

# The Bujumbura City Facing the Challenges of Household Solid Waste Management: Contribution to the Anthropology of Development

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## Abstract

The paper studies the challenges of household solid waste management in Bujumbura, Burundi, using a qualitative and anthropological approach. It identifies obstacles including rapid urban growth, financial constraints, and lack of public awareness, inadequate infrastructure, and cultural attitudes. The study collected data from eight waste management organizations and through field observation. It concludes that sustainable waste management requires environmental education and changes in human behaviour.

## Keywords

Bujumbura City, Household Solid Waste Management, Challenges, Anthropology of Development

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## 1. Introduction

Solid waste management is a crucial, complex and multidimensional problem for societies (Willmott & Graci, 2012, Monsaingeon, 2014 and Ismahan, 2022). In

most cities in developing countries, especially in Africa, solid waste management remains a fundamental issue (Citeretse, 2008; Onibokun, 2001; Ngnikam & Tanawa, 2006; Rucakumugufi et al., 2021). As with most countries around the world, developing countries are not immune to the problems posed by the ever-increasing increase in waste generation and the consequences this has on waste collection, disposal and disposal (Thonart et al., 2005). Solid waste therefore threatens quality of life, human health, natural resources and the environment (Mizero et al., 2015; Zoma et al., 2023).

The scientific literature shows that there are many challenges faced by different African societies in the management of solid waste. In Ivory Coast, in the city of Treichville, the household solids management system shows inadequacies, due to the irregularity of the quantity of waste weighed at the landfill, which results in the presence of illegal dumping (Effebi et al., 2017). In the Comoros Islands, household waste management is hampered by a lack of adequate financial and budgetary resources, a lack of equipment and techniques, the lack of waste management skills, insufficient awareness among the population and institutional and legal obstacles (Issihaka Ali et al., 2015), Mangenda et al. (2020) in Kinshasa, in the Democratic Republic of Congo, the poor management of household waste is due to the inefficiency of the collection system implemented and the indiscipline of the population.

In Cameroon in Yaoundé, Sotamenou (2010) shows that the poor management of household solid waste is linked to the economic, institutional, political, informational and trans-shareholder context. In the case of Burundi in Bujumbura, the population explosion, the increase in urban activities, the lack of financial resources from the public authorities at the local level and the absence of real environmental policies hinder the sustainable management of solid waste (Kapekula et al., 2015).

Ndabarushimana and Ndikumana (2020) also mention a series of difficulties that the city of Bujumbura (Burundi) faces in solid waste management, including the lack of an appropriate landfill, the non-evacuation of household waste, the refusal to pay the fee for disposal, the lack of awareness on the part of the authorities, the lack of trucks in good condition, Overpopulation, lack of will of the population, lack of daily monitoring, low household incomes, absence of law, inability to recycle certain waste, lack of bins for the storage of waste at the places of production. Thus, the scientific literature shows that the world of waste is a subject that is less explored in the social sciences and humanities, especially in Burundi. That is to say, researchers in the natural sciences often put in place techniques for the management and recovery of waste. Kapekula et al. (2015) in their study in Bujumbura show that the thermogravimetric model makes it possible to obtain a substitute combustible gas from household waste. Ngahane et al. (2015) show that the composition of household waste is related to the environment, conditions and standard of living of the populations in the city of Bujumbura. Dusabe's physico-chemical analysis showed that household waste could be transformed into briquettes.

These authors have therefore approached the notion of waste from an approach

to the physico-chemistry of waste. However, the overall objective of this article is to identify the obstacles of anthropological origin related to the management of household solid waste in the city of Bujumbura. Specifically, it will therefore explore the anthropological dimension in waste management in order to contribute to the implementation of ways to improve the sustainable management of solid waste in the Bujumbura city.

The hypothesis of our research is that humans remain a main challenge in the management of household solid waste in the Bujumbura city.

## 2. Materials and Methods

From the perspective of [Bachelard \(1971\)](#), it is necessary to know the method of grasping the object to be known in a scientific research. In order to meet the objectives of this study, we used both written sources and ethnographic methods in order to realize our study. As far as written sources are concerned, we used open access search engines such as Google scholar, Free Full PDF and Microsoft Academic Search, which allowed us to access recent and reliable documents. Ethnographic sources, on the other hand, cover direct observation and semi-structured interviews.

We collected information from eight organizations involved in household solid waste management in Bujumbura city: the Burundian Office of Urban Planning, Housing and Construction (OBUHA); the Brigade and Sanitation Service of the Bujumbura City Hall; the Bujumbura Cleaning Company (BCCO); Omega Solutions; the Family Union for Global Development FDEM-Abayogoma Company); the Runa Business Company (RBC); Usafi Kwetu Kamenge; the Spring Communities. The purpose of the investigations with these structures was to know their household solid waste management policies in Bujumbura city as well as the obstacles encountered. The selection of these organizations was based on saturation and diversification. We conducted the interview with twenty five people.

In the concretization of some challenges, we observed the official dump of household solid waste of the city of Bujumbura located in Mubone in the urban area of Buterere. We also visited some illegal dumps in the urban areas of Buterere, Buyenzi and Ngagara. The theoretical model used in this article is human ecology ([Lawrence, 2001](#)). It is an interdisciplinary approach that studies the relationship between human societies and their environment. In the analysis of the results, we used the qualitative approach. Thus, [Albarelo \(2014: p. 96\)](#) expresses content analysis in this way: “Even if the qualitative approach does not have the statistical tools of the quantitative approach, it is imperative to be as rigorous as possible in reading the information collected” ([Figure 1](#)).

## 3. Results and Discussion

Most of the results are based on semi-structured interviews conducted with stakeholders involved in the management of household solid waste in the city of Bujumbura. The iconographic results from direct observation were used to support

the semi-structured interviews. The use of the content of the interviews brought out a number of elements considered by the various actors interviewed as obstacles to sustainable waste management in the Bujumbura city.



Source: Photos taken by Emmanuel Ngabirano during the direct observation on the ground in Buterere.

**Figure 1.** Solid waste piled up in the urban area of Buterere.

### 3.1. The Rapid Growth of Urbanization

Here, there is a lack of solutions to be proposed to face these two challenges: freezing of logistical support and exponential population growth. In the 1990s, the Bujumbura city had an estimated population of 226,628 inhabitants (CEPED, 1992). Over the years, the city has continued to grow; In fact, in 2008, the population, established on 11000 ha, is estimated at 485,323 inhabitants, i.e. a growth rate of 33% according to the 2008 Population and Housing Census in Burundi (UN-HABITAT, 2012).

In the same period, following the 1993 crisis in Burundi, the Municipal Technical Services (SETEMU) that were responsible for the collection and disposal of municipal solid waste no longer benefited from logistical support through international cooperation (SETEMU, 1996). The freeze in funding combined with a rapid growth in urbanization has made it impossible to remove waste from all districts of the city of Bujumbura. Faced with this situation, the Municipal Technical Services have come up with the idea of organising private companies in an association to support the work of collecting and disposing of waste.

According to the OBUHA staff in charge of environmental and sanitation issues in the urban space of Bujumbura, “the exponential acceleration of the population is one of the major causes in the production of solid waste in the different corners of the city of Bujumbura”.

This is consistent with the results of Merino (2007), who states that the diversity of the urban environment, the presumed ineffectiveness of public interventions and the expanded space for intervention allow populations to question the modalities of urban governance. Also, according to Sangaré (2012) in Burkina Faso, the phenomenon of rapid urbanization and the absence of a real urban sanitation policy explain the uncontrolled increase and increasing production of waste.

### 3.2. Insufficient Financial Resources

Waste management is an activity that involves several actors: the waste collection fee paid by households is to cover the needs related to the collection and evacuation of this waste to the landfill sites. This fee should cover collection, evacuation and treatment. Households and other actors who produce the waste are not able to pay this fee easily. This hinders the profitability of the activities and is more of a freeze for the environment.

In addition, the city of Bujumbura faces problems related to financial resources to ensure the proper management of solid waste. As the solid waste management protocol is difficult, it requires enough financial resources for its proper operation. It must need sufficient collection equipment, infrastructure and a qualified workforce. Private companies involved in solid waste management in Bujumbura realize that they are doing only the minimal work in waste management.

The head of the brigade and sanitation department of the Bujumbura City Hall says that “financial means is one of the challenges to be taken into account for the sustainable management of household solid waste in the city of Bujumbura”. This is in one line with [Ada Nzoughe \(2006\)](#) in Gabon, who says that the lack of a legal framework and insufficient financial resources hinder good waste solid management.

### 3.3. Lack of Environmental Awareness and Education

In the city of Bujumbura, household solid waste originates in households, industries, and commercial and social establishments. As there are many producers, a sustained effort must be made to raise awareness and educate the population in the management of their solid household waste. Success in the sustainable management of solid household waste requires first of all good management of the people who produce them. This will inevitably involve awareness-raising and environmental education actions. These actions aim in particular to promote a positive change in the image that man has of waste.

One of the actors in waste management in the city of Bujumbura, the head of Runa Business Company, a company that deals with the removal of garbage in the urban area of Gihosha, told us during our interviews that “the administrative authorities are considered to be the pillars in terms of raising awareness among households about waste management”. Also, the results, conducted in the city of Bujumbura, show that the lack of awareness has the persistence of garbage scattered in different neighborhoods and the difficulties of adopting the sorting at source of solid household waste.

With regard to this garbage, it should be noted that its appearance is synonymous either with a lack of information, knowledge or interest in good management practices for household solid waste, or simply with a deficit in the waste collection system. The places where the neighbourhood containers were located were used by the population as waste depots, either because of a lack of information or because of a lack of willingness to cooperate with the new system

(SETEMU, 1996: p. 1). Despite the programs that have been set up for the collection of solid waste in the city of Bujumbura, the leaders of the associations involved in this field realize that the illegal dumps are uncontrollable until now in the various places of the city of Bujumbura.

According to the director of the Department of Environment, Hygiene and Urban Sanitation (DEHA) at the Ministry of Infrastructure, Equipment and Social Housing, “The multiplication of illegal dumps is a frequent problem in the different corners of the urban space of the city of Bujumbura and this is often due to the lack of awareness of the population and the absence of follow-up”. The situation in the city of Bujumbura is similar to the results of Dansou and Odoulani (2017) in Benin and Segbeaya (2012) in Togo, which stipulate that the absence of an adequate solid household waste management system in these countries contributes to the birth and multiplication of illegal dumps, thus deteriorating the quality of the physical environment (Figure 2).



Source: Photos taken by Emmanuel Ngabirano during the direct field observation in Ngagara.

**Figure 2.** Solid waste piled up in the urban areas of Ngagara and Buyenzi.

Selective waste sorting is interpreted as one of the indicators of good waste management. Indeed, there is no recovery of waste in the absence of selective sorting. To be effective, this sorting should be done at the same place of production of the solid household waste (Czajkowski et al., 2014). The observation that stems from field observations is that in the city of Bujumbura, waste sorting is almost absent; most households in the city of Bujumbura keep waste of different kinds in the same object. This situation is due to popular registers and the lack of financial, material, human and technical means to ensure the entire solid waste management protocol. In addition, the organizations involved in the collection of solid household waste in this city specify that the practice of selective sorting of solid waste would require a special effort in terms of environmental awareness and education.

This activity would be steered by the administrative authority, according to these organizations. According to the Cleaning Company, in charge of solid waste collection in the central part of Bujumbura City Hall, “the selective sorting of waste requires sufficient financial resources and proven experience in this area”.

Fiorello (2011) gives some basic elements for successful sustainable waste management that starts with sorting at source: it is necessary to explain how to sort waste, how selective waste collection is done, at what times and for what type of waste to go to a waste collection centre (schedules, operation), what the special bins at voluntary drop-off points on the public highway are for, What to do with certain specific wastes, including used medicines and batteries.

### 3.4. Lack of a Developed Landfill

Organizations involved in solid waste management say that the lack of a developed landfill, for different localities in the city of Bujumbura, is one of the major problems for solid waste management in Bujumbura City Hall. This leads to mismanagement, in particular the persistence of illegal dumps. Also, the department in charge of issues related to the environment and urban sanitation of Bujumbura as well as Omega Solutions, one of the household solid waste collection organizations in the northern part of the city of Bujumbura state that “currently, the city of Bujumbura essentially includes the only official landfill in Mubone located on the north-western outskirts of the city in the urban area of Buterere”.

This is therefore seen as a sign of a lack of public policy related to the management of household solid waste. Apart from the fact that this Mubone landfill is not developed, which is a risk factor for contamination of soil, groundwater and a potential source of substances dangerous to the environment (Nhari et al., 2014; Li et al., 2012; Melnyk et al., 2014), it is not sufficient on its own to receive solid household waste produced throughout the city of Bujumbura.

### 3.5. Cultural Factors

In Burundian tradition, we often hear “Nta murundi yishwe n’umwanda” (no Burundian has died because of waste), “Umwanda ni pfa aho untaye” (Waste can be thrown anywhere). This belief is often due to a lack of knowledge about the negative impact of poor waste management. In interviews with OBUHA staff, it emerged that “the influence of people’s lifestyles remains an important point for solid waste management because there are people who collect waste from landfills for their survival”.

The way in which waste is conceived therefore influences its management. So there is no good management as much as the population has not yet changed the mentality. Moch et al. (1999) show that attitudes and representations influence the behaviour of solid waste sorting. According to Elgaaied (2013), people’s beliefs in terms of perceived consequences significantly influence the intention to sort solid waste. For Monsaingeon (2014), waste is perceived in the simplest case as a thing of people, without an owner, because it is voluntarily abandoned. The more people do not change their mentality, the more waste will cause harm to them (Figure 3).

### 3.6. Lack of Neighbourhood Servicing

In Bujumbura city, there are mainly high-standing and low-standing neighbor-

hoods. For high-end areas, the problem of waste collection does not arise. On the other hand, in some low-lying areas in the city of Bujumbura, there are often problems related to road accessibility, which causes a problem of waste collection by trucks. Under these conditions, the waste produced is then thrown away, in most cases, in various public spaces including streets, rivers, lakes, undeveloped plots or nature.



Source: Photo taken by Emmanuel Ngabirano during the direct field observation in Buterere.

**Figure 3.** Solid waste piled up in the urban area of Buterere.

The staff in charge of sanitation at the Bujumbura City Hall says that “some peripheral districts of the city of Bujumbura are facing solid waste collection problems because they are not yet serviced and therefore difficult to access by truck”. The same constant of difficulty in collecting solid household waste was raised by Merino (2007: p. 40) in Nairobi, who states that in southern cities, there is also an upstream difficulty of waste collection, which is often lacking in the poorest neighbourhoods. Thus, the development of urban spaces is one of the levers on which action must be taken to promote good management of household solid waste.

#### 4. Conclusion

Household solid waste management is a less explored topic in the social sciences and humanities, particularly anthropology. This highlighted an anthropological study on the obstacles encountered in the management of household solid waste in the city of Bujumbura. The study revealed that this city faces many challenges related to the management of household solid waste such as the rapid growth of urbanization, insufficient financial resources, lack of environmental awareness and education, lack of developed landfill, the weight of tradition as well as the lack of servicing.

The results also show that humans remain a focal point to be counted on when considering sustainable management of household solid waste in Bujumbura city. Management structures are therefore called upon to integrate household awareness and environmental education into waste management. Poor waste management is therefore one of the factors that handicaps the sustainable development of the country. Academically and scientifically, this research is of interest in the field of anthropology of development. From a practical point of view, it offers managers and practitioners tools that allow them to exploit the notion of waste in a different way and to be able to make decisions about it. However, this work has limitations related to methods and approaches. We invite other researchers to shed light on sustainable policies in the sustainable management of solid waste in Bujumbura city.

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### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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