven by service failure

Before the establishment of formal services, households traditionally disposed of waste individually, by dumping biodegradable waste in fields and burning non-biodegradable waste. Although urbanization has increased the volume and toxicity of waste, similar practices persist today, not by choice but by necessity.

In neighborhoods where waste collection is irregular or absent, residents resort to dumping waste in ravines, wetlands or drainage channels, or burning it near their homes, as documented in Ngagara and Kanyosha. These practices directly result from the inability of the formal system to provide reliable services.

Implication: Environmental degradation and health hazards (air pollution, water contamination, vector proliferation) are not only behavioral issues, but structural consequences of service delivery failures (**Figure 4**).



Figure 4: Household dumping and burning practices in Kanyosha (January, 2025)

Theme 4 : Infrastructure deficits and landfill saturation

The Buterere dumpsite, created in the 1970s, remains the main disposal facility for Bujumbura. Although the 2013 waste management project planned three transfer stations (Buterere, Mpimba, Nyabaranda) and a new controlled landfill designed to serve the city for at least ten years, these infrastructures were never fully completed.

As a result, waste continues to be disposed of in an uncontrolled manner at Buterere, which is now heavily overloaded. Waste is not sorted, hazardous and household waste are mixed, and leachate control is minimal, creating long-term risks for soil, surface water and groundwater.

Implication: Infrastructure deficits undermine all waste management policies and amplify environmental and public health risks at the city scale (**Figure 5**).



Figure 5: Saturation and uncontrolled disposal at Buterere landfill(February, 2025)

Theme 5: National initiatives with limited practical impact

Between 2020 and 2024, the Government of Burundi launched ambitious initiatives such as the “100 Days of Sanitation” and the “Zero Waste” movement. These campaigns promoted public awareness, installation of bins, recycling initiatives and citizen participation, and were supported by banks, private companies and civil society.

While these initiatives increased visibility and political commitment, field evidence shows that waste accumulation remains widespread in many neighborhoods. The persistence of uncontrolled dumping in 2025 demonstrates that awareness campaigns alone cannot compensate for weak collection systems, poor enforcement and lack of infrastructure.

Implication: Without structural reforms in governance, financing and infrastructure, national campaigns remain largely symbolic and fail to produce sustained environmental improvements (**Figure 6**).

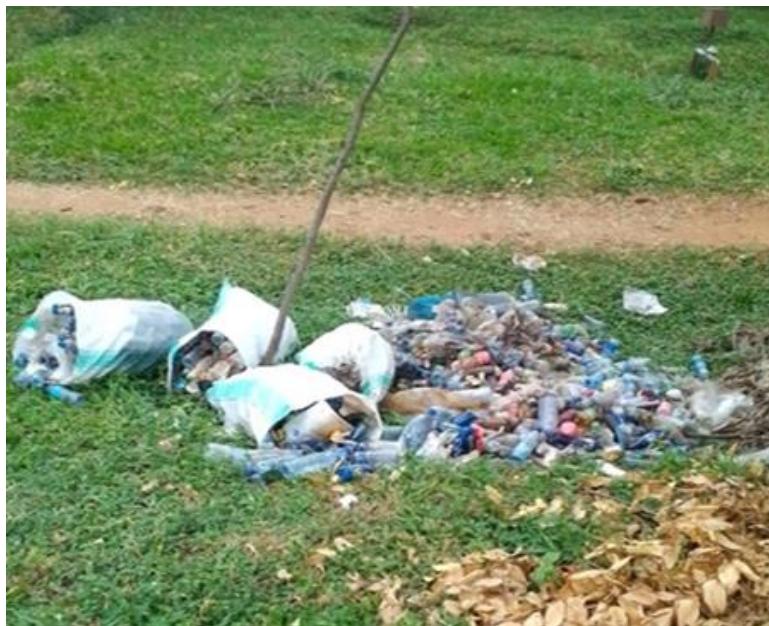


Figure 6: Persistent waste accumulation despite Zero Waste and 100 Days campaigns
(October, 2024)

Discussion

This study reveals that solid waste management in Bujumbura is not primarily constrained by the absence of laws or policy initiatives, but by structural weaknesses in implementation, governance and infrastructure. The thematic results show a persistent gap between the ambitions of public policy and the realities of urban environmental management.

Policy implementation gap

Burundi has developed a dense legal and strategic framework for solid waste management, including the Environmental Code, the National Sanitation Policy and the Zero Waste initiative. These instruments formally require waste to be collected, treated and disposed of in ways that protect human health and the environment. However, field observations across Rohero, Ngagara and Kanyosha demonstrate the continued prevalence of illegal dumping, open burning and waste accumulation in public spaces.

From a socio-anthropological public policy perspective, this reflects a classic policy-implementation gap, where legal norms exist but are not translated into effective action (Müller & Surel, 1998). In Bujumbura, municipal institutions lack the operational capacity, monitoring systems and enforcement mechanisms necessary to ensure compliance. As a result, policies remain largely symbolic, allowing chronic environmental contamination and public health risks to persist.

Fragmented governance and coordination failure

The expansion of private waste collection associations since the 2000s has contributed to employment and partial service provision. However, the absence of a coordinated municipal framework means that these actors operate independently, without clearly defined service zones, performance monitoring, or integration into a citywide system.

This fragmentation produces uneven service coverage and territorial inequalities in environmental exposure. Similar patterns have been observed in other developing cities where privatization occurs without strong regulation (Ahmed & Mansoor, 2004; Tilaye & Van, 2014). In Bujumbura, weak institutional coordination prevents private operators from forming an effective, collective waste management system.

Household practices as structural responses

The persistence of dumping and burning at the household level is often attributed to low environmental awareness. However, the results show that these practices are primarily coping strategies in response to unreliable or absent collection services. When waste is not removed, households resort to the only disposal options available—ravines, drainage channels, or open burning.

This confirms previous studies demonstrating that behavior follows service provision rather than cultural preference (Hasan, 2004; Debrah et al., 2021). Environmental degradation in Bujumbura is therefore not simply a behavioral issue, but a structural outcome of institutional failure.

Infrastructure is the critical bottleneck

The saturation and poor management of the Buterere landfill illustrate the material limits of Bujumbura's waste management system. Although policies promote recycling, valorization and controlled disposal, the absence of transfer stations, sorting facilities and engineered landfills makes these goals unattainable in practice.

Without adequate infrastructure, the circular economy remains largely rhetorical (Ezeudu, 2019; Tisserant et al., 2019). The continued mixing of hazardous and household waste, combined with weak leachate control, creates long-term risks for soil, surface water and groundwater.

Limits of national awareness campaigns

The “100 Days of Sanitation” and “Zero Waste” initiatives have increased political visibility and citizen engagement. However, their impact remains limited because they are not supported by consistent collection services, effective enforcement, sustainable financing, or adequate infrastructure.

International experience shows that environmental campaigns alone cannot produce durable change without institutional backing (Curran & Williams, 2012; Rodríguez-Guerrero et al., 2024). In Bujumbura, this explains why waste accumulation persists despite high-profile national movements.

Conclusions

Policy implications

Despite more than four decades of policies, programs and national initiatives, solid waste management in Bujumbura remains structurally fragile. This study demonstrates that the persistence of uncontrolled dumping is not primarily caused by the absence of laws or awareness campaigns, but by weak institutional enforcement, fragmented governance and inadequate infrastructure. From a socio-anthropological perspective, this confirms that public policy effectiveness depends not only on formal regulations but on the capacity of institutions to translate them into everyday practices. To move from symbolic policy to effective environmental protection, actions must be prioritized and responsibilities clearly assigned.

Municipality of Bujumbura and OBUHA

The immediate priority is to reduce uncontrolled dumping and protect public health. This requires:

- Enforcing existing environmental regulations through municipal inspections and penalties for illegal dumping and burning;
- Establishing clear service zones and minimum collection schedules for all private operators;
- Launching targeted community awareness linked to actual service delivery (not stand-alone campaigns);
- Creating a citywide monitoring unit to track collection performance and illegal dumping.

These actions can be implemented using existing legal frameworks and are essential to restore basic environmental governance.

Ministry of Environment, OBUHA, Municipality, private operators

To stabilize the system, structural investments are required:

- Construction of transfer stations and waste sorting facilities (as planned in the 2013 project);
- Formal integration and regulation of private waste companies into a unified municipal system;
- Introduction of source separation (organic, recyclable, residual) supported by logistics and incentives;
- Development of a regulated recycling and valorization sector.

These measures will allow the transition from emergency collection to organized waste management.

National Government with international partners

Long-term sustainability depends on major infrastructure and institutional reform:

- Development of a fully engineered sanitary landfill to replace the Buterere dumpsite;
- Long-term financing mechanisms for waste management services;
- Integration of circular economy principles into urban planning and industrial policy;
- Strengthening of environmental governance, data systems and regulatory enforcement.

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Data Availability: All data are included in the content of the paper.

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