

**HEALTH-RELATED PRACTICES AND  
PERCEPTIONS AMONG WASTE PICKERS.  
THE CASE OF MBEUBEUSS WASTE DUMP IN SENEGAL.**



Geneva, June 2018

VASINA Marine

[marine.vasina@graduateinstitute.ch](mailto:marine.vasina@graduateinstitute.ch)

Master Dissertation – Master in Development Studies

Supervisor : Professor Suerie Moon

## **Abstract**

In the waste dump of Mbeubeuss in Senegal, waste pickers are informal workers who collect and sort materials for a living. This vulnerable population is exposed to various risks in terms of health, from diseases because of environmental pollution to injuries due to poor working conditions and the absence of protective equipment. This study analyzes the situation of waste pickers in Mbeubeuss and their perceptions about their health. The analysis also addresses the difficulties faced by waste pickers in accessing health care. Waste pickers in Mbeubeuss do not seem to be aware of the existence of collective health insurances, even if the financial cost of health care represents one of the major obstacles to them. In terms of risk awareness, waste pickers lack protective equipment but do not see the necessity of wearing one since health issues are not a priority to them in front of day-to-day economic concerns.

**Key words :** waste pickers, environmental pollution, occupational health risks, health behavior, access to health care, health coverage, Senegal, hazardous waste, informal work

## **Acknowledgments**

I would like to specially thank M. Adama Soumaré, Dakar's Focal City Coordinator of WIEGO, for his precious help and support during my fieldwork, as well as him and his family for their hospitality during my stay in Dakar. My gratitude also goes to Harouna Niasse, El Hadj Malick Diallo, and Aliou Faye Zidane for the time they have spent with me in the waste dump of Mbeubeuss. Lastly, I would like to give a special thanks to my supervisor, Professor Suerie Moon, for her valuable guidance throughout the whole process of writing this thesis.

*(Word count – excluding bibliography and annexes : 27'854)*

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## Executive Summary

This research focuses on waste pickers in the waste dump of Mbeubeuss, in the suburbs of Dakar, Senegal. Waste pickers represent a part of the informal sector and are a vulnerable and marginalized population due to the type of work they are undertaking and the lack of recognition for their contribution to society. Waste pickers often work in poor conditions in open-air landfills, where they are exposed to strong environmental pollution. About 15 million people worldwide work in informal waste recycling, the majority of them in developing countries. They often do not wear any protective equipment, and face great risks of injuries linked to the type of material they are collecting. Waste picking is therefore considered as a dangerous occupation by the literature. In Mbeubeuss, about 2'500 waste pickers collect and sort materials every day amidst toxic fumes and indistinct waste. Studies have shown that the area is particularly polluted because of the presence of the waste dump, but the situation of waste pickers in terms of health is not considered as an urgent matter by the authorities, more preoccupied with the transformation of the waste dump into an official waste treatment facility.

The purpose of this research study is thus to investigate on key issues faced by waste pickers in terms of health. Health issues involve direct diseases and injuries suffered by waste pickers because of poor working conditions, but also difficulties to access quality health care. For example, the financial cost of accessing health care is a crucial obstacle for informal workers such as waste pickers, and the difficulty of benefitting from a social protection and more particularly from a health coverage is also discussed in this research. The aim of this research is to provide a situational analysis regarding the health of waste pickers, but also to analyze their own perceptions and considerations. The literature has highlighted the environmental health problems linked to the existence of open-air waste dumps, but waste pickers' own behavior regarding health has too often been left aside in that kind of analysis. Moreover, the specific case of Mbeubeuss in Senegal lacks a deeper understanding of the situation, and has been overshadowed by other case studies where international streams of waste are involved, which is not the case of Mbeubeuss.

This study fits into broader considerations about economic development and health, and more particularly occupational health and safety (OHS). OHS encompasses working conditions but also working environment, and addresses risks of injuries and illnesses for workers. Poor

OHS is particularly a concern for informal workers, of which waste pickers are a part of. Informal work is characterized by low-skilled and labor-intensive activities, low income, unstable working conditions, and the absence of official contract and social protection. Informal workers are therefore more exposed to health risks because of those conditions. Health hazards are not only linked with work insecurity, but also with lower socio-economic status. Indeed, informal workers usually remain in this sector because of the absence of other work opportunities, and show more readiness to face dangerous working conditions to ensure their livelihood. Poverty is therefore strongly connected with poor OHS: vulnerable populations will accept more precarious jobs but also have less resources to access quality health care, further putting them at risk of impacting their health. The absence of health coverage is for instance a crucial element that needs to be taken into consideration when addressing OHS for informal workers. Reversely, poor health will also prevent workers from being able to earn a living, creating a vicious circle between poverty and ill-health. In the end, a worker's health is impacted by several factors such as socio-economic conditions, the worker's own behavior in terms of health, the working environment, and the possibility of accessing health care, and this whole context needs to be taken into account when considering the connections between health of workers and economic development.

Waste pickers are typically concerned by those issues of poor OHS and informal work aforementioned, since they turned to waste picking by absence of other work opportunities and are not employed by any company. Working conditions in a waste dump are harsh, on one hand because of the toxic smoke hovering over the waste dump and affecting breathing capacities, and on the other hand because of the risks of injuries workers are facing. Waste collapsing, truck accidents, and uncontrolled fires are frequent, and the occurrence of injuries is reinforced by the lack of protective equipment. The strong environmental pollution caused by the waste dump can also cause long-term diseases such as cancers and respiratory disorders. Poor OHS is therefore a crucial matter that needs to be addressed when dealing with the issue of waste picking, but on which the literature has not been sufficiently focusing.

This research is based on a qualitative analysis of interviews conducted with waste pickers in the waste dump of Mbeubeuss, Senegal. Interviews allowed to gather data on the perceptions of waste pickers about the health issues they are facing, as well as information on their health behavior in terms of protection and access to health care. Interviews have also been undertaken with other stakeholders involved in the defense of waste pickers' rights, or involved in the health

care system, such as nurses and doctors of close-by facilities. The latter gave further insights on the health care system in Senegal and on hurdles regarding health coverage for the informal sector.

The results of this research show that health risks do not represent a priority for waste pickers in Mbeubeuss. Indeed, interviewed waste pickers emphasize their absence of choice in undertaking this sort of job, their difficulties to earn a sufficient income, and their impression of being marginalized by the surrounding population. Concerns linked to their situation of poverty and vulnerability overshadow every other possible risk related to their work, such as health risks. They acknowledge the fact that their activity is dangerous and list hazardous elements such as smoke in the waste dump, accidents with trucks, or the risk of cuts from certain kind of waste. But even though they complain about the heavy smoke that is disturbing them during their work, the latter is pointed at because it causes them discomfort rather than because it can become toxic on the long-term. In general, there seems to be a clear lack of awareness about long-term effects on health of working in the waste dump. Diseases put forward by the literature that take several years to occur, such as cancers, have never been cited by waste pickers. If they mentioned that sometimes some of their older colleagues would suddenly pass away inexplicably, they rather tended to attribute this event to God's will rather than to a disease linked to the work in the waste dump.

In terms of access to health care, waste pickers mainly rely on public health care facilities, especially a community health center located at the entrance of the waste dump. This community health center is not entitled to perform other care than basic primary care and faces a clear lack of resources. Waste pickers complain that the center is not efficient enough because of this. They also regret the absence of a qualified nurse in the center, and therefore often turn towards a nurse that opened a practice right across the waste dump. This nurse used to work for the community health center and managed to create a relationship of trust with waste pickers. The financial cost is the major obstacle to access health care facilities for waste pickers, who will avoid resorting to a doctor unless it is an absolute necessity. The lack of time to go to a health care facility has also been highlighted by waste pickers, due to their precarious situation. Some of them use traditional medicine, out of belief and also to save money. A tradition of charity runs among some waste pickers of Mbeubeuss, who pool their small financial resources to help a waste picker who needs a treatment.

This study investigates further the financial aspect of accessing health care through the lens of social protection and more particularly health coverage. The government of Senegal launched in 2013 a program of universal health coverage with the aim to increase the protection of populations that are not covered by regular social protection schemes, such as rural inhabitants and informal workers. The state emphasized the necessity to develop a collective health insurance system throughout the country to allow a better access to health care facilities. Those collective health insurances are thought to enable vulnerable populations to pool their resources to be able to benefit from health care at a lower cost. The government finances half of the yearly contribution for this insurance to encourage low socio-economic classes to engage in such protection schemes. Even though this system of collective insurance has been thought to be the most appropriate to solve the lack of access to health care for vulnerable populations, interviewed waste pickers either were not aware of the existence and functioning of such a system, or claimed that the cost of the contribution was still too expensive for them despite the state's participation.

At the end of this analysis, a few recommendations are put forward to improve the situation of waste pickers in terms of health. First of all, the development of the community health center in the waste dump should be supported by the municipality bordering Mbeubeuss, since many waste pickers complained about its lack of resources. Secondly, this paper emphasizes the lack of awareness-raising measures directed towards waste pickers. When discussing matters of health with waste pickers or other stakeholders working around waste pickers, solutions imagined by interviewees never focus on prevention aspects, but are always about treating the consequences of working in an unhealthy environment. Adequate protection and better awareness of the risks would though lower the costs of addressing health issues afterwards, but this consideration does not seem to come first in discussions. It is therefore suggested at the end of this paper to launch awareness-raising campaigns in partnership with influent waste pickers. Finally, adequate solutions in terms of financing access to health care should be developed specifically for the informal sector, whose living and working conditions are too different to be simply integrated within existing systems of social protection. This process is already ongoing, because discussions are currently taking place between the informal sector and the authorities. In any case, informal workers need to be recognized as forming an integral part of the economy to see their situation improve, and above all, they need to be integrated in the negotiations. For waste pickers more particularly, programs to improve their health should be discussed in accordance with them and implemented directly at the local level.

## List of abbreviations

ARI	Acute respiratory infection
ILO	International Labour Organization
OHS	Occupational Health and Safety
UCG	Solid Waste Management and Coordination Unit (in French : Unité de Coordination et de Gestion des Déchets Solides)
UHC	Universal Health Coverage (in French : CMU – Couverture Maladie Universelle)
WIEGO	Women in Informal Employment Globalizing and Organizing

**Caveat :** The terms *waste picker* and *informal worker* are used throughout this paper as masculine names, even if there are also women who undertake those activities. The use of the masculine is to simplify the text but also refers to the feminine gender.



## Introduction

Waste management in low and middle income countries mainly relies on informal workers working in open air landfills, with an estimated 15 million people worldwide involved in informal waste recycling, and 11 billion tones of solid waste produced each year<sup>1</sup>. Those dumpsites combine indistinctly all kinds of waste, from the most toxic chemicals to domestic waste. Hectares of waste contaminate the ground, infiltrating groundwater and releasing toxic fumes in the air. The environment in dumpsites and around them is thus strongly polluted, affecting workers on site but also the population in the area. Even more, working practices of those informal waste pickers further endanger their health. They often lack protection, not wearing any gloves or masks for example, while dealing with chemical products or sharp objects, making « waste collection a dangerous occupation »<sup>2</sup>. Health issues arising from this pollution, but also diseases and accidents related to improper management of waste by workers, have raised the attention of scholars in the past couple of years. Scientific research has shown the link between waste management practices and the prominence of various diseases among waste pickers and the surrounding population, such as cancer, musculoskeletal injuries, respiratory issues and dermatological diseases<sup>3</sup>.

Those diseases and injuries are part of the daily life of waste pickers working in Mbeubeuss landfill in Dakar, Senegal. Mbeubeuss is a waste dump receiving waste from the whole region of Dakar, namely about 450'000 tons of waste per year. About 2'500 people work on the site of Mbeubeuss<sup>4</sup>. They sort various types of waste, from industrial to household one, but also waste originating from hotels or the close by airport. Mbeubeuss is an open air waste dump, where trucks unload their shipment and numerous waste pickers rummage in this sea of waste for a specific kind of material they can collect and resell to a middleman, in order to gain sufficient money to survive. The accumulation of waste in the landfill provokes small combustions and some waste pickers burn objects such as tires to extract components, creating a constant veil of smoke over the waste dump. Since untreated waste has been piling up from the end of the 1960s when Mbeubeuss first opened<sup>5</sup>, liquids have infiltrated the ground and toxic fumes have polluted the area. A study on the toxicity of the environment in the closest town to

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<sup>1</sup> Yang et al., "Waste Management, Informal Recycling, Environmental Pollution and Public Health," 1–2.

<sup>2</sup> UN Habitat, "Collection of Municipal Solid Waste in Developing Countries," 134.

<sup>3</sup> Yang et al., "Waste Management, Informal Recycling, Environmental Pollution and Public Health," 5.

<sup>4</sup> EJAAtlas, "Mbeubeuss Landfill, Dakar, Senegal."

<sup>5</sup> Cissé, *Les décharges d'ordures en Afrique. Mbeubeuss à Dakar au Sénégal*, 15.

Mbeubeuss, Malika, showed alarming rates of lead and cadmium in the soil and air, as well as renal function alteration among Malika's inhabitants<sup>6</sup>. If inhabitants are impacted by this pollution, it is clear that waste pickers, who work on a daily basis on the site itself, are also affected by this pollution, on top of being highly at risk of getting injured while working.

There is thus a clear link between the pollution created by Mbeubeuss and the health of the community staying in and around it. However, even if waste pickers are the most directly concerned by this issue, insufficient attention has been paid to their health and how their work is affecting them. It has been well established that Mbeubeuss is an ecological disaster for the region, and the government in Dakar has been trying for the last decade to either close or transform the dumpsite and formalize the sector. But the human situation of waste pickers does not seem to be a priority in itself. Waste pickers are part of what is called the informal sector, meaning that they are not formally employed by any company and do not benefit from any contract nor social protection<sup>7</sup>. Discussions are currently taking place with the authorities of Dakar to assess the needs and hurdles faced by informal workers in the city, including waste pickers. An association of waste pickers named Bokk Diom has been created in 1995 already to defend and promote waste pickers' rights<sup>8</sup>, and illustrates the constant fight of informal workers to gain better recognition of their needs and of their role in the city's economic development.

Broadly speaking, the informal sector represents a large part of the economy in developing countries, and keeps rising along with urbanization expansion, especially in Sub-Saharan Africa<sup>9</sup>. Different approaches towards the informal sector have been highlighted by scholars: should the informal sector rather be formalized, or should informal workers be included into the economic system with a better acknowledgement of their contribution to the city development? Few research has been done to link those reflections about economic development in the informal sector with health issues affecting informal workers. Indeed, poor occupational health and safety has been insufficiently explored when tackling workers' vulnerability<sup>10</sup>. In reality, the connection between health at work and economic and social development is crucial: indeed, a worker impaired by an illness or an accident on his workplace cannot provide for his family needs, thus plunging the whole household into further poverty. On

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<sup>6</sup> Cabral-Ndior et al., "Case-Control Study among Residents of Malika (Diamalaye II) Bordering the Mbeubeuss Waste Dump in Dakar (Senegal): Pb and Cd Impregnation and Renal Function Alteration."

<sup>7</sup> For a more detailed description of the informal sector, see the following chapter.

<sup>8</sup> Global Alliance of Waste Pickers, "Association Bokk Diom Des Récupérateurs et Recycleurs de Mbeubeuss."

<sup>9</sup> Myers, *Disposable Cities. Garbage, Governance and Sustainable Development in Urban Africa.*, 4.

<sup>10</sup> Lund and Marriott, "Occupational Health and Safety and the Poorest," 4.

the other side, poverty is also a crucial determinant of health for informal workers, since the household's dependency on the income of the breadwinner forces the latter to accept the most unsafe work positions and perform dangerous tasks. Therefore, « ill-health should not (only) be responded in terms of its medical components but must be seen and therefore treated as part of the wider socio-economic and political response to poverty reduction »<sup>11</sup>. Addressing health risks and practices of informal workers is hence of prime importance for the field of development studies.

Moreover, tackling health practices does not only mean to investigate on informal workers' knowledge about risks at work or on the protection they are wearing to prevent injuries or diseases, but also means to grasp other aspects that influence a worker's health, such as the question of access to health care in terms of possibilities and obstacles. For instance, the financial means to access health care are often an important concern for vulnerable populations, and need to be addressed when discussing those issues. Access to health care services and affordable medicine are one of the targets included in the Sustainable Development Goal number 3, *Ensure healthy lives and promote well-being for all at all ages*<sup>12</sup>. The target also mentions universal health coverage. Indeed, social protection and more specifically health coverage represent crucial elements when addressing the issue of financial access to health care.

In the case of waste picking, this issue is particularly valid. Waste picking in low income countries is most of the time considered illegal by the authorities, who either close their eyes on the sanitary disaster of those landfills, or discriminate and even persecute informal workers, treating them as if they were criminals<sup>13</sup>. Waste pickers thus form a particularly vulnerable population, whose only income is the recyclable waste they are able to sort and sell to middlemen. This strong dependency on the little income they make relegates health considerations at the bottom of their priorities. Even cooperatives of waste pickers provide few trainings and awareness raising about health and safety issues in the business of waste picking<sup>14</sup>. The case of Mbeubeuss in Senegal seems to illustrate well this situation. And even though a

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<sup>11</sup> Grant, "Health and Poverty Linkages," 4.

<sup>12</sup> United Nations, "Sustainable Development Goal 3: Ensure Healthy Lives and Promote Well-Being for All at All Ages."

<sup>13</sup> Kerbage and Abdo, "Cooperation among Workers in the Informal Economy," 22.

<sup>14</sup> Kerbage and Abdo, 36.

national program has been launched in Senegal in 2013 by the government to ensure universal health coverage<sup>15</sup>, informal workers such as waste pickers are still left out of this system.

More generally, research on health practices in the waste picking sector is still lacking in the literature. In that field, « most research related to the informal sector has been limited to investigations of toxicity »<sup>16</sup>. When researchers address the situation of waste pickers in various locations, they always mention the fact that their health is impacted by their work in the waste dump, and clearly state the consequences in terms of diseases, but they do not analyze their health situation in detail. For instance, the literature shows a clear gap in terms of waste pickers' own perceptions about health risks, although apprehending those perceptions is important to better address change in health behaviors among waste pickers. An in-depth analysis of their situation is therefore necessary to better understand the challenges linking the pollution of such waste dumps with their health, and the case of Mbeubeuss seems to be perfectly appropriate for that sort of evaluation.

Taking into consideration all those elements, the present study will thus address the following question : **What are the key issues faced by waste pickers of Mbeubeuss in terms of health ?** More specifically, this research will engage with various aspects of this question, namely : *Which health problems are waste pickers suffering from ? What type of health care is available and used by waste pickers ? What is their awareness of health risks related to their work, and how do they perceive their ability to access health care ?* As hinted in those subquestions, this paper will take into account two different facets of the same issue : the first one will deal with a descriptive and factual analysis of waste pickers' health situation, in terms of diseases, access to health care and actions undertaken by different actors such as doctors, NGOs or the authorities to improve the situation. Among others, this section will provide the opportunity to touch upon the matter of social protection and more specifically health coverage. Besides, the absence of social protection is a current matter for informal workers in Dakar at large, and since waste pickers are falling within the category of the informal sector, it will be interesting to integrate those questions of health risks and access to health care within the struggles of informal workers more broadly. The second facet of this analysis will rather look at subjective perceptions of waste pickers about their own health, considering their awareness and beliefs about health risks in the waste dump. Indeed, it is not only important to establish the risks and problems faced by waste pickers in terms of health,

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<sup>15</sup> Haudeville, "La microassurance santé dans le processus de construction d'un système de protection sociale de base."

<sup>16</sup> Wang et al., "E-Waste in China," 25.

but it is also necessary to take into account waste pickers' behavior towards those health issues, if one wants to understand fully the situation in Mbeubeuss and its hurdles.

The first part of this research will review the literature available on the different concerned fields of study. After setting up the framework of the informal sector in discussions about employment and labor, a review of the latest developments about occupational health in informal employment as well as social protection for informal workers will be provided. Then, the review will apply those elements specifically to the case of waste pickers. Some studies have been undertaken on this particular type of population, but we will see that health practices are most often not the primary focus of those analyses, and lack deeper scrutiny.

The second part of the paper will delve into the specific situation of waste pickers in the waste dump of Mbeubeuss in Senegal, and attempt to answer the aforementioned research question and subquestions. Based on interviews with different actors, this study will investigate perceptions and practices around health issues for Mbeubeuss' waste pickers. An important part will be dedicated to the analysis of discourses of waste pickers themselves about their health, while opinions of other actors linked to waste pickers will also allow a deeper understanding of the question. In other words, this research will provide an evaluation of health risks and awareness among waste pickers, as well as look at the different barriers to access health care in their situation. The aim of this study is thus to contribute to a better knowledge on those issues, as well as to provide sufficient information for a potential policy recommendation, stating how to address best health risks and health care access for waste pickers' community in Mbeubeuss.

## Expansion of the informal sector : challenges and issues

In low and middle income countries, a large part of the waste management system is done by informal waste pickers, collecting waste on the street or in households, sorting out materials in a dumpsite, and selling recyclable parts to middlemen. They do not work for a waste recycling company, and thus depend on the amount of waste they were able to treat during the day, or on the quantity of materials they were able to sell. Their income varies from day to day, and work contracts are not provided, therefore leaving them without any social protection. It is a very insecure job, where any incident (a sickness, an accident, a fire in the landfill) impacts tremendously their livelihood. Those characteristics of waste picking are distinctive of informal work. In developing countries, between 50 and 75% of employment outside of the agriculture sector belongs to the informal part of the economy, thus making the sector an extremely important part of the whole economic system<sup>17</sup>.

Globalization has deepened the importance of the informal sector, through a decline of secure jobs with contracts and an increase of precarious work<sup>18</sup>. Indeed, workers often come into the informal sector after falling out of the formal sector, or because of the absence of opportunities in the formal sector, the latter being unable to provide a sufficient number of jobs for everyone<sup>19</sup>. This expansion of informalization can therefore be considered as a consequence of globalization and capitalism<sup>20</sup>. Indeed, the « increasing use of capital-intensive technology and more efficient methods of production may be responsible for a ‘jobless growth’ phenomenon, characterized by the decline of formal sector jobs and the drift into informality of certain formal sector jobs »<sup>21</sup>. Those evolutions in technology as well as the creation of global competition are therefore threatening those workers’ income and social security, particularly in developing countries, where this global competition tends to lower labor costs<sup>22</sup>. A survey carried out in 10 developing cities showed that in those cities informal employment was even more important than

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<sup>17</sup> Cavé, *La Ruée Vers L’ordure*, 25.

<sup>18</sup> Lund and Marriott, “Occupational Health and Safety and the Poorest,” 4.

<sup>19</sup> Forastieri, “Improvement of Working Conditions and Environment in the Informal Sector through Safety and Health Measures,” 3; ILO, “The Informal Economy in Africa,” 21.

<sup>20</sup> Laha, “Rise of Informalization in Global Capitalism: Exploring Environmental Sustainability in E-Waste Management,” 54.

<sup>21</sup> UN Habitat, “Innovative Policies for the Urban Informal Economy,” 12.

<sup>22</sup> Canagarajah and Sethuraman, “Social Protection and the Informal Sector in Developing Countries,” 2, 34.

formal employment<sup>23</sup>. In Sub-Saharan Africa particularly, rapid urbanization led to an expansion of the informal sector since the 1960s, with an increasing dependency on informal activities for the population's daily needs. More specifically, the neoliberal policies advocated by some governments, with an economic development based on the power of free markets, strongly contributed to this situation. Indeed, « the high rates of urban unemployment produced by rollbacks on government jobs – and not substantially reduced by any parallel growth of private sector employment – has led to a spreading informality to work and to many aspects of life »<sup>24</sup>. Still today, Sub-Saharan Africa has the highest share of informal employment, with 9 out of 10 workers being part of the informal sector<sup>25</sup>. For the case of Senegal more specifically, the contribution of the informal sector to GDP (excluding agriculture) in 2000 equated to 48,8%, and thus represents a key resource for the economy<sup>26</sup>.

Scholars have been showing interest for the question of informal work for a few decades now. The term 'informal sector' first appeared in 1972 in an International Labour Organization (ILO) report<sup>27</sup>. The ILO kept developing the concept of informal work in the following years, finally settling the following definition in 2002 : the informal economy consists of « all economic activities by workers and economic units that are – in law or in practice – not covered or insufficiently covered by formal arrangements »<sup>28</sup>. Since then, scholars have tried to define more precisely what does working in informality means. They first distinguished between the informal sector, the informal economy, and informal employment. The informal sector deals with the work units, and can comprise unregistered enterprises as well as self-employment. Informal employment rather focuses on the workers and corresponds to an absence of social protection, which could happen within or outside the informal sector. Lastly, the informal economy encompasses everything mentioned before, that is enterprises, workers, activities as well as outputs<sup>29</sup>.

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<sup>23</sup> Herrera et al., "Informal Sector and Informal Employment : Overview of Data for 11 Cities in 10 Developing Countries," 2.

<sup>24</sup> Myers, *Disposable Cities. Garbage, Governance and Sustainable Development in Urban Africa.*, 6.

<sup>25</sup> ILO, "The Informal Economy in Africa," 1.

<sup>26</sup> Brown and Roever, "Enhancing Productivity in the Urban Informal Economy," 4.

<sup>27</sup> ILO, "The Informal Economy in Africa," 1.

<sup>28</sup> ILO, 23.

<sup>29</sup> Taylor, *Approaches to Universal Health Coverage and Occupational Health and Safety for the Informal Workforce in Developing Countries*, 12.

If one wants to really tackle what is the informal economy, he therefore needs to look not only at the business characteristics, but also at the working conditions<sup>30</sup>. In other words, taking into account the presence or absence of a formal company for a specific job is not sufficient to assess if the job belongs to the informal sector or not. The characteristics of the job itself are also key elements to establish the status of a worker as informal, such as if the person benefits from a social security protection<sup>31</sup>. Some also established a work place classification in order to better understand the different working conditions, distinguishing between business places, private homes, public spaces, agricultural land, and construction sites<sup>32</sup>. Others created a distinction within the informal sector between :

- unregistered units or enterprises, which do not keep any written account of their transactions
- formal enterprises in which employees have neither a written contract nor social protection
- employees in households (domestic work)<sup>33</sup>.

The informal economy thus encompasses a large diversity of workers and activities. Its heterogeneity makes it difficult to consider it as a whole, and prevents us to fall into a simplified opposition between formal and informal activities<sup>34</sup>. But whatever the work place, the informal sector presents some features that are common to any type of informal work : usually, informal workers use labor-intensive technologies with limited capital on small-scale operations. Their main source of income comes from self-financing, and they are often in competition with other informal workers. They work in unregulated markets, easy to enter without any specific skills<sup>35</sup>. This does not mean that informal workers are completely cut out of the formal system : in reality, they often contribute to the functioning of formal activities. For example, informal waste pickers recuperate waste that is then sold by middlemen to formal businesses. Moreover, the official waste management system often relies on the work of those informal workers, and sometimes even establishes a sort of partnership with them, allowing sometimes for a kind of recognition by

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<sup>30</sup> Samson, "La Récupération Des Matériaux Réutilisables et Recyclables En Afrique - Un Examen Critique de La Documentation Anglaise," 14.

<sup>31</sup> Herrera et al., "Informal Sector and Informal Employment: Overview of Data for 11 Cities in 10 Developing Countries," 10.

<sup>32</sup> Lund and Marriott, "Occupational Health and Safety and the Poorest," 36.

<sup>33</sup> Herrera et al., "Informal Sector and Informal Employment: Overview of Data for 11 Cities in 10 Developing Countries," 5.

<sup>34</sup> Bodson and Roy, *Survivre Dans Les Pays En Développement. Approches Du Secteur Informel*, 124; UN Habitat, "Innovative Policies for the Urban Informal Economy," 10.

<sup>35</sup> Forastieri, "Improvement of Working Conditions and Environment in the Informal Sector through Safety and Health Measures," 3; UN Habitat, "Collection of Municipal Solid Waste in Developing Countries," 127; UN Habitat, "Innovative Policies for the Urban Informal Economy," 9.



the state of informal workers' contribution. But in other cases, waste pickers, and even informal workers in general, are on the contrary harassed by the state, in a conflictual relationship for the appropriation of public space<sup>36</sup>.

Absence of formal work contract, low and unstable income, and lack of social security thus represent the main characteristics of the informal sector. Furthermore, since informal workers usually face worse working conditions, sometimes even dangerous conditions, their vulnerability and exposure to risk is even greater. The absence of social protection, combined with poverty and this higher exposure to risk, makes the issue of informal work even more salient<sup>37</sup>. In terms of health, informal workers also face greater exposure to health risks and are less protected against sudden costs entailed by health issues. Moreover, accessing health care is more difficult for them, mostly because of its cost<sup>38</sup>. Informality is therefore very often associated with poverty, and the ILO claims that in countries where informality decreases, poverty trends also decline<sup>39</sup>.

In comparison with the formal sector, informal workers sometimes work in illegality, or infringe regulation rules enforced by the authorities. Their business is unregistered and cannot rely on institutional support. In terms of occupational health and safety (OHS), they are usually not covered by any type of regulation framework in this regard either, except in some developing countries where independent workers are also covered by labor laws regarding OHS<sup>40</sup>. Various studies have shown that most informal businesses do not remain in irregularity on purpose, but because of unaffordable costs involved for regular businesses if they want to comply with the law and pay the taxes they should pay<sup>41</sup>. Even though the informal sector has been extensively analyzed, it is still difficult for scholars to measure exactly its importance around the world. Studies usually try to see if the worker has a written contract and if he benefits from a social

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<sup>36</sup> Samson, "La Récupération Des Matériaux Réutilisables et Recyclables En Afrique - Un Examen Critique de La Documentation Anglaise," 15, 23.

<sup>37</sup> ILO, "The Informal Economy in Africa," 41.

<sup>38</sup> Taylor, *Approaches to Universal Health Coverage and Occupational Health and Safety for the Informal Workforce in Developing Countries*, 13.

<sup>39</sup> ILO, "The Informal Economy in Africa," 11.

<sup>40</sup> Forastieri, "Improvement of Working Conditions and Environment in the Informal Sector through Safety and Health Measures," 5; ILO, "The Informal Economy in Africa," 29.

<sup>41</sup> ILO, "The Informal Economy in Africa," 24.

security system or a retirement scheme to measure informality<sup>42</sup>. But most informal activities remain unrecorded by the state, making it difficult to count the number of workers involved<sup>43</sup>.

Since informal workers face various issues as shown above, there have also been interesting reflections on possibilities of evolution and transformation of the informal sector, through different approaches. We will briefly touch on two of them here, through the work of the ILO and of UN Habitat. Historically, a first approach defended the idea that only the formal economy could bring sufficient economic growth, and that the informal sector needed to be formalized at all costs. But slowly, another thought emerged with the perception that the formal sector did not have the capacity to absorb the whole active work force. With this second approach, the informal sector became a new option for development, because it had better options for adaptation<sup>44</sup>. Therefore, perceptions about the informal sector have evolved over time, and informal work has now been progressively recognized as a possible alternative to development, leading different organizations to pay attention to its possibilities of improvement<sup>45</sup>.

The ILO however still advocates for a formalization of the sector, through the transformation of the existing unofficial economy into formal activities. The organization argues that it would allow workers to have access to social protection, encompassing basic access to health care, and improving workers' economic security<sup>46</sup>. According to their recommendation 204, «decent work deficits (...) are most pronounced in the informal economy »<sup>47</sup>. They emphasize the fact that the primary problem is not unemployment per se, but low-productivity and low-earning activities, two characteristics of informal employment<sup>48</sup>. The desired goal is thus to implement a transition towards the mainstream economy, but the means to achieve this goal are still debated. Should the capacity of existing formal institutions be improved ? Or should the existing work framework be reshaped to integrate the specificities of the informal sector ?<sup>49</sup>

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<sup>42</sup> Herrera et al., "Informal Sector and Informal Employment : Overview of Data for 11 Cities in 10 Developing Countries," 10.

<sup>43</sup> Forastieri, "Improvement of Working Conditions and Environment in the Informal Sector through Safety and Health Measures," 5.

<sup>44</sup> Bodson and Roy, *Survivre Dans Les Pays En Développement. Approches Du Secteur Informel*, 281.

<sup>45</sup> Bodson and Roy, 123.

<sup>46</sup> ILO, "The Informal Economy in Africa," 18; Forastieri, "Improvement of Working Conditions and Environment in the Informal Sector through Safety and Health Measures," 6.

<sup>47</sup> ILO, "Recommendation No. 204 Concerning the Transition from the Informal to the Formal Economy," 2.

<sup>48</sup> ILO, "The Informal Economy in Africa," 10.

<sup>49</sup> ILO, 19.

The ILO has put forward different solutions to tackle issues common to informal work, such as an upgrading of skills through trainings, which could then incentivize workers to formalize. Indeed, the « strategies to improve productivity in the informal economy must enable workers there to use new skills as leverage to help them move into decent formal work »<sup>50</sup>. By gaining skills, informal workers will enhance their productivity, which might in turn give them access to formal decent jobs. As a result, they will be able to increase their income, leading the ILO to claim that their push for formalization contributes to a strategy of poverty reduction. Indeed, they state that only associating economic growth with better employment opportunities will enable an impact of growth on poverty<sup>51</sup>. Different ways to improve workers' social security, such as social health protection, social assistance programs, or universal social pensions have also been envisaged as a way to reduce their social exclusion. Social health protection is often a key element of such programs, because access to health care is considered as the first main challenge faced by vulnerable populations such as informal workers<sup>52</sup>. We will see later in the analysis that financial access to health care was indeed often the first issue mentioned by waste pickers of Mbeubeuss when asked about their needs and issues regarding health.

UN Habitat has also shown interest towards the informal sector, and more particularly within waste management, but has a different approach compared to the ILO. Instead of advocating for a formalization of the informal sector like the ILO does, it pushes for better regulation, and suggests to reflect on what type of regulation would be the most appropriate. An adequate regulation should thus « focus on measures to release the economic potential of the informal economy »<sup>53</sup>. UN Habitat emphasizes the fact that formalization is not always the most appropriate solution, because if informal workers are transferred and integrated into the formal sector, the wages they would earn in the formal sector would not always be higher than what they currently earn<sup>54</sup>. Formalization is thus not a sufficient incentive to change their situation, and informal workers would then rather remain independent. Only the potential benefits associated with formalization, such as better access to credit and better possibility for savings, could counter-balance the cost of entering the formal sector in terms of wages<sup>55</sup>. Therefore, it is not only a question of availability of work positions in the formal sector, but also of work conditions between the two sectors that will determine the evolution of the informal sector. For instance, a

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<sup>50</sup> ILO, 36.

<sup>51</sup> ILO, 1.

<sup>52</sup> ILO, 45–47.

<sup>53</sup> UN Habitat, “Innovative Policies for the Urban Informal Economy,” 13 ; 119.

<sup>54</sup> UN Habitat, “Collection of Municipal Solid Waste in Developing Countries,” 128.

<sup>55</sup> UN Habitat, “Innovative Policies for the Urban Informal Economy,” 120.

study of the waste picking sector highlighted the importance to take into account waste pickers' own perceptions about being an employee or a self-employed worker. Sometimes, the idea of being an independent entrepreneur is more appealing than changing status and becoming an employee<sup>56</sup>.

Considering the increasing importance of the informal sector in cities and the high costs of formalizing, UN Habitat therefore rather promotes the «inclusion of informal workers in urban dialogues, and [the] mainstream[ing of] the informal economy in urban policies and strategies»<sup>57</sup>. The organization advocates for recognition of informal workers' contribution to their cities, and protection and security of informal employment. Their rights need to be legitimized and informal workers must be integrated in political discussions<sup>58</sup>. This bottom-up approach thus relies on possibilities of development of the informal sector rather than trying to root it out in favor of the formal sector<sup>59</sup>.

The latter approach fits better the situation of Mbeubeuss' workers. As a matter of fact, waste pickers fiercely opposed the attempt of the state to formalize the waste dump, fearing that it would affect their livelihood. However, they seem rather inclined for a more extensive implication of the state in the regulation of the activities in Mbeubeuss, in order to better avoid accidents and dangerous behaviors. A few waste pickers already switched to the formal sector when they started working for a Chinese recycling industry located on the side of the waste dump. However, waste pickers mentioned several times that the company did not pay well and did not have good working conditions. The cost of entering into the formal sector thus seems quite high for those waste pickers, and they rather seem to defend the idea of more regulation rather than simply formalizing the sector. The state has also changed its strategy in the last couple of years : from attempting to close Mbeubeuss and completely formalizing the waste dump, it evolved into reflecting on possibilities of integrating waste pickers in a new project to transform Mbeubeuss and make it safer and more efficient through better regulation.

In the end, the academic literature has studied extensively the topic of informal work, and clearly delimited its features compared to formal work. The informal sector is a substantial part of developing countries' economies, and must not be neglected in development strategies.

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<sup>56</sup> Samson, "La Récupération Des Matériaux Réutilisables et Recyclables En Afrique - Un Examen Critique de La Documentation Anglaise," 23–25.

<sup>57</sup> Brown and Roever, "Enhancing Productivity in the Urban Informal Economy," 1.

<sup>58</sup> Brown and Roever, 33.

<sup>59</sup> Bodson and Roy, *Survivre Dans Les Pays En Développement. Approches Du Secteur Informel*, 283.

Informal workers are a particularly vulnerable population facing more risks than regular employees. In terms of health risks more specifically, the context of insecure work conditions increases possibilities of ill-health. The next chapter will therefore analyze the specificities of occupational health for informal workers.

## Occupational health and safety for informal workers

Within discussions about health and employment, occupational health and safety (OHS) is a key element and a recurring issue regarding certain working conditions, more particularly in developing countries. As a matter of fact, only 5 to 10% of workers in developing countries have access to adequate occupational health and safety provisions<sup>60</sup>. OHS in the informal sector is even more challenging since workers do not benefit from any social protection and are often self-employed. Moreover, their mobility makes it even more difficult to reach them in terms of health and safety prevention. Improving health at work for informal workers is very different from improving health and safety in a formal factory for example, where owners can be constrained by the law to implement measures for the well-being of their employees, whereas paying attention to the health of an informal worker means above all raising awareness about health risks linked to the person's activity.

The concept of occupational health and safety, also sometimes named reversely occupational safety and health<sup>61</sup>, originates from the industrial era at the beginning of the 19th century with the treatment of injuries and illnesses specific to the working population. Today, the idea of OHS evolved into a more comprehensive approach, comprising not only the treatment of work injuries, but also the promotion of health and healthy work environments, as well as an idea of well-being at work. Rantanen<sup>62</sup> presented five principles at the basis of a good occupational health system : prevention, adaptation, promotion, rehabilitation, and primary health care. In other words, a worker needs to be aware of the possible risks related to his work, the type of work must be adapted to the worker's abilities and should have a positive effect on his health, return to work must be facilitated for the worker after a health issue, and quality access to health care for workers must be ensured. OHS encompasses both injuries and illnesses as consequences of poor working conditions<sup>63</sup>. Forastieri<sup>64</sup> identified the most common occupational injuries and illnesses for workers : they mostly consist of musculoskeletal disorders, respiratory disorders, allergic reactions, physical strain and fatigue, stress and injuries with tools. Those disorders

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<sup>60</sup> Lucchini and London, "Global Occupational Health," 252.

<sup>61</sup> The ILO prefers the second version, because safety comes first as a factor and health second as an outcome. (Taylor, *Approaches to Universal Health Coverage and Occupational Health and Safety for the Informal Workforce in Developing Countries*, 60.)

<sup>62</sup> Rantanen, "Principles of Occupational Health," 6–13.

<sup>63</sup> Lund and Marriott, "Occupational Health and Safety and the Poorest," 5.

<sup>64</sup> "Improvement of Working Conditions and Environment in the Informal Sector through Safety and Health Measures," 6.

impact work ability, defined as « the capacity to carry out one's job productively and competently so that the objectives of the work tasks are achieved without exposing the worker to physical or psychological overload »<sup>65</sup>.

## **Occupational health and safety in the informal sector**

Occupational accidents take the lives of 2 million workers a year, and injure 270 million, the majority of them located in Sub-Saharan Africa<sup>66</sup>. The global economic impact of OHS issues even represents 3,94% of the global GDP per year<sup>67</sup>. Indeed, occupational risks are part of the ten major risks determining the burden of disease and disability around the world<sup>68</sup>. However, those numbers are not fully reliable, particularly for the informal sector. Indeed, informality tends to mask the frequency of accidents since some activities are unrecorded<sup>69</sup>, thus leading to an underestimation of the actual numbers. Moreover, global numbers are hiding an « understatement of the inequality of work insecurity »<sup>70</sup>. As a matter of fact, informal workers are a population more at risk for health hazards, because of the absence of regulation by the state and bad coverage by OHS laws, as well as because of the precariousness of certain activities. In general, workers with lower socioeconomic status, among which informal workers, face more dangerous working conditions<sup>71</sup>. Moreover, the working space of informal workers is less clearly defined than for formal workers, implying a blurred line between health issues related to work or to living conditions<sup>72</sup>.

Poor occupational health can therefore be related to dangerous working practices as well as a poor working environment, which both increase the vulnerability of informal workers<sup>73</sup>. A feature of informal work is that, through their activities, workers are more exposed to environmental risks such as air pollution or lack of access to safe water and sanitation. Those environmental risks exacerbate even more the precariousness of those workers towards ill-health and accidents. Moreover, since access to quality health care and absence of social protection are

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<sup>65</sup> Rantanen, "Principles of Occupational Health," 3.

<sup>66</sup> Lund and Marriott, "Occupational Health and Safety and the Poorest," 5.

<sup>67</sup> ILO, "Global Action for Prevention on Occupational Safety and Health (OSH-GAP) Brochure."

<sup>68</sup> Taylor, *Approaches to Universal Health Coverage and Occupational Health and Safety for the Informal Workforce in Developing Countries*, 27.

<sup>69</sup> Forastieri, "Occupational Safety and Health in the Informal Economy," 1.

<sup>70</sup> Lund and Marriott, "Occupational Health and Safety and the Poorest," 5.

<sup>71</sup> Dorman, "The Economics of Safety, Health, and Well-Being at Work," 7.

<sup>72</sup> Lund and Marriott, "Occupational Health and Safety and the Poorest," 6.

<sup>73</sup> Forastieri, "Improvement of Working Conditions and Environment in the Informal Sector through Safety and Health Measures," 6.

often an issue for informal workers, it reinforces further their exposure to health problems<sup>74</sup>. Indeed, a vulnerable population like them is less likely to seek medical treatment because of its cost and their lack of resources<sup>75</sup>. Lastly, the lack of recognition of informal workers as important participants to the global economic system and the absence of adequate data on this population exclude them even more from benefitting from an OHS protection<sup>76</sup>. To sum up, informal workers face more difficulties for adequate occupational safety because of their vulnerable status. They face greater risk but also have restrained choices regarding health protection as well as access to health care services.

This lies at the heart of a problem of health inequality, in which not only the outcome is unequal, but also the process leading to this outcome in terms of possible choices. Health inequality is defined as «measurable differences in health experience and health outcomes between different population groups – according to socioeconomic status, geographical area, age, disability, gender or ethnic group»<sup>77</sup>. Social determinants therefore play a big part in the health of workers and thereby in their OHS protection. For instance, the concept of environmental justice is strongly related to the concept of health inequality: as explained above, environmental risks affect greatly informal workers. Lower socioeconomic classes are more exposed to polluted environments, and «bear a disproportionate share of the burden of environmental health problems»<sup>78</sup>. Waste pickers working in polluted waste dumps are a particularly relevant example.

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<sup>74</sup> Comaru and Werna, “The Health of Workers in Selected Sectors of the Urban Economy: Challenges and Perspectives,” 8,14.

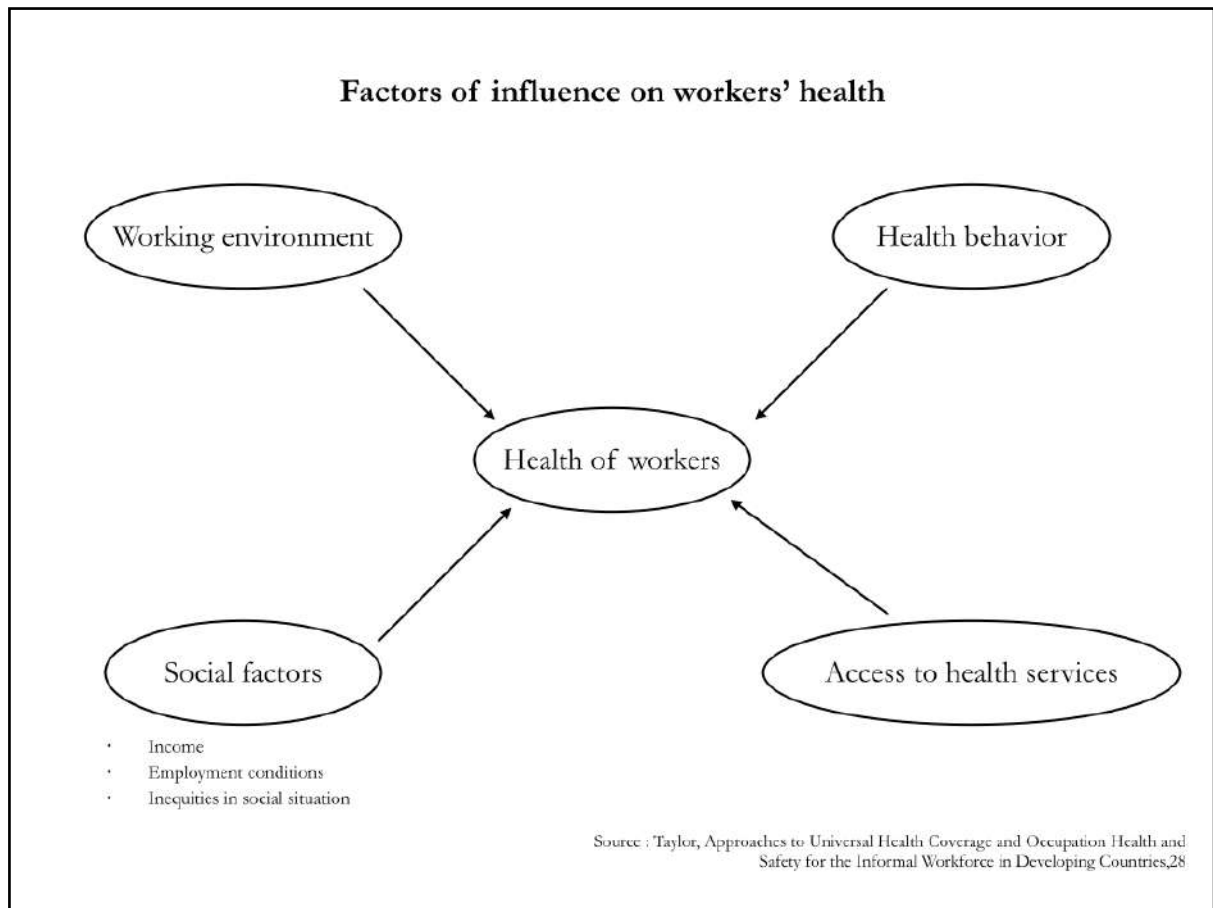
<sup>75</sup> Sachs, *Macroeconomics and Health*, 23.

<sup>76</sup> Taylor, *Approaches to Universal Health Coverage and Occupational Health and Safety for the Informal Workforce in Developing Countries*, 75.

<sup>77</sup> Frohlich and Abel, “Environmental Justice and Health Practices,” 202.

<sup>78</sup> Inagaki, “E-Waste Management: Sustainable Economic Growth or Inequitable Distribution of Environmental Health Risks?,” 37.





**Figure 1 : Factors of influence on workers' health**

It is therefore necessary to take into account the context around workers and not only the type of work if one wants to understand fully an informal worker's vulnerability in terms of health risks. As explained in the last chapter, an informal worker will be more exposed to poverty and rely even more on his activities for a living. That means that economic gains will predominate before any considerations about health risks. Even more, workers will consider occupational health as a cost to invest in rather than as a possible benefit in the future<sup>79</sup>. Because of this, the ILO for instance emphasizes the necessity to establish a positive connection between OHS conditions and productivity in workers' perceptions<sup>80</sup>.

<sup>79</sup> Guidotti, "Occupational Health and Economic Development," 489.

<sup>80</sup> ILO, "The Informal Economy in Africa," 49.

## How is occupational health and safety related to human and economic development ?

OHS is an important matter that needs to be addressed when tackling connections between health and development. Good health is indeed crucial for human as well as economic development, and is therefore a major concern in the field of development studies. If we follow for instance Amartya Sen's capability approach on development, good health is a key element to develop the capacities of actors. For him, « assessing the quality of life takes the form of evaluating [...] the capability to function »<sup>81</sup>, and health will for example allow for job productivity, but also for capacity to grow intellectually<sup>82</sup>. Health is thus at the basis of human capabilities that are so important in Sen's approach, and health shocks are one of the first causes for falling into poverty<sup>83</sup>. Sen stresses the importance of freedom to choose in his capability approach, and good health is an essential component to give an individual full capacity to make choices. The concept of health inequality mentioned above also draws on this capability approach : individuals with poor socio-economic conditions can rely on a more narrow range of capabilities and resources, and thus face greater health issues. Therefore, « people do not have equal choice to act, and this lies at the basis of inequity in society »<sup>84</sup>. Addressing OHS issues is thus completely relevant if one wants to tackle development capabilities of workers.

The existing literature on OHS has already well highlighted the links between economic development and the health and safety of workers. Indeed, occupational health issues impact economic development both at the micro and macro level. At the individual level, a worker impaired by an illness or an injury will cause greater financial insecurity for the family, because he will not be able to provide an income anymore, but also because of the cost of a possible medical treatment. If the worker is the breadwinner of the family, his impairment will trap the household into persistent poverty. Even more, if a person needs to take care of the injured worker, it means a loss of income for this other person, adding what are called invisible costs to the already visible loss of income of the worker<sup>85</sup>. Further consequences of an injury or illness also need to be taken into account as hidden costs, such as indebtedness in the absence of health coverage, or change

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<sup>81</sup> Sen, "Development as Capability Expansion," 44.

<sup>82</sup> Sachs, *Macroeconomics and Health*, 21.

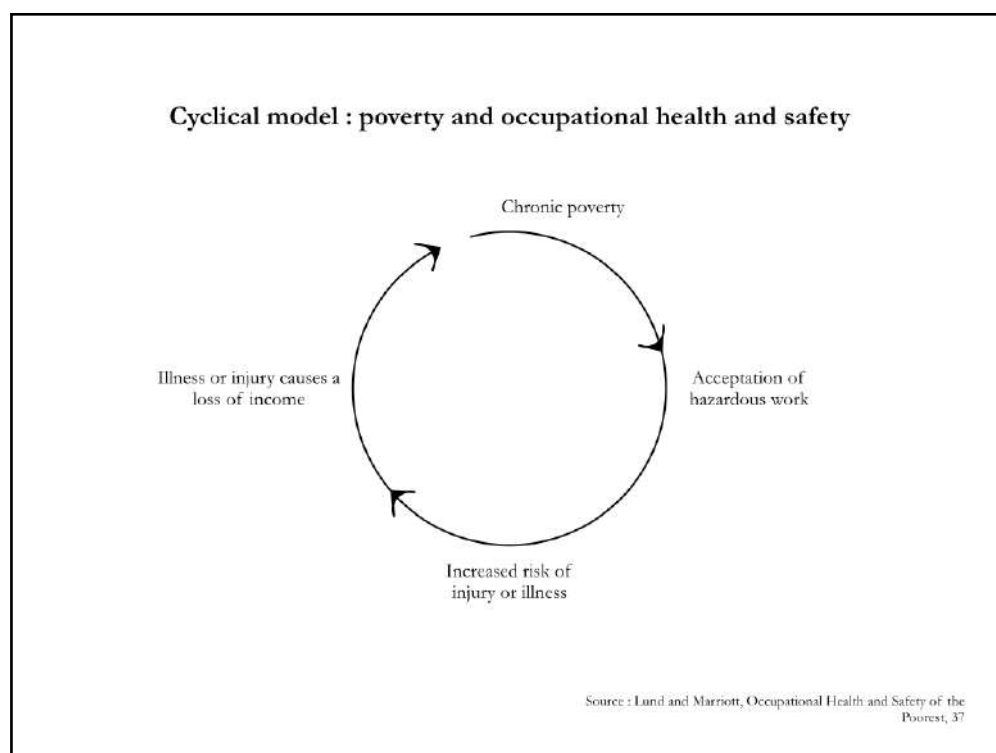
<sup>83</sup> Lund and Marriott, "Occupational Health and Safety and the Poorest," 7.

<sup>84</sup> Frohlich and Abel, "Environmental Justice and Health Practices," 210.

<sup>85</sup> Dorman, "The Economics of Safety, Health, and Well-Being at Work," 4–12.

in livelihood strategies like sending children to work to compensate the lost income<sup>86</sup>. Individuals and households thus bear the most important costs of poor occupational health.

Besides, hazardous working conditions are initially often linked with poverty. Indeed, they are intertwined in a cyclical model, starting with a situation of poverty, which then leads a person to accept a precarious job and thus increases his risk of getting injured or sick. Then, an illness or an injury will prevent the person from working, and the latter will face a loss of income for a certain period of time, or even a permanent impossibility to keep working. This new situation will further deepen the chronic poverty of this person and of his household (see figure below)<sup>87</sup>. The relationship between health and chronic poverty is of course mediated by the nature of the health issue, the situation of the household and the cost of accessing health care. The more the injury or illness is severe, the more it will increase the vulnerability of the household. The worker will have to weigh the cost of getting cured and recover from the health shock versus the cost of not going to work, thus often delaying a necessary treatment and worsening his health condition. This cost is also affected by the level of dependency of the household towards the injured worker, and increases the pressure on the latter to recover faster<sup>88</sup>.



**Figure 2 : Cyclical model**

<sup>86</sup> Grant, "Health and Poverty Linkages," 14.

<sup>87</sup> Lund and Marriott, "Occupational Health and Safety and the Poorest," 37.

<sup>88</sup> Grant, "Health and Poverty Linkages," 9–13.

Costs of poor OHS are not only economic for workers. They are also measurable in terms of human costs, namely the fear, the pain, and the stress that an injury or illness can cause to the worker and to the household<sup>89</sup>. All of this explains why scholars seem to agree that « supporting occupational health is an important tool for the elimination of poverty », and for development in general<sup>90</sup>. Indeed, caring about the health of workers protects vulnerable families from the loss of income due to an illness or injury and prevents them from societal exclusion.

Admittedly, poor OHS has an important impact at the individual level, but as mentioned before, it also affects the macro level. Indeed, illnesses and injuries will decrease the productivity of workers, hampering economic growth<sup>91</sup>. Those aggregate costs of occupational injury and diseases are however hard to measure, especially because of the difficulty to distinguish injuries due to work and those due to the living environment<sup>92</sup>. Despite those considerations, the most common assumption, especially among economists, is that economic development should come before considering matters of health and safety. They « generally assume that OHS is a later step in the sequence of development and should normally be undertaken once the economy is strong enough to absorb the additional expenses required by preventive action »<sup>93</sup>. This approach therefore upstages the social well-being of workers to the benefit of wealth. Consequently, « one major potential source of worker vulnerability, that of poor occupational health and safety, has been left largely unexplored »<sup>94</sup>, when actually, investing in the protection of health workers could « prevent a huge drain on the economy later by reducing the burden of disability and occupational disorders »<sup>95</sup>.

Economic growth is clearly impacted by conditions of employment, especially in the informal sector, where we have seen that health issues have an even greater impact on possibilities of development. The ILO even states that « if economic growth is not associated with [...] an improvement in the conditions of employment in informal activities, then the impact of growth on poverty will be minimal »<sup>96</sup>. Therefore, OHS must definitely be considered

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<sup>89</sup> Dorman, “The Economics of Safety, Health, and Well-Being at Work,” 2.

<sup>90</sup> Rantanen, “Principles of Occupational Health,” 4.

<sup>91</sup> Rantanen, 2; Taylor, *Approaches to Universal Health Coverage and Occupational Health and Safety for the Informal Workforce in Developing Countries*, 55.

<sup>92</sup> Dorman, “The Economics of Safety, Health, and Well-Being at Work,” 29.

<sup>93</sup> Lucchini and London, “Global Occupational Health,” 252.

<sup>94</sup> Lund and Marriott, “Occupational Health and Safety and the Poorest,” 4.

<sup>95</sup> Guidotti, “Occupational Health and Economic Development,” 487.

<sup>96</sup> ILO, “The Informal Economy in Africa,” 1.

as intertwined with income insecurity, both as a consequence and as a cause. It is thus necessary to include the costs resulting from occupational injuries and illnesses on production when calculating the productivity of a community of workers<sup>97</sup>.

## **Improvements of occupational health and safety**

Various elements have been put forward by the literature as necessary steps to improve OHS. According to Forastieri and the ILO, an OHS promotion program should have two main focus : awareness raising on OHS hazards and institutional support for the provision of occupational health services<sup>98</sup>. Awareness raising includes the provision of adequate tools and basic training on first aid and on knowledge about health hazards. The second focus is more centered around health care personnel, who needs to be trained about occupational health to respond adequately to occupational injuries and illnesses. This would improve the provision of quality health services for the workers. The ILO advocates for those steps to be implemented at the local level according to the capacity of local actors. The organization has two specific conventions on OHS, the Promotional Framework for Occupational Safety and Health Convention 187 and the Occupational Safety and Health Convention 155<sup>99</sup>. For informal workers more specifically, Forastieri advocates for an integrated approach to tackle the issue of OHS, with simultaneously elements of health promotion, implementation of social protection and creation of quality employment, even though « there have been limited attempts to deal with the informal sector in the area of health promotion and protection »<sup>100</sup>. The ILO also tempered the role of the state, admitting that methods used by governmental institutions for large-scale industries do not work for the informal sector, and that training and information through participatory activities would be more efficient in the informal sector<sup>101</sup>.

Similarly, another stakeholder dealing with OHS issues, the World Health Organization (WHO), reviewed the literature on the topic and found out that two different types of interventions were often being implemented : one focusing on awareness-raising as a prevention of occupational risks, and one dealing more specifically with the case management of

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<sup>97</sup> Forastieri, “Improvement of Working Conditions and Environment in the Informal Sector through Safety and Health Measures,” 1.

<sup>98</sup> Forastieri, 12.

<sup>99</sup> ILO, “Global Action for Prevention on Occupational Safety and Health (OSH-GAP) Brochure.”

<sup>100</sup> Forastieri, “Improvement of Working Conditions and Environment in the Informal Sector through Safety and Health Measures,” 2.

<sup>101</sup> ILO, “The Informal Economy in Africa,” 50.

occupational diseases, such as the reporting of medical cases and the follow-up on cases<sup>102</sup>. The WHO also acknowledged the link between health and development explained above, since it created in 2000 a Commission on Macroeconomics and Health specifically dedicated to analyze the links between health, economic development, and poverty reduction. Its members made the following statement : « We believe that the additional investments in health would be repaid many times over in millions of lives saved each year, enhanced economic development, and strengthened global security »<sup>103</sup>. The link between OHS and development has thus been recognized and acknowledged by the international community.

### **The importance of social protection for occupational health and safety**

As mentioned already in this chapter, the absence of social protection is a key element reinforcing the vulnerability of informal workers regarding poor occupational health and safety. The expansion of the informal sector has increased poor employment quality, and since informal workers function « mostly outside the accepted institutional framework, and hence beyond the reach of most conventional social protection schemes »<sup>104</sup>, the inclusion of those workers into an effective social protection system is challenging. Today already, 55% of the global population is not covered by any social protection benefit, the number rising even to 82,2% on the African continent<sup>105</sup>. Social protection has been defined as « the set of policies and programs designed to reduce and prevent poverty and vulnerability across the life cycle »<sup>106</sup>, and includes a variety of policy areas such as children and family benefits, maternity protection, unemployment support, employment injury benefits, sickness benefits and health protection. For workers more specifically, social protection mechanisms aim mainly at maintaining the earning capacity of the worker, through enabling access to health care for example, or through a protection during periods of incapacity to work. Informal workers face more income insecurity, and their need for social protection is hence greater. Furthermore, informal workers need to be protected against risks at work like any other workers, but also against structural risks specific to informality<sup>107</sup>.

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<sup>102</sup> Taylor, *Approaches to Universal Health Coverage and Occupational Health and Safety for the Informal Workforce in Developing Countries*, 55.

<sup>103</sup> Sachs, *Macroeconomics and Health*, 1.

<sup>104</sup> Canagarajah and Sethuraman, “Social Protection and the Informal Sector in Developing Countries,” 2.

<sup>105</sup> ILO, “World Social Protection Report 2017-2019. Universal Social Protection to Achieve the Sustainable Development Goals.,” xxix, xxxiii.

<sup>106</sup> ILO, 2.

<sup>107</sup> Canagarajah and Sethuraman, “Social Protection and the Informal Sector in Developing Countries,” 18, 22.

Canagarajah and Sethuraman<sup>108</sup> suggest that the approach for social protection of informal workers should therefore be more comprehensive, and should include a preventive aspect of social protection by addressing the structural causes of informal workers' vulnerability. Social protection should thereby aim at eliminating the risks for informal workers more than minimizing or alleviating them as it usually is the case for formal workers. Indeed, traditional social protection usually addresses risks as a consequence only, and is not about risk prevention. For example, the recognition by the state of informal workers and the elimination of discrimination towards them would be an important first step, as well as giving them access to the economic market. But for this, it is first necessary for the state to understand the functioning of the informal sector as a way to ensure the efficiency of the programs rather than to perpetuate a top-down approach. For that matter, « the informal sector should be a central stakeholder in the design of social protection measures »<sup>109</sup>. Following a right-based approach, those measures would enhance better social protection and therefore recognize the right of informal workers to be included in the global economy. The integration of informal workers in social protection schemes is a particularly pressing issue on the African continent, where those schemes usually cover only workers in the public sector and formal workers, namely about 15% of the total population<sup>110</sup>. But in reality, « very few social protection schemes in operation are either comprehensive (...) or focus exclusively or mainly on workers in the informal sector »<sup>111</sup>.

In the health sector more particularly, existing social protection mechanisms include contributory schemes such as micro-finance insurance, or non-contributory schemes such as subsidies for the poorest by the state through social assistance programs. Regarding contributory schemes, if social protection remains determined by the income of the beneficiary through a participation to the cost of social protection provisions, poorer workers will not be able to afford social protection and will favor current consumption needs over social security<sup>112</sup>. Moreover, most insurance programs are not available to workers of the informal sector. For example, Grant<sup>113</sup> suggested tools to reduce the impact of illnesses on chronic poverty, such as the reduction of health care costs or the creation of insurance and credit systems to cover health care costs. But micro-insurance schemes are often not the ideal solution : the idea for customers of paying for a risk that might never occur is often prohibitive, and the cost of a micro-insurance is

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<sup>108</sup> 40, 50.

<sup>109</sup> Canagarajah and Sethuraman, 51.

<sup>110</sup> ILO, "World Social Protection Report 2017-2019. Universal Social Protection to Achieve the Sustainable Development Goals," 122.

<sup>111</sup> Canagarajah and Sethuraman, "Social Protection and the Informal Sector in Developing Countries," 20.

<sup>112</sup> Canagarajah and Sethuraman, 36.

<sup>113</sup> Grant, "Health and Poverty Linkages," 27.

also too high for extremely poor populations<sup>114</sup>. The WHO Commission on Macroeconomics and Health still suggests to pool resources of the community as an incentive to cover healthcare costs, for example with a system in which the state would contribute to the expenses at the same level than the community does. For example, if someone in the community would pay 1\$, the state would participate with the same amount<sup>115</sup>. Concerning subsidies provided by the state, the latter will often decide to provide social protection to the most vulnerable if it considers that the costs implied will be exceeded by social benefits stemming from those initial investments, such as enhanced economic productivity. However, those subsidies schemes often « address the poor or low income population in general, and not specifically the workers in the informal sector »<sup>116</sup>. They are often targeted towards the non-working population such as children, disabled and elders, and have only little effect on the working informal population<sup>117</sup>. Today, health coverage, more specifically for vulnerable populations, is now recognized as a priority in terms of development strategies. But in general, data on health coverage and access to health care services is still too scarce and still needs to be further investigated<sup>118</sup>.

In the end, the existing literature has well established the link between OHS and economic development, by showing that economic factors influence the distribution of quality occupational health among workers, with informal workers being impacted the most ; but also that reversely, ill-health affects economic growth at both individual and macro level. OHS thus needs to be treated both as a cause and consequence of economic development, with health as an input to increase economic growth and wealth as a mean to improve health<sup>119</sup>. Accordingly, poverty and ill-health also need to be treated in a bi-directional relationship, with ill-health creating poverty, and poverty perpetuating poor health status<sup>120</sup>. Nevertheless, the literature also shows that reliable data on health risks for informal workers is still lacking, as well as consideration for the importance of « work » within the poverty and health model. The focus is indeed too often oriented towards conventional places of work, namely formal work<sup>121</sup>. Besides, interventions have been too much directed towards the medical determinants of health, whereas

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<sup>114</sup> Haudeville, “La microassurance santé dans le processus de construction d’un système de protection sociale de base,” 33–34.

<sup>115</sup> Sachs, *Macroeconomics and Health*, 60.

<sup>116</sup> Canagarajah and Sethuraman, “Social Protection and the Informal Sector in Developing Countries,” 38.

<sup>117</sup> ILO, “World Social Protection Report 2017-2019. Universal Social Protection to Achieve the Sustainable Development Goals,” 123.

<sup>118</sup> ILO, 104.

<sup>119</sup> Dorman, “The Economics of Safety, Health, and Well-Being at Work,” 1; Mirvis and Clay, “Health and Economic Development,” 135.

<sup>120</sup> Grant, “Health and Poverty Linkages,” 4.

<sup>121</sup> Lund and Marriott, “Occupational Health and Safety and the Poorest,” 6–7.



other aspects such as the consideration of environmental health hazards or the improvement of social systems, for example health coverage, are also crucial for the quality of OHS<sup>122</sup>. Indeed, social protection for informal workers is a necessary priority to take into consideration when enabling better OHS provisions. We have seen that this topic still needs further research and reflection to better integrate this category of workers. The present research could contribute to fill those gaps for a specific category of informal workers, namely waste pickers.

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<sup>122</sup> Mirvis and Clay, “Health and Economic Development,” 145.

## The case of informal waste pickers

After having discussed the specificities of informal work as well as issues related to occupational health in the informal sector, it is now time to apply those reflections to the specific case that interests us in this study, namely informal waste pickers. Perceptions about waste have evolved in the last decades, with a new awareness that increasing waste production has a strong environmental impact. From the 1990s, discussions about waste became a key point in urban development agendas<sup>123</sup>. The issue of workers dealing with waste recycling, more specifically in African countries, raised the attention of scholars from the 2000s<sup>124</sup>. Indeed, « municipal waste collection services have failed to keep pace with the growth of demand amidst Africa's comparatively rapid rates of urbanization »<sup>125</sup>. Landfills have been the only existing scheme in the treatment of waste in developing countries for a long time, and cities have only started to try to identify alternatives in the 2000s. More than 15 million people are involved in waste recycling around the world, 80% of them being active in the informal economy<sup>126</sup>. They work for the vast majority in developing countries, where open air waste dumps receive the indistinct trash of billions of inhabitants and industries. Indeed, « landfill remains the most widely used approach in the low-income and middle-income world due to its low cost », and because the formal sector does not have the capacity to handle the increasing amount of waste<sup>127</sup>.

Waste pickers are defined as individuals who collect, sort and sell recyclable waste<sup>128</sup>. They might focus on a specific type of waste, like electronic waste for example, or sort different materials depending on their value and the price they can obtain from it. Different terms are used to describe those workers, such as *scavengers* and *reclaimers*, but the term *waste pickers* remains the most commonly used in the existing literature<sup>129</sup>. The first World Conference of waste pickers that took place in 2008 stressed the fact that the designation *waste pickers* encompasses various types of individuals, from « poor people rummaging through garbage in search of food, clothing

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<sup>123</sup> Schenck, Blaauw, and Viljoen, "The Socio-Economic Differences between Landfill and Street Waste Pickers in the Free State Province of South Africa," 532.

<sup>124</sup> Samson, "La Récupération Des Matériaux Réutilisables et Recyclables En Afrique - Un Examen Critique de La Documentation Anglaise," 1.

<sup>125</sup> Myers, "The Politics and Technologies of Urban Waste," 449.

<sup>126</sup> Yang et al., "Waste Management, Informal Recycling, Environmental Pollution and Public Health," 2; Kerbage and Abdo, "Cooperation among Workers in the Informal Economy," 22.

<sup>127</sup> Yang et al., "Waste Management, Informal Recycling, Environmental Pollution and Public Health," 1.

<sup>128</sup> Schenck, Blaauw, and Viljoen, "The Socio-Economic Differences between Landfill and Street Waste Pickers in the Free State Province of South Africa," 533.

<sup>129</sup> Samson, "La Récupération Des Matériaux Réutilisables et Recyclables En Afrique - Un Examen Critique de La Documentation Anglaise," 1.

and other basic, daily needs to informal private collectors of recyclables for sale to middlemen or businesses, as well as organized collectors/sorters of recyclables linked to unions, cooperatives or associations »<sup>130</sup>. This present research is focusing on the second type of population, namely informal workers sorting recyclables. Since it is the most commonly used in the literature, the term *waste pickers* will also be used throughout the whole study. This research focuses specifically on this type of population, but it is important to keep in mind that waste pickers are not the only type of workers active in a waste dump. Indeed, middlemen who buy recycled material to waste pickers, but also food and junk vendors, as well as other informal workers, also rely on the waste dump for a living<sup>131</sup>. The waste dump can therefore be considered as a mini society, in which waste pickers try to reaffirm their position as important actors of the waste dump. As a matter of fact, « being a waste picker is not merely about work but also an identity »<sup>132</sup>.

Waste picking is an autonomous activity, and often represents the only source of income for those who work in a waste dump<sup>133</sup>. This income is very uncertain, since it depends on the amount of waste collected every day, and in any case does not represent much. Waste picking is also characterized by a facility of entry into the sector, because this work does not require any education or special skills. It is a labor-intensive and unregulated activity<sup>134</sup>. Those distinctive features are also specificities of the informal sector more broadly, as highlighted in the chapter about informal work. Waste pickers are for the major part rural migrants, who come to the city with the hope of finding a better alternative than agriculture, but end up in the waste recycling business by lack of other opportunities and absence of requirements to enter this sector<sup>135</sup>. Therefore, the waste picking sector is often dominated by a particular ethnic group, coming from a similar region<sup>136</sup>. Waste pickers are a marginalized population, disregarded by society who associates the activity of waste picking with dirt, illegality and criminal activities<sup>137</sup>. They are not recognized as full economic actors who contribute to the maintenance of a city's cleanliness. They thus lack legitimization and recognition as valid actors in the waste management system<sup>138</sup>. New technologies of waste management now involve the mechanization of their work and

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<sup>130</sup> Kerbage and Abdo, "Cooperation among Workers in the Informal Economy," 5.

<sup>131</sup> Cavé, *La Ruée Vers L'ordure*, 67.

<sup>132</sup> Kerbage and Abdo, "Cooperation among Workers in the Informal Economy," 32.

<sup>133</sup> Dias and Samson undertook a longitudinal study on waste pickers in different cities with 760 participants, and it appeared that 75% of them relied on waste picking as their only source of income ("IEMS Report," 11.)

<sup>134</sup> Schenck, Blaauw, and Viljoen, "The Socio-Economic Differences between Landfill and Street Waste Pickers in the Free State Province of South Africa," 533.

<sup>135</sup> Secretariat of the Basel Convention, "Where Are WEee in Africa ? Findings from the Basel Convention E-Waste Africa Programme," 30.

<sup>136</sup> UN Habitat, "Collection of Municipal Solid Waste in Developing Countries," 125.

<sup>137</sup> Kerbage and Abdo, "Cooperation among Workers in the Informal Economy," 22.

<sup>138</sup> Dias and Samson, "IEMS Report," 8.

relegates their practices as being « outdated and primitive work »<sup>139</sup>. Historically, when the state started to show some interest towards recyclables, it created a conflict of appropriation between informal waste pickers and the authorities, both competing for waste as a resource. The process of exclusion and discrimination of waste pickers by the state therefore originates from this situation<sup>140</sup>. However, since the material collected and sorted by informal waste pickers is usually sold to formal enterprises, waste pickers are clearly integrated within the waste management system, and even more, help the formal economy of waste to function<sup>141</sup>, a link between the formal and informal economy often overlooked.

Waste pickers face numerous issues in their day-to-day activities. They lack the power to fix prices when they sell what they have collected to middlemen, and are thus very dependent on the prices of the market as well as on the power of the middleman<sup>142</sup>. Middlemen then sell those materials to private recycling industries. Waste pickers are thus in competition to find the highest amount of recyclables possible to sell to middlemen and for the access to waste<sup>143</sup>. Besides, the more lack of opportunities in the formal sector pushes workers towards the waste picking business, the fiercer the competition is in the waste dump since the number of waste pickers increases. As informal workers, waste pickers are not protected by laws and are more exposed to harassment by the authorities, who treat them sometimes as illegal workers<sup>144</sup>. On top of this, the lack of infrastructure available to store the waste collected increases the risk of seeing their material stolen, thus making their situation particularly insecure<sup>145</sup>. Health issues addressed in this research therefore add up to an already precarious situation in which waste pickers are particularly vulnerable. In what follows, we will first look at the literature on health issues related to the activity of waste picking in terms of pollution and accidents. Challenges around access to health care and health coverage will subsequently be discussed in a second part.

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<sup>139</sup> Dias and Samson, 17.

<sup>140</sup> Cavé, *La Ruée Vers L'ordure*, 28.

<sup>141</sup> Dias and Samson, "IEMS Report," 39.

<sup>142</sup> Kerbage and Abdo, "Cooperation among Workers in the Informal Economy," 26.

<sup>143</sup> Cointreau, "Occupational and Environmental Health Issues of Solid Waste Management," 33.

<sup>144</sup> Kerbage and Abdo, "Cooperation among Workers in the Informal Economy," 26.

<sup>145</sup> Dias and Samson, "IEMS Report," 24, 37.

## Dangerous and unhealthy practices in the informal waste sector

Waste picking is a dangerous occupation for health in various ways and for different reasons : because of the composition of waste itself (for example rejections of industries such as toxic chemicals), because of the composition of waste as it decomposes (creation of toxic gases or liquids), or because of the practices of collecting and sorting waste<sup>146</sup>. Health hazards associated with waste picking can be separated in two categories, even though the risks are often intertwined. The environmental health risks due to the pollution of the dump affect waste pickers as well as inhabitants living in the area, while occupational health risks are more linked to practices of sorting and recycling and concern more specifically waste pickers.

### Environmental health risks

Open air landfills are extremely polluting for the environment, affecting the soil, the air and the groundwater in the area. A major concern in landfills is the creation of leachate, a liquid drained from waste and containing harmful substances, infiltrating water resources<sup>147</sup>. The accumulation of waste of different sorts in a same place, that remains in open air under the sun, is prone to develop smoke emissions or even fires. And since part of the waste is composed of toxic chemicals, the smoke created is of course also harmful, releasing for example carbon monoxide, nitrogen oxide or hydrogen sulfide<sup>148</sup>. In periods of heavy rains, water accumulates amidst the waste and becomes stagnant water, a source of propagation for mosquitoes and « breeding grounds for pathogenic organisms responsible for dengue, leishmaniasis, diarrhea, typhoid, anthrax, cholera, [and] malaria »<sup>149</sup>. Electronic waste and chemical industrial waste also release heavy metals such as lead, chromium, zinc and copper into the ground. Besides, high concentration of lead has been found in the blood of inhabitants around waste dumps and of informal recyclers<sup>150</sup>.

This pollution has an impact on people active in the waste dump, since it affects the respiratory system but can also lead to dermatological disorders. Indeed, respiratory illnesses and breathing problems, such as pneumonia and asthma, are frequent pathologies among waste

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<sup>146</sup> Cointreau, "Occupational and Environmental Health Issues of Solid Waste Management," 1.

<sup>147</sup> Cissé, *Les décharges d'ordures en Afrique. Mbeubeuss à Dakar au Sénégal*, 34.

<sup>148</sup> Chintan Environmental Research and Action Group, "inFORMAL-Formal. Creating Opportunities for the Informal Waste Recycling Sector in Asia," 32.

<sup>149</sup> Yang et al., "Waste Management, Informal Recycling, Environmental Pollution and Public Health," 5.

<sup>150</sup> Yang et al., 4.

pickers. Other illnesses such as infections from parasites and diarrhea are also common, as well as intoxications from contaminated food, either because animals eaten by men have consumed waste or because the waste picker has eaten himself a product in the waste dump<sup>151</sup>. Exposure to certain products or volatile compounds increases possibilities of cancer<sup>152</sup>. Children who work in a waste dump are even more vulnerable to those health hazards because of their smaller morphology<sup>153</sup>. Generally speaking, solid waste workers are 3 to 6 times more at risk of contracting infections or parasites, 10 times more at risk of getting diarrhea, and 1.4 to 2.6 times more prone to pulmonary disorders<sup>154</sup>.

This impact on health is even further exacerbated by the absence of protection worn by workers in the waste dump. Indeed, they usually do not wear any mask, meaning that they spend their days (and sometimes nights when they live in the waste dump) breathing toxic smoke<sup>155</sup>. Health hazards such as cancers or respiratory infections are particularly pernicious because they do not have an immediate visible effect on the body, and rather affect health on the long-term with a lag period between the cause and the effect<sup>156</sup>. This is a typical feature of environmental pollution, making it harder to raise awareness among an impacted population on the possible effect of this pollution on their health. In the case of waste pickers, as for other vulnerable populations, their priority is employment and trying to earn enough money for their livelihood. In other words, they naturally give priority to more urgent matters than long-term effects on health and diseases that they might not even develop in the end. With those long-term effects, it is harder to take notice of a connection between possibilities of economic development and good health. Indeed, it is easier to realize that an injury will keep you from working and thus earning a living, but the impact on economic productivity of a disease that will take years to develop is less straightforward. Raising awareness about this issue is therefore even more complicated, while it would actually be « vital to integrate health and safety precautions into informal practices »<sup>157</sup>. But there seems to be some awareness about the fact that waste picking is an unhealthy

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<sup>151</sup> Chintan Environmental Research and Action Group, “inFORMAL-Formal. Creating Opportunities for the Informal Waste Recycling Sector in Asia,” 32; Cointreau, “Occupational and Environmental Health Issues of Solid Waste Management,” 28.

<sup>152</sup> Yang et al., “Waste Management, Informal Recycling, Environmental Pollution and Public Health,” 5; Cointreau, “Occupational and Environmental Health Issues of Solid Waste Management,” 22.

<sup>153</sup> Cointreau, “Occupational and Environmental Health Issues of Solid Waste Management,” 1.

<sup>154</sup> UN Habitat, “Solid Waste Management in the World’s Cities. Water and Sanitation in the World’s Cities 2010,” 15.

<sup>155</sup> Cointreau, “Occupational and Environmental Health Issues of Solid Waste Management,” 19.

<sup>156</sup> Cointreau, 11.

<sup>157</sup> Secretariat of the Basel Convention, “Where Are WEee in Africa ? Findings from the Basel Convention E-Waste Africa Programme,” 46.

occupation, because waste pickers interviewed in various studies reported that they experienced more health issues since they started working in waste picking<sup>158</sup>.

### **Unsafe practices : occupational health risks**

On top of working in an extremely polluted environment, informal waste pickers also face the risk of injuries and accidents while working in a waste dump. A landfill encompasses all types of waste possible, from household waste to industrial waste, and sometimes even hospital waste. Waste pickers can sort different materials, from scrap metal to glass, plastic bottles, textiles or electronic waste among others<sup>159</sup>. Since they do not necessarily wear any protective equipment, including safety shoes or boots, or even gloves, more or less severe cuts in waste happen frequently, which can potentially lead to infections such as tetanus or hepatitis<sup>160</sup>. They are also exposed to chemicals, solvents or pesticides present in containers, or heavy metals in batteries for example<sup>161</sup>. Workers prefer to work without this protective equipment for better handling of the objects<sup>162</sup>, and even if they have some, they often prefer to sell it in exchange of money<sup>163</sup>. The place where the trucks unload the waste they were carrying is also quite dangerous : waste pickers face the risk of being buried by accident under the unloaded waste and smothered<sup>164</sup>. Accidents with trucks are quite common, since waste pickers gather right next to them. Indeed, « accidents with disposal site equipment and trucks are probably the greatest cause of fatalities at most dumps in developing countries »<sup>165</sup>.

Another cause of accidents in a waste dump mentioned by the literature is uncontrolled fires spreading quickly in the dump and trapping waste pickers in it. Those fires are mostly due to the practices of waste pickers themselves, who « often burn garbage to find metals which have a high market value »<sup>166</sup>, but can also be initiated by the combustion of waste due to the combination of heat, rotten organic waste and chemicals. A few weeks before interviews being

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<sup>158</sup> Cointreau, "Occupational and Environmental Health Issues of Solid Waste Management," 12.

<sup>159</sup> Yang et al., "Waste Management, Informal Recycling, Environmental Pollution and Public Health," 2.

<sup>160</sup> UN Habitat, "Solid Waste Management in the World's Cities. Water and Sanitation in the World's Cities 2010," 15.

<sup>161</sup> Cointreau, "Occupational and Environmental Health Issues of Solid Waste Management," 9.

<sup>162</sup> Yang et al., "Waste Management, Informal Recycling, Environmental Pollution and Public Health," 5.

<sup>163</sup> UN Habitat, "Solid Waste Management in the World's Cities. Water and Sanitation in the World's Cities 2010," 16.

<sup>164</sup> Schmidt and Gérard, "Sénégal."

<sup>165</sup> Cointreau, "Occupational and Environmental Health Issues of Solid Waste Management," 33.

<sup>166</sup> Chintan Environmental Research and Action Group, "inFORMAL-Formal. Creating Opportunities for the Informal Waste Recycling Sector in Asia," 33.

conducted in Mbeubeuss for this research, the waste dump also went through a big fire, luckily without anyone getting injured, but destroying part of the work and small infrastructure built by waste pickers<sup>167</sup>. The fire outbreak was caused by tires being burnt and the wind pushing it to other parts of the waste dump. Waste picking can therefore be considered as a dangerous activity, partly because of the work environment but also because of unsafe practices of waste pickers themselves. Frequent accidents such as explosions and debris slides also add up to this risk<sup>168</sup>.

Considering this important amount of risks in waste picking, UN Habitat provided a few recommendations about health and safety in solid waste collection in developing countries, among which the wearing of protective clothing, the provision of toilets and washing facilities, as well as regular medical check ups<sup>169</sup>. They also emphasized the fact that waste pickers need a motivation to care about their health, and suggested for example a refund system for the wearing of a protective equipment or a health check<sup>170</sup>. The World Bank offered similar recommendations, in addition to the suggestion to close open air dumps and replace them with sanitary landfills<sup>171</sup>. On another level, ILO's recommendations rather focused on the authorities' implication in the recognition and protection of waste pickers. A joint ILO and WIEGO study analyzed the advantages of organizing waste pickers through cooperatives or associations, but admitted that even if already existing organizations of waste pickers often provide trainings for their members such as technical or legal trainings to gain skills and recognition, « very few cooperatives provide[d] or facilitate[d] occupational health and safety [...] training to members »<sup>172</sup>. Therefore, the ILO and WIEGO advocated for a facilitation by governments in the provision of trainings on occupational health and safety. As a matter of fact, « mitigating work-related injuries and health hazards would enhance the productivity of [...] waste pickers, and reduce their health care costs »<sup>173</sup>.

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<sup>167</sup> Diouf, "Incendie à Mbeubeuss."

<sup>168</sup> Yang et al., "Waste Management, Informal Recycling, Environmental Pollution and Public Health," 5.

<sup>169</sup> UN Habitat, "Collection of Municipal Solid Waste in Developing Countries," 135.

<sup>170</sup> UN Habitat, "Solid Waste Management in the World's Cities. Water and Sanitation in the World's Cities 2010.," 17.

<sup>171</sup> Cointreau, "Occupational and Environmental Health Issues of Solid Waste Management," 36.

<sup>172</sup> Kerbage and Abdo, "Cooperation among Workers in the Informal Economy," 36.

<sup>173</sup> Kerbage and Abdo, 52.



### Health risks faced by waste pickers

- Respiratory diseases
  - Pneumonia, bronchitis, asthma, breathing difficulties
- Contamination through food or water consumption
  - Fever, diarrhea, dysentery
- Accidents/injuries
  - Cuts, burying by waste, garbage slides, fires, punctures (tetanus)
- Cancers
- Dermatological disorders
- Musculoskeletal disorders
  - Back injuries from lifting heavy loads
- Parasites
- Infections through direct contact with contaminated material
- Lead poisoning from burning waste
- Reproductive disorders
  - Birth defects

Figure 3 : Health risks faced by waste pickers

### Access to health care and social protection

As shown above, the literature about waste pickers has identified quite precisely all the health hazards and risks faced by waste pickers, even though epidemiological studies with clinical data on health consequences for waste pickers on a larger scale are still lacking<sup>174</sup>. But a more important gap is that those authors stuck to the bare enunciation of problems and risks without investigating other details related to health, such as what treatment waste pickers resort to, what are their possibilities of getting cured, or what kind of social protection they benefit from. This can be explained by the fact that health is often not their main focus for their analysis, and they therefore only cover basic information about health hazards. However, the question of access to health care and the presence of social protection is crucial for informal workers, as already explained in the previous chapters.

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<sup>174</sup> Cointreau, “Occupational and Environmental Health Issues of Solid Waste Management,” 11.

Concerning waste pickers, almost no studies have dealt with this specific issue, and when they have, they are usually case studies about one particular situation. For example, a study carried out by Dan Watch, a Danish organization, focused on waste arriving in Ghana and on e-waste workers<sup>175</sup>. It highlights among others their lack of access to basic sanitary facilities, and criticizes the fact that waste pickers' diseases are not included enough in the work of health care facilities. Indeed, clinics tend to concentrate on diseases such as malaria, tuberculosis and typhoid rather than on the effects that the handling of waste can provoke. Another research, also on Ghana<sup>176</sup>, examined the barriers to access formal quality health care among e-waste workers, and found out that the main barrier that kept waste pickers from seeking treatment was the financial cost. Most of them did not have any health insurance and were not aware of the possibilities of getting one. Besides, UN Habitat, in its general analysis about solid waste management, advocates for the implementation of micro-insurance schemes for waste pickers to ensure better health care access<sup>177</sup>. Of course, other analyses about waste pickers do mention the fact that they do not have access to any kind of social protection, making them even more vulnerable to health hazards<sup>178</sup>, but the analysis does not go further than denouncing this absence of health coverage.

In the end, we could say that the existing literature about waste pickers' health is half complete, and still displays important gaps. Even if the range of injuries and illnesses has been well addressed by scholars, further investigations on this issue, more specifically on access to health care and existence of health coverage, would deserve closer attention. Moreover, a few authors insist on the fact that waste pickers are not passive objects enduring hardships without any saying, but instead, that they need to be considered as active agents and be placed at the center of the process<sup>179</sup>. A research should therefore also examine how they apprehend certain issues and what are their perceptions and ideas about potential solutions, and not only identify and list all the issues they are facing.

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<sup>175</sup> Frandsen, Rasmussen, and Swart, "What a Waste - How Your Computer Causes Health Problems in Ghana."

<sup>176</sup> Asampong et al., "Health Seeking Behaviours among Electronic Waste Workers in Ghana."

<sup>177</sup> UN Habitat, "Solid Waste Management in the World's Cities. Water and Sanitation in the World's Cities 2010.," 17.

<sup>178</sup> Comaru and Werna, "The Health of Workers in Selected Sectors of the Urban Economy: Challenges and Perspectives," 14; Kerbage and Abdo, "Cooperation among Workers in the Informal Economy," 1.

<sup>179</sup> Samson, "La Récupération Des Matériaux Réutilisables et Recyclables En Afrique - Un Examen Critique de La Documentation Anglaise," 9; Schenck, Blaauw, and Viljoen, "The Socio-Economic Differences between Landfill and Street Waste Pickers in the Free State Province of South Africa," 545.

## Case studies : the absence of Mbeubeuss, Senegal

This review has dealt so far with the existing literature drawing specifically on waste pickers and their health, but there are of course other studies about waste that seldom focus on waste pickers themselves, and are rather technical analyses of waste management systems in the field of urban planning. Among them, numerous studies focus on one particular country. For instance, the United Nations Environment Program (UNEP) and the United Nations Industrial Development Organization (UNIDO) have produced various country assessments<sup>180</sup>, but exclusively about electronic waste in terms of environmental impact. The human aspect of waste pickers is often set aside in those assessments. Ghana and China are frequently analyzed, because they host the biggest e-waste landfills and receive waste from illegal transboundary shipments<sup>181</sup>. Indeed, some waste dumps in developing countries receive waste coming from other countries, most often illegally. The implication of developed countries which prefer to get rid of their waste and send it to poorer countries instead of treating it has been reported by various scholars, and has therefore also probably influenced their choice of waste dumps around the world for an analysis of the situation. Besides, those reports about e-waste and its environmental health risks represented the first entry point of the author of this present research into the topic, until the researcher realized that extending the research to waste pickers indistinctly of the type of waste they are sorting would better contribute to filling a gap in the existing literature. When it comes to waste in general and not only e-waste, different countries have been analyzed : a research group in Asia analyzed the situation of waste pickers in India, Cambodia and the Philippines. Schenck and al. looked at the case of South African waste pickers, while the World Bank provided a report on occupational and environmental health among waste pickers based on different studies in various countries, including India and Nepal for example<sup>182</sup>. A descriptive study of health problems among waste pickers in Brazil<sup>183</sup> is one of the only studies found that focuses specifically on health issues, but again, it sticks to surveying what are the main issues experienced by workers and does not take into account their possibilities of accessing health care.

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<sup>180</sup> See for example : Ogungbuyi et al., “E-Waste Country Assessment Nigeria”; Schleicher et al., “An Efficient & Effective E-Waste Collection System for Ethiopia.”

<sup>181</sup> Wang et al., “E-Waste in China”; Frandsen, Rasmussen, and Swart, “What a Waste - How Your Computer Causes Health Problems in Ghana”; Asampong et al., “Health Seeking Behaviours among Electronic Waste Workers in Ghana”; ILO, “The Labour, Human Health and Environmental Dimensions of E-Waste Management in China.”

<sup>182</sup> Chintan Environmental Research and Action Group, “inFORMAL-Formal. Creating Opportunities for the Informal Waste Recycling Sector in Asia.”; Schenck, Blaauw, and Viljoen, “The Socio-Economic Differences between Landfill and Street Waste Pickers in the Free State Province of South Africa”; Cointreau, “Occupational and Environmental Health Issues of Solid Waste Management.”

<sup>183</sup> de Araújo and Sato, “A Descriptive Study of Work Ability and Health Problems Among Brazilian Recyclable Waste Pickers.”

Concerning the African continent, « there have been relatively few scholarly studies of solid waste management for Africa's cities »<sup>184</sup>. Samson<sup>185</sup> gathered all the existing documentation on materials recovery in Africa, including waste picking, and examined the methodology of 58 studies. Some of those studies investigated on waste pickers' or waste collectors' working conditions, their role within society, the exclusion of informal workers, while others rather looked at demographic data of this population. This present study falls within the former type by applying a more sociological approach to the issue, but addresses a case study absent from the majority of the literature. Indeed, resources about waste picking in Senegal are surprisingly scarce.

Senegal has one of the highest urbanization rates in Africa, with more than half of the urban population living in the area of Dakar. Waste from the whole region of Dakar ends up in the waste dump of Mbeubeuss, situated in the suburbs of the city. It is one of the largest dump site in Africa, receiving about 475'000 tons of waste each year and hosting about 2'500 informal waste recyclers who work in it<sup>186</sup>, but it has clearly been overlooked in the academic sphere. Mbeubeuss does not seem to be involved in the aforementioned international trade of waste, which could be a potential reason for the absence of interest from international scholars. Very few studies have been published on the situation of waste pickers in Mbeubeuss.

The first one, written by Oumar Cissé on behalf of the African Institute of Urban Management (in French, *Institut Africain de Gestion Urbaine*), dedicates one chapter to the effects of Mbeubeuss on health<sup>187</sup>. It lists all disorders endured by the surrounding population, such as fatigue, headaches, breathing struggles, or dermatological conditions, and even mentions long term diseases such as cancers and low fertility. The author also looks at health issues faced by waste pickers themselves, and finds that respiratory infections are the most common disorder cited by this population. Regarding protective equipment, 55% of waste pickers were wearing gloves, and 46% a mask. Another chapter also reports sample analyses of water around Mbeubeuss, and indicates that 75% of wells are contaminated with lead, cadmium and aluminum, making water unfit for human consumption. Cissé's research is the closest to this present study, even though it only enumerates health disorders without investigating more in detail waste

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<sup>184</sup> Myers, "The Politics and Technologies of Urban Waste," 450.

<sup>185</sup> "La Récupération Des Matériaux Réutilisables et Recyclables En Afrique - Un Examen Critique de La Documentation Anglaise."

<sup>186</sup> Integrated Waste Management in Western Africa (IWWA), "Regional Evaluation of the SWM Situation in Target Countries," 31, 111; Myers, "The Politics and Technologies of Urban Waste," 452.

<sup>187</sup> Cissé, *Les décharges d'ordures en Afrique. Mbeubeuss à Dakar au Sénégal*.

pickers' perceptions. Moreover, the topic of access to health care and social protection is not addressed at all in Cissé's study. Another article conducted an analysis of air and soil samples in the town bordering Mbeubeuss, accompanied with a case-control study of its population, and concluded that inhabitants were facing several disorders including renal function alteration because of the contamination of the air and soil with cadmium and lead<sup>188</sup>. However, no similar study has been undertaken exclusively with the population of waste pickers.

The second book in part analyzing Mbeubeuss focuses exclusively on e-waste and dedicates one chapter to the case of Senegal<sup>189</sup>. In the latter, interviews with e-waste workers highlighted that about 60% of them consider their work as risky, but that about the same percentage did not know about dangerous components of e-waste, evidencing a clear paradox<sup>190</sup>. In addition, a regional analysis of solid waste management, carried out by a European program named Integrated Waste Management in Western Africa, provided data on the urban organization of waste collection and recycling in Senegal, including Mbeubeuss<sup>191</sup>. It mentions briefly the toxic fumes arising from the burning of plastic and the smelting of metals, but without detailing the impacts of those practices on health. Finally, two other authors, Myers and Fredericks, have been writing about the issue of waste in Dakar but rather from a political perspective, addressing the articulation between the state and the community involved in waste collecting and recycling<sup>192</sup>. The main takeaway of Myers' analysis is that effective solutions for solid waste management can only stem from grassroot participatory engagement with waste pickers, by taking their concerns into account. The content of those concerns are however not the main focus of his article, which thus remains remote from the issues dealt with in this present study. Therefore, we can say that health issues faced by waste pickers have not been fully addressed in a comprehensive study, only touched on by Cissé's book.

Consequently, a proper analysis of the issues faced by waste pickers in Mbeubeuss is currently lacking. Indeed, «solid waste data in many cities is largely unreliable and seldom

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<sup>188</sup> Cabral-Ndior et al., "Case-Control Study among Residents of Malika (Diamalaye II) Bordering the Mbeubeuss Waste Dump in Dakar (Senegal): Pb and Cd Impregnation and Renal Function Alteration."

<sup>189</sup> Diop, Thioune, and El Ali, *Les Déchets Électroniques et Informatiques En Afrique*.

<sup>190</sup> Diop, Thioune, and El Ali, 148.

<sup>191</sup> Integrated Waste Management in Western Africa (IWWA), "Regional Evaluation of the SWM Situation in Target Countries."

<sup>192</sup> Myers, "The Politics and Technologies of Urban Waste"; Fredericks, "Disorderly Dakar"; Fredericks, "Wearing the Pants : The Gendered Politics of Trashwork in Senegal's Capital City."

captures informal activities »<sup>193</sup>. Moreover, in light of the ongoing discussions about the possible transformation of Mbeubeuss' site, such an analysis would be of particular relevance, and would enable a better inclusion of waste pickers' needs in those negotiations. Since the hurdles faced by this community have not been properly studied yet, no exact and reliable data on this population can be used and referred to by the organizations trying to defend their interests and integrate them in negotiation processes. Knowing more about their needs and issues in terms of health would thus represent a first step for a larger study tackling the situation of waste pickers in Mbeubeuss.

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<sup>193</sup> UN Habitat, "Solid Waste Management in the World's Cities. Water and Sanitation in the World's Cities 2010.," 11.

## Methodology

### Research method

Before delving into the analysis, we are first going to elaborate on the methodology employed for this research, as well as on the limitations and possible biases encompassed in this study. In order to investigate on waste pickers' health practices and perceptions in Mbeubeuss, researches have taken place directly on the field in Dakar, with interviews conducted in Mbeubeuss itself, as well as interviews with other key actors in Dakar and the towns near Mbeubeuss, Malika and Keur Massar. It has already been stated in the previous chapter that waste pickers in Senegal had been overlooked in academic research. Mbeubeuss is of course not the only existing dump in Senegal, but it turns out to be the largest with a high number of waste pickers working in it<sup>194</sup>, and therefore seems like the most relevant to study. The following analysis is mainly based on qualitative method, through the use of semi-structured recorded interviews carried out during 24 days of fieldwork in Dakar, Senegal. The use of a qualitative method permitted to gain insightful details about waste pickers' concerns and the issues at stake.

The researcher being a foreigner not knowing much about Mbeubeuss before coming to do fieldwork, qualitative method has been chosen to be able to discuss certain topics more in depth with the interviewees during long interviews. Fieldwork gave new information and ideas on matters worth addressing, thus constantly adding to the researcher's knowledge of the field. With this new knowledge, questions asked during long interviews have been adapted on the field in a constant adjustment process. This is what Becker describes as the essence of qualitative method : researchers « allow themselves to become aware of things they had not anticipated, [...] and expect to continually add variables and ideas to their models »<sup>195</sup>. Moreover, since this research deals with waste pickers' own perceptions about health threats related to their work and their use of Senegalese health system, interviews were more appropriate than a survey to let them elaborate on their own thoughts. However, this method had to be adapted for some of the waste pickers interviewed, considering the short amount of time the researcher was able to spend with each of them. Indeed, most waste pickers interviewed were working when approached by the researcher, and therefore only had a very limited timeframe in which they could talk.

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<sup>194</sup> Integrated Waste Management in Western Africa (IWWA), "Regional Evaluation of the SWM Situation in Target Countries," 452.

<sup>195</sup> Becker, "The Epistemology of Qualitative Research.," 3.

Gatekeepers on the field had made very clear from the beginning that waste pickers were in the waste dump for mere survival, and that the presence of a researcher would not be always welcomed. Some of them seemed a bit reluctant to talk to a researcher, others simply showed indifference, while only few of them seemed rather inclined to answer to the questions. Most of them hence gave very short answers. In such a short amount of time, it was really difficult to create a climate of trust between them and the researcher, which further accentuated the brevity of their answers. It is therefore necessary to take into account the vulnerability of this research's target group and the sensitive context the study took place in. The phrasing of the questions had to be carefully thought, since the study enquired about private matters such as health issues and financial capacity to access health care. Not only can those topics be perceived as very private in general, but it could also have been even more uncomfortable to reflect and discuss such issues for such a population who has limited resources and lives in extreme poverty.

Moreover, the fact that most of them did not understand and speak enough French for a conversation was a further constraint. The researcher thus had to rely on the person who was accompanying her in the waste dump to translate their words from Wolof to French, adding another barrier between the interviewee and her. Taking all these elements into account, the shape of the interviews with waste pickers evolved into a more structured form, with questions that could be answered briefly and easily. With the few waste pickers who could speak French and were representatives of the community through their role in the waste pickers' association, as president, spokesperson, or secretary general for instance, a semi-structured interview framework could still been used as originally planned and allowed for longer interviews.

In the end, this research is based on two types of interviews with waste pickers : 21 short structured interviews and 5 long semi-structured interviews. In addition to interviewing directly the community studied in this research, this study also relies on interviews with various stakeholders involved with the situation of waste pickers. For one thing, discussions with four healthcare professionals, either doctors or nurses, allowed us to gain insight on the Senegalese health care system, and more specifically on the health care facilities used by waste pickers, as well as information on health issues concerning waste pickers. Three employees of the state's Solid Waste Management and Coordination Unit (UCG in French) have also been interviewed, two of them working directly in the waste dump and supervising the trucks coming into the landfill, and one being in charge of Mbeubeuss' waste dump management on behalf of the UCG.



As a representative of the state, the latter gave an interesting supplement on another stakeholder's perception about the waste dump's pollution and its related health risks for those working in this space, even though he had few direct contacts with waste pickers. Finally, an interview with the representative of Dakar informal workers on the issue of social protection helped investigate on this matter for informal workers more broadly, and understand the current state of discussions with the state about this issue<sup>196</sup>.

Beside those interviews, various meetings and consultations regarding either waste pickers or informal workers more broadly were attended by the researcher as an observer, following the work of WIEGO's coordinator in Dakar, Adama Soumaré. WIEGO (*Women in Informal Employment: Globalizing and Organizing*) is a global network active in various cities around the world to defend the rights of informal workers for better working conditions and help them organize. In Dakar, WIEGO's coordinator discusses with various stakeholders within the informal sector, whether it be laundresses, street vendors or waste pickers, listens to their concerns and helps them organizing to facilitate discussions with the authorities. Attending those meetings helped understanding the issues at stake for the informal sector in Dakar, and how waste pickers were integrated in broader discussions about the informal sector. Written summaries of different meetings about waste pickers that had taken place in the last couple of months were also consulted.

Besides, the period fieldwork in Dakar has been undertaken for this study coincided with a turbulent time for Bokk Diom, the association of waste pickers. Some internal tensions were going on over the election of the next president. Adama Soumaré played a mediating role in the middle of this conflict in an attempt to help solve the crisis. Therefore, the researcher was able to join him in a few conciliation meetings with key actors of the waste dump, such as two meetings with two elders, who were the most respected among waste pickers and had a sort of particular status. Moreover, Adama Soumaré has been of invaluable help for this research: he has been working and supporting waste pickers for more than two decades, and has been a key informant for this research. In the end, the 35 interviews conducted in total during the fieldwork in Dakar represent the main source of this analysis, in addition to the observed meetings and consultations.

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<sup>196</sup> For a detailed chart of all interviews conducted and key answers, see annex A.

## Limitations and biases related to fieldwork

Like every academic research, this study is not exempt from biases. Therefore, they should be consciously enunciated here. As a female, white and Swiss researcher, the position of the latter in the waste dump greatly influenced the interactions with interviewees. A few other researchers were and still are studying the situation of Mbeubeuss, and officials or representatives of organizations regularly come for a visit in the waste dump. In that sense, waste pickers had already seen visitors in their workplace, and some of them had even talked to researchers already. However, the fact that the interviewer was a white foreigner (a *toubab* as they call white people in Wolof), coming from a high income country, definitely had an impact on waste pickers' perceptions and added a certain distance in how they responded to the questions. Also, the researcher's position as a woman in this mostly man dominated environment had to be handled carefully. For example, she often had to reaffirm her position as a researcher in front of comments about her marital status. Especially since the amount of time spent in the waste dump was short, the researcher is fully aware that she remained an outsider in the waste dump and did not have the opportunity to integrate the community of waste pickers. This distance with waste pickers probably hindered some of them to fully express their thoughts and perceptions when answering the questions. However, the method used for this research being interviews and not participant observation, we will not consider the lack of integration among waste pickers as an issue for this research, and the few longer interviews conducted with some waste pickers allowed to better build a bond of trust and gain sufficient insight.

As already mentioned, some of the interviewees did not understand or speak French, and a translator was therefore required during the interview process. On top of adding another relational barrier between the interviewer and the interviewee, the fact that the former could rely only on the words of the translator limited her understanding of the exact meaning of the words expressed by the interviewee. Indeed, the instant translation was sometimes not fully accurate, in the sense that the translator probably did not use the exact same words the interviewee had employed. There might therefore have been a loss of accuracy in the statements gathered in the waste dump.

Another limitation is that since a visitor cannot go on his own in the waste dump and must always be accompanied for security reasons, a visitor is always very dependent on the person escorting him through the landfill. Mbeubeuss is a hostile environment, in which workers stay for survival. Gaining access to waste pickers was therefore not an easy task. Hence, this

research also strongly relied on what Kaufmann<sup>197</sup> calls *informants*, who gave the interviewer access to the field and provided many information about Mbeubeuss. Informants are very valuable resources, but one needs to be aware that they can in a way adopt a role of *overseer*, trying to show to the researcher « their world as they want [him] to understand it, [and thus] have a great deal of control over the fieldwork process »<sup>198</sup>. For instance, since an informant was escorting the researcher at all times in the waste dump, it also means that the waste pickers interviewed depended on the informant's choices, as he mostly introduced her to his acquaintances. At least, three different waste pickers took the role of informants during the various visits in the waste dump, thus allowing for a greater sample of possible waste pickers to interview. The sample used for this research might thus be in some way biased, in the sense that they were all mainly members of Bokk Diom association and were well integrated and connected within the waste pickers community. It might have been for example that members of Bokk Diom would have been more informed on average than other waste pickers about health risks and would have adopted a safer health behavior. However, those waste pickers were carrying out the same tasks than other waste pickers, and were all working in the same landfill than other waste pickers that have not been interviewed, that is in the same polluted environment. Health risks are the same for every waste picker, no matter if they are part of Bokk Diom or not. We will thus assume that the sample remains valid for this study despite this absence of choice in possible interviewees.

## Analysis method

All the interviews conducted have been audio recorded and transcribed afterwards. Only five persons interviewed did not wish the conversation to be recorded. The recording enabled to create a more informal atmosphere for the discussion by easing the note taking process, facilitating the building of trust between the interviewer and the interviewee. With the exact transcript of long interviews, data has then been coded by themes and key sentences extracted from the texts. Categorizing data into different themes helped to select, separate and sort it in order to ease the analysis. Different categories of themes emerged during the analysis of the data, and prevented from using preconceived categories<sup>199</sup>. Concerning the short interviews with waste pickers, a comparative table between all short answers provided a useful basis to confront different or similar statements and look for a certain trend between answers. There, since the

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<sup>197</sup> "The Informant as Resolute Overseer."

<sup>198</sup> Kaufmann, 251.

<sup>199</sup> Charmaz, "Coding in Grounded Theory Practice," 45–46.

questions asked were always the same and the answers received quite short, the way of evaluating the data rather resembled a quantitative analysis, fitting the collected answers into pre-chosen categories. For example, one of the preconceived category was the presence or absence of protection while working<sup>200</sup>.

The results obtained for this research are really specific to waste pickers of Mbeubeuss and can be generalized only to a certain extent. Indeed, Senegal's health structure and social protection schemes are specific to the country, and clearly influence waste pickers' choices regarding access to health care. Moreover, behaviors and beliefs about health depend much on the culture, but also on how waste pickers are perceived in society, which can vary from one place to another. However, since environmental and occupational health risks related to the activity of waste picking are probably the same in every informal waste dump worldwide, some elements of this analysis could potentially be applied to some extent to other contexts of similar waste dumps in developing countries.

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<sup>200</sup> For an example of questions asked during short interviews, see Annex B. For the comparative table used to compare short answers, see Annex C.

## Waste pickers in Mbeubeuss landfill, Senegal

Now that we have set up the framework of informal work and occupational health issues more specifically for waste pickers, we will now proceed to the analysis of the health situation of waste pickers in Mbeubeuss, Senegal. We will first start with a general description of the waste dump of Mbeubeuss and its organization, before looking at health risks linked to the dump. Perceptions and practices of waste pickers in terms of occupational health will be analyzed. Then, we will address the issue of access to health care by looking at the different options used by waste pickers of Mbeubeuss when ill or injured, before touching on their possibilities of health coverage.

### What is Mbeubeuss and how is it organized ?

Mbeubeuss is an open-air waste dump situated about 20 kilometers away from Dakar's city center and has been in operation since 1968<sup>201</sup>. It measures about 77 hectares and receives waste from the whole region of Dakar. Any type of material is unloaded there, except hospital waste since health care facilities have incinerators. This means that industrial waste with chemical and toxic products is dumped there, as well as domestic waste with organic materials. Waste is collected in the city of Dakar and its suburbs by a state agency, and then transported by truck to Mbeubeuss. The place where trucks unload their waste in Mbeubeuss is called the deck (*plateforme* in French) and is situated at the very end of the site. Before the deck, waste pickers have built small shelters in front of which they sort the waste they have collected at the deck. Once they have sorted one specific kind of material, such as plastic bottles or scrap metal, they sell it to middlemen, which will in turn sell it to recycling companies or to small businesses.

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<sup>201</sup> Urselli, "Dakar Landfill and the Wastepickers, Social Production of Value, Urban Subalternity and Work Ethics."



**Figure 4 : Location map of Mbeubeuss waste dump**

Shelters in Mbeubeuss are separated into three different « neighborhoods »: Gouy-gui, Baol, and Abords. Each area regroups waste pickers coming from a similar region, or dealing with a certain type of waste. For example, many waste pickers in Gouy-gui deal with industrial waste, while the Baolbaol, the waste pickers working in Baol, come for the majority from Diourbel's region, situated east of Dakar. Many waste pickers came from rural areas of Senegal to the city of Dakar hoping to find a job. Others also came from surrounding countries such as Guinea, Gambia or Mali. A waste picker from Baol explains :

« At the moment, many people are rural people who cultivate the land. Winter seasons are not good, you have to move to Dakar. Currently, there is a problem with the price of groundnut »<sup>202</sup>.

The absence of opportunities represents therefore the main reason to start working in waste picking. Lack of means to start another business, unemployment and poverty constrain waste pickers to stay in this sector for the major part of their lives, sometimes their whole lives<sup>203</sup>. An interviewee states :

<sup>202</sup> In French : « Actuellement, il y a beaucoup de gens qui sont des campagnards, ils cultivent la terre. Les hivernages ne sont pas bons, tu es obligé de rallier Dakar. Avec le prix de l'arachide, il y a un problème »

<sup>203</sup> Diop, Thioune, and El Ali, *Les Déchets Électroniques et Informatiques En Afrique*, 148.

« We are earning a living by the sweat of our brow. Sometimes, our whole body hurts. If we could, we would go do something else elsewhere, but we can't afford it, we are stuck here »<sup>204</sup>.

Waste pickers interviewed for this study have worked in Mbeubeuss for 17 years on average. It is interesting to note that the literature has done different assumptions about the amount of time waste pickers work in a waste dump compared to what came out of the interviews in Mbeubeuss. As a matter of fact, Schenck, Blaauw and Viljoen stated that waste pickers usually work in a waste dump only for a few years<sup>205</sup>, whereas the majority of interviewees in Mbeubeuss claimed having been working in Mbeubeuss for about 20 years. The fact that the interviewees spent already a number of years in the waste dump is interesting for this research, since it implies a longer time in which waste pickers could have developed a condition. There is currently no official exact estimation of the number of waste pickers active in Mbeubeuss, but Cissé<sup>206</sup> has identified about 2'450 informal recyclers coming in and out of the waste dump in one day. Among them, men represent a large majority, even if many women and children work as well in Mbeubeuss. Interviews reflect this factual situation, since only three workers were women among interviewed waste pickers.

Waste picking is therefore an activity of survival, with earnings varying from day to day and depending on the type of material collected. An average day of work can provide waste pickers between 1'000 and 25'000 FCFA (between 1,80\$ and 45\$), the latter number being rather an exception. The vast majority of waste pickers live in the towns bordering Mbeubeuss, Malika and Keur Massar, whereas only very few of them live directly in the dump. The latter are most often new waste pickers that have just arrived in the region, have not gathered enough money yet to afford a rent, and hence stay in the dump for a temporary period. Other waste pickers also spend occasionally a night in the dump, for example when they collected an important amount of recyclables and are afraid to get their material stolen over night. In the waste dump, each waste picker has his special « market », that is either a specific material that he will try to collect and sort, or waste coming from a specific place, such as the airport or a hotel. Some waste pickers know truck drivers well, and ask some of them to call them by phone when they are approaching Mbeubeuss, so that they can be the first one near the truck when it is unloaded.

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<sup>204</sup> In French : « Nous gagnons notre vie à la sueur de notre front. Des fois, tout notre corps nous fait mal. Si on pouvait, on irait faire autre chose ailleurs, mais on n'a pas les moyens d'aller faire autre chose, on est cloués ici »

<sup>205</sup> The average time being 6,8 years (Schenck, Blaauw, and Viljoen, "The Socio-Economic Differences between Landfill and Street Waste Pickers in the Free State Province of South Africa," 541.)

<sup>206</sup> *Les décharges d'ordures en Afrique. Mbeubeuss à Dakar au Sénégal*, 173.



**Photo 1 : Trucks coming in and out of Mbeubeuss (©Marine Vasina)**

Waste pickers of Mbeubeuss form a part of the informal sector in the region of Dakar, and, like many other informal workers, face a clear lack of recognition by the authorities. They feel left out of essential decisions, and most importantly, regret the lack of acknowledgment by the authorities of their contribution to the city. A waste picker sums up the situation as follows :

« We are waste pickers, we are citizens, but the state has not made a single effort for waste pickers. We work so hard though, from dawn to dusk, every day.

Thanks to waste pickers, waste is not coming out of Mbeubeuss »<sup>207</sup>.

Since 1995, waste pickers of Mbeubeuss have created an association of waste pickers called Bokk Diom to unite their voices vis-à-vis the authorities and better organize work at the level of the waste dump<sup>208</sup>. The association counts about 350 members, which is still very little compared to the large numbers of waste pickers active in Mbeubeuss. Participating to the local economy and more specifically to waste management at the local level is one of waste pickers' main claims.

The state rather acknowledged the importance of the waste dump itself rather than the status of waste pickers, and now considers Mbeubeuss with interest for the recycling of certain materials. Projects of transforming the dump into a formal recycling plant are currently being discussed in partnership with the World Bank. Those discussions seem to worry waste pickers,

<sup>207</sup> In French : « *Nous sommes des récupérateurs, nous sommes des citoyens, mais l'Etat n'a fait aucun effort sur les récupérateurs. Pourtant, on se tue du matin au soir, chaque jour. Grâce aux récupérateurs, les déchets ne sortent pas de Mbeubeuss* »

<sup>208</sup> Global Alliance of Waste Pickers, "Association Bokk Diom Des Récupérateurs et Recycleurs de Mbeubeuss."



afraid that the new project will not integrate fully all individuals relying on the existence of the waste dump for a living. A state agency, the Solid Waste Management and Coordination Unit (in French, *l'Unité de Coordination et de Gestion des Déchets Solides*, abbreviated UCG), coordinates waste management at the national level. An entity of this agency is active in Mbeubeuss, with several UCG employees controlling the flow of trucks entering the dump and the legality of the waste unloaded on the platform. The agency is a branch of the Ministry of Environment, which fixes the norms in terms of waste collection<sup>209</sup>. Discussions take place regularly between waste pickers, the UCG and the municipality of Malika to deal with matters of contention. An employee of the UCG gave the example of waste pickers burning tires and endangering the whole space of Mbeubeuss as a recurrent topic of discussion, or of the project to install a water tank in the dump in case of an uncontrolled spreading fire.

Not only are negotiations with the authorities difficult, but waste pickers also face strong opposition by the inhabitants of Malika and Keur Massar. Inhabitants complain about the dust and smoke hovering above both towns, arguing that their children have become asthmatic because of that. Malika's representative of the environmental commission stated that some inhabitants working with land were now trying to sell their parcel and move out because the contamination of water and soil made it unusable. A « Collective for a definitive shutdown of Mbeubeuss » even emerged to advocate for a transformation of the site into an official recycling plant. Moreover, waste pickers suffer from bad reputation among the population, who considers them as thieves and criminals. They even gave them a nickname in Wolof, *Boudiou-men*, that has a pejorative sense. WIEGO's coordinator admits :

« There is a lack of communication between populations and waste pickers »<sup>210</sup>.

However, part of this population also benefits in some way from the existence of the waste dump, since some of them also go themselves on site to collect certain items for personal use<sup>211</sup>. Moreover, the situation started to evolve since many waste pickers settled in Malika and Keur Massar. Indeed, inhabitants got better opportunities to interact with this particular population and modify their negative perceptions about waste pickers.

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<sup>209</sup> Diop, Thioune, and El Ali, *Les Déchets Électroniques et Informatiques En Afrique*, 125.

<sup>210</sup> In French : « *Il y a un déficit de communication entre les populations et les récupérateurs* »

<sup>211</sup> An interviewee gave the example of women collecting hair locks and braids for their own hair for instance.

## Occupational health risks : perceptions and practices

When asked what type of health issues they are facing, interviewed waste pickers unanimously agreed that the work they undertake is dangerous and risky, but more often referred to direct risks of injuries with trucks or glass cuts rather than to the danger of environmental pollution for their health. Several workers even showed to the researcher their legs scarred with cuts from glass bottles and other sharp objects present in waste, as a proof that their work was risky. Others explained that accidents with trucks are frequent, and complained that truck drivers often let their inexperienced apprentice drive the truck and unload the waste in the dump, leading to a higher frequency of accidents. The president of Bokk Diom's association stated that two waste pickers had already died from being trapped by the trucks. Poor working conditions in terms of accidents and safety were therefore mentioned by 57% of waste pickers, whereas the listing of diseases was less obvious. As one of the waste picker frames it :

« Before health comes security »<sup>212</sup>.

After occupational injuries and accidents, a common health issue put forward by 48% of interviewed waste pickers are back pains, or body pains in general, and fatigue, because of the physical tasks required for this work and of the stooped position adopted to collect waste. 29%



**Photo 2 : Smoke hovering above Mbeubeuss (©Marine Vasina)**

mentioned the perpetual dust and smoke present in the waste dump. The latter bothers them in their activities, and gives them breathing difficulties. In Mbeubeuss, two types of smoke can be observed. The first one is black and very thick, and comes from a side of the dump where tires are being burnt. Numerous waste pickers complained about those activities, supposedly forbidden. The second type of

smoke is white and thinner, and hovers over the waste dump constantly like a veil of pollution. It is rather created by the decomposition of waste. Surprisingly, even if the literature often mentions skin diseases as a common disorder experienced by waste pickers, interviewees never cited skin

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<sup>212</sup> In French : « *Avant la santé, il y a la sécurité.* »

diseases as a health issue they were facing<sup>213</sup>. Another disorder cited by waste pickers is diarrhea, due to food and water consumption directly in the dump.

« It is due to what we have eaten in the dump. For example, waste coming from the airport or from luxurious hotels comes here, and everybody eats it, even me, I eat it »<sup>214</sup>.

Health care professionals confirmed the occurrence of those aforementioned health issues among waste pickers, but also among the surrounding population. A healthcare assistant at Keur Massar health center admitted treating numerous burns and injuries among waste pickers. The nurse of Malika health post produced some statistics about the most common pathologies observed during his consultations. The results are valid for the whole population of Malika and not only for waste pickers, but indicate nevertheless that acute respiratory infections (ARI) are the first condition treated at the health post (18% of treated pathologies), whereas in other municipalities further from Mbeubeuss, ARI are not as common. The nurse also cited gastroenteritis and dermatosis as common diseases observed in his medical office. The head doctor of Keur Massar health center confirmed the high prevalence of ARI in his facility as well.

« No detailed study has been conducted yet on the link between this surge of ARI and Mbeubeuss' waste dump, but we have witnessed a clear increase of ARI among patients, in comparison with other districts »<sup>215</sup>.

The head doctor declared being very concerned by the impact of Mbeubeuss on health and has already tried to organize coordination meetings with different health actors in the region to raise the attention of the authorities on Mbeubeuss.

Nevertheless, even if the majority of waste pickers listed similar health issues, some of them also claimed that they personally are never ill, or even that waste pickers in general are immune. They defend the fact that they have been working for several years in the waste dump but have never experienced serious health issues.

« Of course sometimes there are accidents, but not me. There are people getting injured or dying here, but not me »<sup>216</sup>.

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<sup>213</sup> Only one waste picker mentioned toxic chemicals touching his skin.

<sup>214</sup> In French : « C'est dû à ce qu'on a mangé au niveau de la décharge. Par exemple, les résidus de l'aéroport ou des grands hôtels, ça vient chez nous, tout le monde y mange, même moi je mange ça »

<sup>215</sup> In French : « Il n'y a pas encore eu d'étude détaillée sur le lien entre les IRA et la décharge de Mbeubeuss, mais nous avons observé une clair augmentation d'IRA parmi nos patients en comparaison avec les autres districts »

<sup>216</sup> In French : « Bien sûr parfois il y a des accidents, mais pas moi. Il y a des gens qui se blessent ou qui meurent ici, mais pas moi »

« I am immune, I am not sick. When microbes see me, they run ! (*laughs*) Of course sometimes people get sick, but fortunately I didn't get ill, with the support of God. But I know other people have problems »<sup>217</sup>.

Bokk Diom's president explained that waste pickers are reluctant to admit that they are ill, especially when they have respiratory issues, because they fear to be perceived as having tuberculosis. Hence, several waste pickers, when asked what health issues they were facing, first claimed that they were never sick. Only when the interviewer insisted by framing the question differently through the use of a hypothetical question (« if sometimes you are sick,... »), did they concede listing recurring disorders faced by waste pickers.

Interestingly, several interviewees mentioned the fact that when a disease outbreak such as cholera hits the region of Dakar, workers in the waste dump are usually not impacted. Similarly, a healthcare assistant admitted that random tests ran among the population and waste pickers showed that no case of tuberculosis had been found among waste pickers, whereas several cases had been detected within the surrounding population. This situation reinforces the belief of certain waste pickers that they are protected in some way by God and therefore do not face many health risks.

« Waste pickers that are here in the waste dump, they have been protected by the greater Gods. If you hear someone saying that this waste picker is ill, it is rare that you will hear that word. Because God protects us »<sup>218</sup>.

The influence of God and religion on waste pickers' situation came back on a recurring basis during interviews. As a matter of fact, waste pickers seem to accept their fate as a decision of God, and rely on God for the situation to improve, be it for health disorders or business opportunities.

Another possible explanation for this lack of consideration for health issues could be the nature of those diseases per se. As we have seen in the literature, a special feature of environmental risks is that they impact health on the long-term, and can lead to serious diseases such as cancers, which can take years to appear. It is thus all the more difficult for waste pickers to be aware of the risks in the waste dump, since some of them have been working for years in this environment without suffering from any severe condition. However, waste pickers

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<sup>217</sup> In French : « *Je suis immunisé, je ne suis pas malade. Quand les microbes me voient, ils courent (rires) ! Oui, parfois des gens sont malades, mais moi j'ai eu la chance de ne pas être malade, avec l'appui de Dieu. Mais je sais que d'autres ont eu des problèmes* »

<sup>218</sup> In French : « *Les récupérateurs qui sont là, ils ont été protégés par les grands Dieux. Si on te dit, lui il est malade, c'est rare que tu l'entendes ce mot là. Parce que c'est Dieu qui nous protège* »

mentioned unexpected deaths of other waste pickers as a recurring element, one of them being the former president of Bokk Diom in 2017. WIEGO's coordinator justifies waste pickers' lack of awareness by the latent status of those diseases :

« One day when it appears, they say it's a sudden death. But in fact, maybe the disease was already there, eating the person away without her noticing it »<sup>219</sup>.

Perceptions of risks caused by waste picking thus seem to be incomplete, and confined to direct health issues experienced on a day-to-day basis. Therefore, even if waste pickers consider their activity as dangerous, it does not seem to go hand in hand with greater caution in terms of protective equipment. Indeed, only 29% admitted wearing gloves when working, and none claimed to wear a mask. 42% even said they wore no protective equipment at all. The main reason they put forward is that they do not need it, that they are used to work without any protection and that it disturbs them in their activities. One of them claimed that since the UCG controls entering flows of waste in Mbeubeuss, dangerous waste that should not be dumped there does not even enter Mbeubeuss. Another one affirmed that



**Photo 3 : Waste pickers wearing flip flops are common in Mbeubeuss (©Marine Vasina)**

the fact that he does not wear gloves does not mean he is careless about his health, since he disinfects his hands every time he goes home after work. Some waste pickers wear used gloves when they happen to find a pair amidst the waste, but otherwise, they claim that protective equipment is unaffordable, unless a charity or the government would provide them with such items. However, WIEGO's coordinator raised the point that a state program had provisioned waste pickers with boots and gloves in the past but that the stock had remained unused. Through direct observations in the waste dump, it appeared that sturdy shoes, boots, or shoes wrapped with duct tape were the most commonly used protective item, even though others also

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<sup>219</sup> In French : « Un beau jour quand ça se déclare, on dit que c'est une mort subite. Mais en fait c'était peut-être une maladie qui était déjà là et qui ronge la personne sans qu'elle s'en rende compte »

sometimes wore flip-flops with socks. In contrast, almost none of the waste pickers were wearing a mask, and only a few of them draped a piece of cloth or turban around their head to protect their nose and mouth. According to waste pickers, the only reason that will lead a waste picker to wear a mask is to avoid being recognized by relatives and acquaintances in the dump, since some of them keep their work as a shameful secret by fear of being misjudged. Wearing a mask is also perceived as a signal of disgust and rejection towards waste pickers, especially if it is worn by a foreigner in the waste dump :

« If you go there with a mask, waste pickers are going to hate you. They will believe that you, over there, think that we are sick. They will say : this toubab (*white man*) over there, he thinks we are insane »<sup>220</sup>.



**Photo 4 : Only a few waste pickers wear gloves when working. Here, a waste picker sorting aluminum (©Marine Vasina)**

In comparison, employees of UCG are better equipped with protective material. They actually have an obligation to wear protective items, and receive new equipment every trimester, according to UCG's coordinator in Mbeubeuss. This situation shows a clear divide between the formal sector, more particularly civil servants, and informal workers. It is interesting to note that the state imposed the wearing of protective equipment for its employees, but that the health of waste pickers does not seem to be a concern to them. The interview with the UCG's coordinator of Mbeubeuss confirmed an obvious lack of consideration for this issue. For instance, he put

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<sup>220</sup> In French : « Si tu vas là bas avec un masque, les récupérateurs vont te haïr. Ils vont croire que toi là, tu penses que nous sommes des malades. Ils vont dire ce toubab là, il nous prend pour des fous »



forward the resettlement of some waste pickers' activities to another part of the dump as an action to decrease health risks, so that the smoke from the burnt waste would not reach the town of Malika. Even though this action could indeed be beneficial to the population of Malika, it has no impact on the health of waste pickers. Interestingly, a waste picker regretted the lack of awareness raising from the government towards waste pickers, and linked it with their absence of integration within the official economy :

« If the government would sensitize us by telling us 'you are workers, at least try, with the small amount you're making, to buy boots, masks, because risks in your job are those and these', then maybe waste pickers would become aware »<sup>221</sup>.

In the end, statements made by waste pickers indicate that they are not fully aware of the possible risks involved with the activity of waste picking, even if many of them referred to cuts and heavy smoke as two major issues impacting their health. This dissociation between protection and acknowledgment of health issues seems to be especially significant for latent health effects related to pollution. Indeed, wearing gloves or sturdy shoes to prevent injuries appears to be more common than wearing a mask to avoid respiratory disorders. In any case, this general absence of protection indicates either that preserving their own health is not a priority for waste pickers, or that the risks are not deemed severe enough to wear a protection. Besides, the absence of choice and the necessity to work in the dump to gather money for their everyday needs clearly comes as a priority over health concerns.

« I know there are a lot of risks, inhaling bad smells, dust, smoke, accidents... But it doesn't keep me from working there, because since it is my sole livelihood, I have to stay there »<sup>222</sup>.

## **Access to health care : challenges and wished improvements**

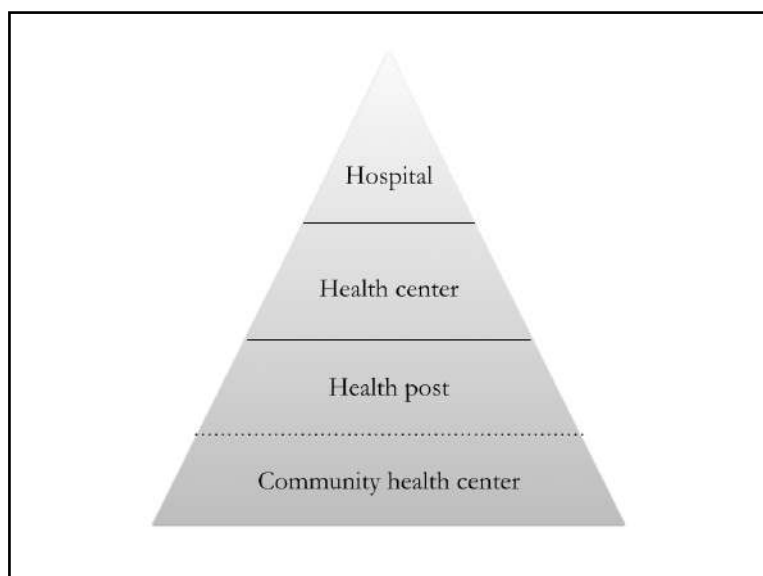
Addressing health issues faced by waste pickers admittedly requires to look at perceptions and attitudes regarding health conditions, but as evidenced in the chapter about OHS, other factors also influence a worker's health, notably the possibilities of accessing health care. Public health care facilities in Senegal are divided in a pyramidal structure (see figure below). There are 20 hospitals in Senegal, situated at the top of the pyramid. The country is divided in medical

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<sup>221</sup> In French : « Si le gouvernement nous sensibilisait en nous disant que 'vous, vous êtes des travailleurs, essayez avec le minimum que vous gagnez, vous achetez des bottes, des masques, parce que les risques du métiers sont ceci et cela', peut-être il y a des récupérateurs qui seraient conscients »

<sup>222</sup> In French : « Je sais qu'il y a beaucoup de risques, le fait de respirer les mauvaises odeurs, la poussière, la fumée, les accidents... Mais ça n'empêche pas d'y travailler, car comme c'est mon gagne-pain, on est obligés d'y rester »

regions, in turn divided in 69 sanitary districts. Every district counts at least one health center (in French, *centre de santé*). Health centers can perform some surgeries and obstetric care, and have a hospitalization capacity of about 20 to 30 beds. Health centers oversee several health posts in each district. Only nurses work at the level of health posts (in French, *poste de santé*). The head nurse has to live in the building of the health post. Health posts provide consultations and vaccinations, but no bed and no surgery. At the bottom of the pyramid, community health centers (in French, *case de santé communautaire*) are a bit aside of the whole structure, since they do not employ any health care professional but only community health workers. They are set up only in case of accessibility issues to a health post in terms of distance, or if a health post handles too many patients. They perform above all preventive and promotional activities. In parallel, private structures corresponding more or less to the public pyramidal scheme are also operational, but with costs more elevated for the patient<sup>223</sup>.



**Figure 5 : The pyramidal structure of health care facilities in Senegal**

Public health care facilities located close to the waste dump of Mbeubeuss consist in a health center in Keur Massar, a health post in Malika, less than 3 kilometers away from Mbeubeuss, and a community health center in the waste dump itself near the entrance. The community health center has been built on a piece of land donated to waste pickers by the United Nations Development Program (UNDP). Originally, it had been created specifically for waste pickers, to give them an easier access to health care. But gradually, the community health center started being used as well by the nearby population of Malika, which also benefits from

<sup>223</sup> Ministère de la Santé et de la Prévention, “Plan National de Développement Sanitaire (PNDS) 2009-2018,” 14; Touré, “L’accès Aux Soins de Santé Au Sénégal: Étude Descriptive et Explorative,” 17.



the installation. A nurse assistant that formerly worked in the community health center even affirms that the latter is nowadays treating more inhabitants of the municipality than waste pickers. The center is run by five volunteers trained by the Red Cross, but who are not health care professionals. Among them, one runs the pharmacy of the center, and two matrons (unofficial midwives) perform child deliveries. According to the pyramidal structure, the community health center is only allowed to provide primary care, for example bandages for small wounds, care for fever and diarrhea, or for simple pneumonia. Tests for malaria and tetanus immunization can also be run in this center. The pharmacy available at the center is extremely basic. As soon as the wound or the health issue requires further treatment, the patient is referred to the health post in Malika, or to the health center in Keur Massar if it requires surgery and an observation period. However, a nurse from Malika's health post complained that waste pickers do not always respect this hierarchy between health structures and stay at the community health center level to receive care they should seek at a higher level. Besides, child deliveries are issued in this community health center by the matrons, even though it is legally not permitted in such a health care facility.

When asked where they seek treatment in case of injury or illness, 67% of waste pickers responded that they go to the community health center. The others mentioned Keur Massar health center, the hospital, or even referred to the pyramidal structure, indicating that the facility they went to depended on the gravity of the health condition. On average, waste pickers seemed well aware of the different possibilities to access care around Mbeubeuss. A few stressed that they resort to a medical facility only if they have no other choice. One even argued that a sickness will go away on its own, just by taking medicines that she buys at the pharmacy. The use of traditional medicine also competes with the resort to official health care facilities. Healers can be found among waste pickers in the waste dump. Traditional medicine seems to be resorted to for less severe disorders, because it is way less expensive than official treatments. Bokk Diom's president declares about waste pickers :

« They sometimes think that it is pointless to go to the dispensary. They think that if they waste one day of work, they have lost. So in the morning at work, they will bring a bottle with them, with traditional medicine in it »<sup>224</sup>.

A waste picker also explained that some disorders are not real diseases but a bad spell, and that it is important to differentiate between the two. For bad spells, there is no need to go to a health center and it is best to use traditional medicine. However, only 29% of interviewed waste pickers

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<sup>224</sup> In French : « Ils pensent parfois que ça ne sert à rien d'aller au dispensaire. Ils pensent que si ils perdent une journée, ils ont perdu. Donc le matin au travail, ils vont avoir une bouteille avec eux, dans laquelle on a mis de la médecine traditionnelle »

admitted using traditional medicine. Some of them said on the contrary that they do not even believe in it.

The quality of the community health center on the site of Mbeubeuss was a recurring point of discussion during interviews. Indeed, several waste pickers stressed that the community health center is not fully operating. They complained that the volunteers in the community health center are not qualified and do not have enough resources to perform adequate care. Some mentioned the lack of medicines, others the limitation of treatments to simple care or the absence of a qualified nurse.

« The community health center doesn't have the necessary equipment, it performs only primary care. I go to other facilities that have more resources »<sup>225</sup>.

The structure is currently not financed by any entity : the municipality of Malika had supplied it with medicines in the past, but not anymore. The little revenues generated by the consultations and the sale of medicines cover the costs for the center's electricity and water. If some money is left at the end of the month, it goes to the volunteers working in the center. One of the veterans of the waste dump, a waste picker that successfully started a business of plastics recycling, has often been cited as a generous contributor to the community health center who supplies it with medicines. Numerous waste pickers also expressed gratitude towards him because he often finances the cost of treatment for those who cannot afford it. This elder therefore provides a sort of informal 'safety net' for waste pickers to enable them to access care.

Several waste pickers expressed the desire to have a qualified nurse working at the community health center, but legally, nurses are not allowed to work at this level of the pyramidal structure. A community health center should exclusively hire trained volunteers, but no health professional. However, a nurse had been working illegally in the community health center of Mbeubeuss for numerous years and was very much appreciated by waste pickers. He then left to open a private practice right across the waste dump, because Bokk Diom's association could not afford to pay him a salary in the community health center. Waste pickers noted that at the time when this nurse was working in the community health center, the latter was functioning well and received many visits, but not anymore.

« The community health center currently doesn't represent anything. When Camara (*the nurse*) was here, it was working flawlessly. So there should be a qualified doctor »<sup>226</sup>.

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<sup>225</sup> In French : « La case de santé n'a pas les appareils nécessaires, elle ne fait que les soins de santé primaires. Je pars vers d'autres structures qui ont les moyens »

This nurse had gained the trust of numerous waste pickers, leading some of them to follow him to his private practice when he left and abandon the community health center. When asked which facility they were using, three answered that they were going to this nurse rather than to the community health center. The different interviews with waste pickers highlighted the absence of trust in the new volunteers of the center, preventing them from considering the community health center as a valuable structure. A few of them expressed the wish to see this nurse come back to the community health center.

« Technically, he would not be allowed to be in this community health center. But the nurse that was there before, he belongs there »<sup>227</sup>.

Besides this lack of trust in one of the available health care structures, the main obstacle to access health care for waste pickers seems to be the cost of treatment. Most of them admitted that the cost of a consultation is quite cheap : a consultation costs 300 FCFA (0,50\$) at the community health center and 500 FCFA (0,90\$) at both Malika health post and Keur Massar health center. However, the main issue comes with the additional medical analyses or prescriptions for medicines that the patient needs to do or purchase as an extra cost to the consultation. Those additional costs become for the majority of waste pickers unaffordable. An analysis of health care access in Senegal confirmed that the high price of medicines prevents low incomes to access basic medicines. On average, a prescription costs between 1000 and 2000 FCFA, i.e. between 1,80\$ and 3,60\$<sup>228</sup>. A common practice in the waste dump is to ask other waste pickers to contribute financially to those costs in cases in which a waste picker cannot afford a treatment. As a matter of fact, a strong sense of belonging to a same community of waste pickers emerged in several interviews, highlighted by this tradition of solidarity. However, not all waste pickers seem to adhere to this principle of charity.

« If I don't have any money, I will try to manage on my own little by little to gather enough to get cured, because I don't dare going to people to hold out my hand and ask for help »<sup>229</sup>.

Some of them admitted that they will not go to the hospital or a health center if they do not have sufficient funds. The financial cost to access treatment therefore seems to represent a major barrier for waste pickers.

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<sup>226</sup> In French : « *La case de santé, actuellement, ne représente rien. Quand Camara (l'infirmier) était ici, ça marchait à merveille. Donc il faudrait un médecin qualifié* »

<sup>227</sup> In French : « *Techniquement, il n'aurait pas le droit d'être dans la case de santé. Mais l'infirmier qui était là bas, lui il a sa place là bas. Sa place était là bas* »

<sup>228</sup> Touré, "L'accès Aux Soins de Santé Au Sénégal: Étude Descriptive et Explorative," 44.

<sup>229</sup> In French : « *Si je n'ai pas d'argent, je vais essayer de me débrouiller petit à petit pour avoir de quoi me soigner, car je n'ose pas aller vers les gens pour leur tendre la main et demander de l'aide* »

Another issue put forward by waste pickers is the lack of time available to go to the doctor.

« Every day you are here, earning an income for your family. You don't have time to go to the doctor »<sup>230</sup>.

Unless the health issue is really severe, numerous waste pickers will therefore continue to keep working until the pain becomes unbearable, or until the issue disappears on its own. Besides, a volunteer at the community health center regretted the possibility to treat waste pickers properly.

« When a waste picker gets injured and comes for care, I advise him to wear boots, and tell him to rest a bit before coming back for a second check up, but usually, they never come back »<sup>231</sup>.

A few waste pickers expressed the desire to receive free medical consultations directly in the waste dump, where doctors would go themselves to Mbeubeuss and meet waste pickers on site. A volunteer at the community health center agreed with this idea, and emphasized that a free consultation in the waste dump could as well better inform waste pickers about the existence of the center, since many of them devalue its quality. However, WIEGO's coordinator tempered that a medical consultation directly in the waste dump would be quite difficult to implement due to practical reasons and the harsh environment. The lack of job security, distinctive of informal work, therefore has a clear impact on the possibilities for waste pickers to access care, and takes back in the background other matters than the priority of earning a living. Instead of improving their working conditions to be able to go to existing health structures, the solution put forward by waste pickers show their willingness to see health structures come as close as possible towards them, implicitly implying that their own situation will never allow them to benefit properly from existing schemes of health care.

Another point that could have been a limit for a proper access to health care and that has been raised in the study about health care in Senegal<sup>232</sup> is the possible bad behavior of doctors towards patients, such as intolerance or rudeness. However, this does not seem to be an issue in that case. Even if the rejection of waste pickers by the surrounding population has been highlighted several times, none of the waste pickers blamed doctors for a lack of consideration towards them. On another hand, health professionals admitted that it was difficult to know which of their patients were waste pickers, because they do not wear the same outfit in the waste

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<sup>230</sup> In French : « *Chaque jour, tu es là, à gagner de l'argent pour ta famille. Tu n'as pas le temps pour aller chez le médecin* »

<sup>231</sup> In French : « *Lorsqu'un récupérateur est blessé et vient se soigner chez nous, je lui conseille de porter des bottes et de se reposer un peu avant de revenir pour un deuxième contrôle, mais généralement, ils ne reviennent jamais* »

<sup>232</sup> Touré, "L'accès Aux Soins de Santé Au Sénégal: Étude Descriptive et Explorative," 42.

dump than when they come for a consultation. They also do not expressly tell them their profession, and sometimes even invent one out of shame. A nurse still complained that waste pickers are a difficult population to approach and that it is not always easy to discuss with them. Only one waste picker claimed that doctors would neglect them sometimes, not because of their status of waste picker but rather because they are poor.

« If they know that this guy does not have a lot of money, they will neglect him, even in big hospitals. But if someone is somewhat rich, he gets everything. When you have money, you are respected »<sup>233</sup>.

In an attempt to overcome those cited barriers, an alternative to official health care structures has already been tried out by Enda, a non-profit organization that helped waste pickers of Mbeubeuss during a number of years. A few waste pickers had received a first aid training in order to become a sort of reference point in case of a health emergency. They had been trained to provide primary care to waste pickers, and even supply them with medicines when possible. One of the trained waste pickers recognized the value of this experience, but more for himself than to help others. This solution had also already been put forward in the literature about informal workers. Indeed, Forastieri suggested in 1999 already to train members of the informal sector on preventive care and create jobs within this field for the informal workers themselves<sup>234</sup>. The project in Mbeubeuss has however not been maintained for a matter of cost. Indeed, waste pickers needed to take some time off the waste dump to receive the training, meaning they were deprived of financial resources for the time of the training. The organization therefore had to give them a financial compensation, hindering the project to develop on a bigger scale.

As discussed in the chapter about OHS, the literature has shown that access to health care services is one of the main factors of influence on a worker's health, the latter being also mediated by social factors such as poor income and inequality. The vulnerability of a worker in terms of health thus also depends on the context and not only on the presence or absence of health disorders. The difficulty to trust health workers at the community health center in Mbeubeuss, as well as the unaffordability of some treatments and the lack of time to access care therefore represent important barriers for quality health care, and need improvements if one wants to tackle the issue of waste pickers' health more globally. The study addressing health care

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<sup>233</sup> In French : « *S'ils savent que ce gars là n'a pas beaucoup d'argent, on te néglige, même dans les grands hôpitaux. Mais si quelqu'un est un peu riche, on lui fait tout. Quand tu as de l'argent, on te respecte* »

<sup>234</sup> Forastieri, "Improvement of Working Conditions and Environment in the Informal Sector through Safety and Health Measures," 14.

access in Senegal highlighted the fact that both high prices of health care and false perceptions about a disease's gravity result in limitations in the use of health care facilities<sup>235</sup>. In the case of Mbeubeuss waste pickers, this assertion seems to be correct, since many waste pickers first claimed that they were not sick, but admitted at the same time that they avoided resorting to health care facilities because of the cost.

## **Health coverage : from the government's ideal to reality**

When tackling the issue of access to health care for a vulnerable population like waste pickers, it is also necessary to address their possibilities in terms of social health protection. Adequate social protection schemes can relieve the pressure of financial cost of treatments for lower income populations, but are still sorely lacking for the informal sector. Senegal is no exception : social protection schemes do exist, but the informal sector is still left out of the system. Indeed, the main model for social protection for workers is directly linked to the salary and therefore only valid for formal activities. For instance, in 2009, only 20% of the population in Senegal was benefitting from a health coverage<sup>236</sup>. The latter comprises different elements : a mandatory health insurance for public servants and employees of the formal sector, different subsidy and exemption programs to support vulnerable populations, and alternative social protection networks for those that are not covered by the formal protection system, namely collective health insurances<sup>237</sup>. Subsidy programs encompass free care for children between 0 and 5 as well as for seniors older than 60 years old (through a plan called « Sesame Plan »)<sup>238</sup>. Financing the demand for health care is one of the government's priorities : in that respect, reinforcing health coverage, especially for vulnerable populations, appears as one of the eleven strategic orientations of the National Plan for Sanitary Development 2009-2018<sup>239</sup>. A milestone in governmental health policy occurred in 2013, when it launched an initiative for universal health coverage (UHC), with the original aim to see at least 75% of Senegalese population covered by 2017 and every individual covered by 2022. For this purpose, an Agency for Universal Health Coverage, under the supervision of the Ministry of Health, was created in 2015, and

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<sup>235</sup> Touré, "L'accès Aux Soins de Santé Au Sénégal: Étude Descriptive et Exploratrice," 45.

<sup>236</sup> Touré, 22, 29.

<sup>237</sup> Ministère de la Santé et de l'Action sociale, "Plan Stratégique de Développement de La Couverture Maladie Universelle Au Sénégal 2013-2017."

<sup>238</sup> Agence de la Couverture Maladie Universelle, "Politiques de Gratuité."

<sup>239</sup> Ministère de la Santé et de la Prévention, "Plan National de Développement Sanitaire (PNDS) 2009-2018."

followed the credo *at least one collective health insurance per local community*<sup>240</sup>. Indeed, collective health insurances are thought as the best way to reach rural and informal populations, who do not qualify for compulsory health insurance provided through formal employment contracts.

Collective health insurances (in French, *mutuelles de santé*) are one of the possibilities for enhancing social protection. They represent a non-profit insurance system with a collective share of the costs : they pool resources from different contributors, who pay a yearly contribution to be able to benefit from it. With this system, the majority of the costs for a treatment are covered by the insurance, and only a small part must still be paid by the patient. An agreement is signed with a health care structure, or several, meaning that the patient needs to use this facility in order to benefit from the insurance<sup>241</sup>. Every collective health insurance is different and encompasses a predefined package of care covered by the insurance. For instance, if the contribution to a collective health insurance is quite cheap, the package might not include surgery but only primary care. In 2016, already 660 collective health insurances had been implemented throughout the country<sup>242</sup>. Collective health insurances implemented through the UHC state program are subsidized by the state : the yearly contribution is 7'000 FCFA (12,60\$), but the state covers 50% of it, i.e. 3'500 FCFA. Then, the state bears 80% of the costs for a treatment in a public structure, and leaves 20% for the patient to pay<sup>243</sup>. The UHC program is connected to another program targeting families, the National Program of Family Security Grants (in French, *Programme National de Bourses de Sécurité Familiale*) : every member of families enrolled in this program can also benefit from a full subsidy of the contribution for a collective health insurance instead of the usual 50%<sup>244</sup>. However, the state seems aware that collective health insurances are not the best solution for poorer populations because of the cost. In its National Plan for Sanitary Development, it emphasizes that « in many cases, what prevents from paying a consultation ticket and other medical services also hinders contributions, namely to be a member of a collective health insurance »<sup>245</sup>. At the end of 2017, the envisaged target had not been reached, because UHC still remains misunderstood by the population<sup>246</sup>. Collective health insurances still

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<sup>240</sup> Agence de la Couverture Maladie Universelle, “La CMU À Travers Les Mutuelles de Santé”; Haudeville, “La microassurance santé dans le processus de construction d’un système de protection sociale de base,” 35.

<sup>241</sup> Agreements can also be signed with pharmacies.

<sup>242</sup> La Vie Sénégalaise, “Couverture Maladie Universelle : 660 Mutuelles de Santé Mises En Place Au Sénégal.”

<sup>243</sup> Agence de la Couverture Maladie Universelle, “Comment Adhérer ?”

<sup>244</sup> Ministère de la Santé et de l’Action sociale, “Aide Mémoire Sur La Couverture Maladie Universelle,” 1.

<sup>245</sup> (own translation) Ministère de la Santé et de la Prévention, “Plan National de Développement Sanitaire (PNDS) 2009-2018,” 49.

<sup>246</sup> Agence de la Couverture Maladie Universelle, “Adhésion Des Populations Aux Mutuelles de Santé : La CMU Décide de Passer Par Les Autorités Religieuses.”

remain quite small for now, with about 300 to 400 members each, and face recurring issues of funding<sup>247</sup>.

Hence, the fact that the informal sector is not embedded in social protection schemes is indeed an issue in Senegal, but it is also necessary for this population to be informed about the possible options they have regarding social protection. An ILO report mentioned a lack of awareness by vulnerable populations about the existence of social assistance programs targeting the poor and vulnerable<sup>248</sup>. This claim has been verified on the field in Mbeubeuss. Indeed, when asked if they knew about the UHC program launched by the government and more specifically what a collective health insurance was, half of them did not know what the interviewer was referring to. Among the ones who had heard of collective health insurance, only one suggested the implementation of a collective health insurance as a possible solution regarding health issues, while some complained about not being integrated, as informal workers, within any social protection scheme.

« Yes, a collective health insurance would be helpful. This charity system that is currently taking place in the dump, it is never enough, so even if this system is good, it is not sufficient »<sup>249</sup>.

A collective health insurance has already been set up for a year in the municipality of Malika for its inhabitants (among which are also waste pickers), following the UHC program of the state. The insurance has a convention with the health post of Malika. The nurse working in this post confirmed having already treated cases covered by the collective health insurance, but admitted that it was still barely used and not well-known. Another collective health insurance had also been launched by Bokk Diom a few years ago specifically for waste pickers, but turned out unsuccessful. Contributions were still unaffordable for waste pickers, and one of them regretted a poor management of the insurance. Another noted a resistance towards a system they did not fully trust. In the absence of contributions, the insurance could not keep functioning. The model was similar to the current state model of UHC, with 80% of the costs covered by the insurance and 20% paid by the client. WIEGO's coordinator is well aware of those issues concerning collective health insurance, and argues that another solution in terms of social protection should be developed :

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<sup>247</sup> Haudeville, "La microassurance santé dans le processus de construction d'un système de protection sociale de base," 36.

<sup>248</sup> ILO, "The Informal Economy in Africa," 13.

<sup>249</sup> In French : « Oui, une mutuelle de santé serait utile. Le système d'aide à la personne qui existe actuellement, ça ne suffit jamais, donc même si ce système est bon, ce n'est pas suffisant »



« Collective health insurances cannot last if they are collective health insurances for informal workers who don't have a regular income. When workers are about surviving with an income that barely allows them to have one meal a day, contributing to a collective health insurance becomes a luxury » <sup>250</sup>.

Nevertheless, none of the interviewees came up with a new solution, always referring to collective health insurance as a workable solution. The only possibility to overcome this issue of expensive contributions would be if waste pickers were integrated within the official state solid waste management system. In that case, waste pickers would benefit from the same social protection scheme as the employees of the UCG. Their contributions would be directly deducted from their salary. Formalization would therefore allow for a better social protection mechanism for waste pickers. We have seen in the literature review that some authors advocate for a transition of informal workers towards the formal sector. Formalizing the sector of waste picking thus seems to be a potential solution to improve waste pickers' social security, by offering them a better chance to be covered by a health insurance, but we have seen the other hurdles linked to formalizing.

Besides, since the implementation of UHC in the informal sector seems problematic, discussions about social protection are currently taking place in the region of Dakar at the level of informal workers. An association representing those workers is actively trying to create a dialogue with the authorities and integrate informal workers into social protection schemes. The organization is called SYMADSI (Synergy of movements and actors for the informal sector's development)<sup>251</sup> and encompasses all informal workers in the region of Dakar, from street vendors to laundresses and waste pickers. The president of the SYMADSI highlighted the fact that improved health care access is a common claim for all informal workers in general. The Ministry of Trade had contacted the SYMADSI to suggest an integration of informal workers within one of the 700 already existing collective health insurances, but the organization advocated instead for a collective social insurance created specifically for the informal sector and including other elements than health such as a retirement scheme. A Committee has been created to discuss those options and prepare a plan, and is waiting for the approval of the state agency in charge of UHC to continue along this path. The president of the SYMADSI argues that the

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<sup>250</sup> In French : « Les mutuelles ne peuvent pas perdurer si ce sont des mutuelles pour des travailleurs de l'informel qui n'ont pas de revenus réguliers. Quand les travailleurs pensent à survivre avec des revenus qui leur permettent tout juste d'avoir un repas par jour, cotiser dans une mutuelle devient un luxe »

<sup>251</sup> In French : Synergie des mouvements et acteurs pour le développement du secteur informel

government's UHC target is not going to work if the informal sector is not properly integrated within those schemes, since the informal sector represents the majority of the working population. He admits that the contribution to collective health insurances planned by the state might be affordable for some, but that informal workers are not aware of the potential benefits of such an insurance. However, their aim is still to find a compromise and lower the cost of the contribution to reach a higher number of subscribers.

« It is up to us to create a collective health insurance, we are going to look for partnerships, because we need to find solutions for contributions. But 3'500 FCFA a year, it's nothing, what is lacking is awareness raising. With a collective social insurance (and not only for health), people will have greater interest to pay a contribution »<sup>252</sup>.

Health coverage for informal workers, and hence for waste pickers, is therefore an ongoing challenge in Senegal. Even if the government showed a clear willingness to tackle the issue of informal workers through their UHC program, adequate health coverage has not been achieved in practice yet. Collective health insurances do not seem to be well-known among parts of the population, and in the case of waste pickers, interviews showed that most of them lacked information about such a possibility. Even if collective health insurances seem to have been the only tool put forward to reach vulnerable populations, contributions still remain too high for some of them, impeding the system to function properly. Moreover, since testimonies of waste pickers signaled a tendency to overlook matters of health because of the urgent priority to earn an income on a day-to-day basis, the concept itself of contributing to an insurance in case of a future health complication can indeed seem alien and inappropriate to those workers.

In the end, it would be important to highlight a striking element that has not been addressed yet, namely that awareness-raising programs, or information campaigns seem to be absent from the discussions around possible solutions to improve the health of waste pickers. Every solution put forward by waste pickers, or even by other actors in relation to waste pickers, deals with the consequences of poor working conditions and the effect of the pollution on health. They all framed ill-health issues as an aftereffect and have not integrated at all in their discourses the necessity to tackle the cause of those issues and anticipate them. It seems that no awareness-raising programs has occurred in the past years for waste pickers. Of course, the lack

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<sup>252</sup> In French : « C'est à nous de faire une mutuelle, on va chercher des partenariats, car on doit trouver des solutions pour la cotisation. Mais 3'500 FCFA par an, ce n'est rien, ce qu'il manque c'est de la sensibilisation des gens. Avec une mutuelle sociale (et pas seulement pour la santé), les gens auront un plus grand intérêt à cotiser »

of time and availability of waste pickers remains a major issue for such programs, and information campaigns should be framed in a way to make them accessible to waste pickers without affecting their livelihoods. But informing waste pickers on health risks and the necessity to wear protective equipment, as well as on increased security to access health care (through collective health insurances for example), seems to be a necessary first step before addressing the consequences of working in a dangerous environment such as Mbeubeuss. Although the importance of this facet of occupational health has been emphasized several times by the literature, it seems totally absent from discourses and actions on the field.

## Conclusion

This research aimed at investigating key issues faced by waste pickers in the waste dump of Mbeubeuss in Senegal. We have seen that disorders suffered by waste pickers of Mbeubeuss are very similar to the ones put forward by other studies on this type of workers. Risks of injuries are the most common concern, followed by complaints about smoke emissions. However, waste pickers seem less aware of long-term effects on health, and show a rather fatalistic attitude towards unexplained sudden deaths of colleagues. Security issues are presented as divided from other health issues in waste pickers' discourse, probably because they are more visible than long-term effects on health. The notion of absence of choice came back on a recurring basis during interviews : many waste pickers insisted that even though they know it is a dangerous occupation, they keep working in the waste dump by lack of other options. Taking the risk to be sick or injured thus seems like a necessary evil to be able to survive on a day-to-day basis. For instance, the fact that an important part of waste pickers denied wearing any protective equipment shows not only a lack of awareness about possible risks related to health, but also a lack of consideration for possible long-term effects. The present and the possibility to earn an income relegates matters of health to the background, which clearly do not seem to be a priority to them. When discussing with waste pickers, it appeared that their main concern rather revolved around the transformation of Mbeubeuss and the future projects of the state and the World Bank. Contention about the future aspect of the waste dump and discussions about the integration and recognition of waste pickers thus seems to prevail over health concerns.

However, the existing literature about occupational health and safety showed us that informal workers are a population particularly vulnerable in terms of health risks, because of the kind of activity they perform, but also because of their usually low socio-economic status. Their situation of poverty strongly impacts their choices in terms of livelihood but also in terms of health behavior. By perpetuating dangerous activities and poor health habits, they further reinforce this cycle of poverty they are in. Therefore, even if health does not appear to be considered as a priority for waste pickers in Mbeubeuss, the long-term impact of poor health should nevertheless be prioritized by stakeholders involved in the defense of waste pickers' rights if they want to tackle their possibilities of development. Since the effects of environmental pollution are less directly visible, considerations about health of waste pickers are less developed in the existing literature as well as on the field. But even without considering those long-term

risks for health, waste pickers still represent a vulnerable population because of their low socio-economic status, who do not benefit from quality health care, and this already represents an important issue. As part of the informal sector, waste pickers are not well integrated within social protection systems, even though the universal health coverage program launched by the government in Senegal targets specifically informal workers. The literature emphasized the importance of taking the context into account when considering matters of occupational health and safety, such as the possibility of accessing health care services, and through the analysis of waste pickers' health behaviors, we have seen that they cannot access properly existing health care facilities, mostly because of the financial cost. Those issues do not concern only waste pickers but informal workers in general, and still demonstrate the importance of considering health matters for waste pickers.

After this analysis, we could wonder what would be the most appropriate steps to improve the situation of waste pickers in terms of health. Since the existing literature on waste pickers did not particularly focus on their health but rather on their vulnerability more globally, recommendations put forward by scholars are not particularly health-oriented. Indeed, they rather emphasize the necessity to organize waste pickers in associations, cooperatives or trade unions, in order to give them visibility and weight in front of the authorities of the city. The organization of informal workers represents a first step towards their integration into the urban economy as put forward by UN Habitat and the ILO, and seems to be the mainstream solution currently presented in the literature about informal workers in general as well as about waste pickers more specifically. Indeed, scholars emphasized the fact that « the level of organization of waste pickers is decisive in their chances to be integrated into the official system »<sup>253</sup>.

For health matters however, this recommendation is probably not the most relevant. Having an association of waste pickers to express their concerns could indeed be useful to negotiate with the state for quality access to health services and pension schemes<sup>254</sup>, but the present research shows that it is not sufficient. As a matter of fact, an association of waste pickers already exists in Mbeubeuss, namely Bokk Diom's association. Since its creation in 1995, Bokk Diom contributed to improve the situation of waste pickers in various ways, and it is not the purpose of this analysis to evaluate Bokk Diom's relevance. But it seems clear with this analysis that neither awareness raising about health matters has been linked with the existence of Bokk Diom, nor better protection of waste pickers. Only the creation of the community health center

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<sup>253</sup> Own translation (Cavé, *La Rue Vers L'ordure*, 63.)

<sup>254</sup> Kerbage and Abdo, "Cooperation among Workers in the Informal Economy," 45.

with the support of UNDP is indeed linked to the existence of this association. On a similar note, the attempts of the state to regulate the waste dump would maybe in some ways lower health risks, but from the indications gathered by the researcher, the regulation would focus more on controlling the waste entering into the waste dump as well as regulating the flow of workers on site. The level of pollution would thus stay the same, and a regulation by the state would probably not address the lack of awareness of waste pickers about health risks.

Therefore, other measures than those previously mentioned should be implemented to improve the health of waste pickers and better protect them. Considering the results of the present analysis, the first necessary step seems to be an improvement of the community health center present in Mbeubeuss, since it appears to be the most commonly used facility by waste pickers. According to Adama Soumaré (WIEGO), the mayor of Malika seems to be now paying closer attention to the situation of waste pickers, and since the community health center is used by Malika's inhabitants, there could be potential room to envisage a kind of partnership or support with the municipality. Waste pickers show a lack of trust in this facility. The municipality of Malika should not only materially invest in it to make it more functional, but also promote it among waste pickers and encourage them to use this facility once it is adequately equipped. Indeed, one of waste pickers' requirements is to have an access to health care as close as possible to the waste dump to avoid losing time, so the community health center, situated directly on the side of the waste dump, would be an appropriate solution if equipped with the necessary resources.

Secondly, as evidenced at the end of the analysis chapter, the complete absence of protective and information measures about the risks also needs to be tackled. Awareness raising campaigns should be undertaken by a stakeholder who benefits from a clear credibility among waste pickers, someone who is respected and listened to. Indeed, if an actor such as the government or an international organization launches such a program, waste pickers will perceive them as disconnected from their concerns. Those campaigns should therefore be initiated at the grassroots level, by integrating waste pickers in the process who then become representative of such campaigns among their colleagues. Initiators of such campaigns could be local NGOs active in the defense of waste pickers, or even Bokk Diom association, who would then train waste pickers whose voice is listened to in Mbeubeuss, such as respected elders. Those campaigns should be able to create a connection in waste pickers' minds between poor health,

marginalization and poverty issues, so that they also address their prime concerns and provoke a willingness to modify their behavior in terms of health.

Lastly, even if the authorities are already discussing with the informal sector on possibilities of integration within existing social protection schemes, this analysis has highlighted the fact that collective health insurances do not seem to be the ideal solution for informal workers such as waste pickers. However, there have not been so far other solutions put forward, neither by the existing literature, nor by interviewees. Further reflections on this issue should thus be pursued while taking into account all the specificities of the informal sector. Existing social protection schemes cannot be simply replicated, and need to be adapted to the needs of informal workers. But for this, informal workers must first be recognized as integral actors of the economy. Waste pickers represent a specific type of workers with particular health issues related to their work environment, but also present similar concerns as other informal workers. Changes should therefore be implemented both at the very local level within the community of waste pickers themselves, but also on a more global level, by recognizing the importance of the informal sector and of the necessity to take their claims into account for future development strategies. A better recognition might also be paired with higher incomes, allowing waste pickers to access health care more easily.

It is clear that those recommendations could not by themselves solve all health issues for waste pickers, and that other steps would need to be implemented to address health risks as a whole. For instance, those recommendations do not address the problem of environmental pollution created by Mbeubeuss, while it is naturally strongly linked to health issues faced by waste pickers. Their socio-economic vulnerability, which we have seen has an impact on occupational health, is not fully addressed here either. Therefore, this research does not pretend to solve all health issues related to waste pickers, but the three main steps suggested are considered here as major elements which could greatly improve the situation and have a potential strong effect on the health of waste pickers.

**Recommendations : possible steps to be undertaken for the improvement of waste pickers' health**

- Municipality of Malika
  - Support the development of the community health center and promote it among waste pickers
- NGO and Bokk Diom's association
  - Launch awareness-raising campaigns about health risks and the importance of wearing a protective equipment, in partnership with influent waste pickers
- State of Senegal
  - Create an adapted social protection scheme for informal workers
  - Recognize informal actors as part of the economy by integrating them in negotiations

**Figure 6 : Recommendations**

It has already been stated in the methodology that the results obtained here would be hardly applicable to other contexts, since Senegal has a specific health care system, and because the situation of waste pickers depends much on the country and their integration within the formal economy. However, this research confirms on a more general level the health risks in waste dumps evidenced by the literature. This research also verifies assertions of the literature on the vulnerability of informal workers in terms of access to health care. Indeed, the financial burden of accessing health care mentioned by several waste pickers is a distinctive feature of low-income populations, and shows the necessity not only to lower the costs of consultations but also to take into account the important costs associated with prescriptions and additional medical analyses. Moreover, the lack of time to access health care evidenced by the interviewees is also a concern shared by informal workers in general, and does not come as a surprise among the findings of this study.

On another hand, some results of this analysis bring a new light on the topic and complement the aforementioned expected results. For instance, the observed lack of concern for health issues noticed among waste pickers comes as a new element that had not been put forward by the literature yet, since the latter had not really given voice to waste pickers themselves so far. The fact that health is not a priority to them should be taken into consideration when proposing solutions to tackle health issues : indeed, raising awareness will be much harder if waste pickers are first and foremost preoccupied with earning their daily bread. Combining the preservation of a livelihood for those who depend on the waste dump and the concern about the environmental and health impact of such an open-air landfill is thus the major challenge evidenced by this



research. Besides, waste pickers' lack of knowledge about long-term risks has also been made very clear with this research, whereas it had not been so precisely stressed out in other studies. On a more general level, this research also contributes to the global debate on UHC. Indeed, it shows that solutions developed specifically for populations that are hard to reach, such as informal workers, can seem ideal on paper but face various obstacles in reality. For example, the model of collective health insurances advocated by the state of Senegal for informal workers cannot solve completely the matter of financial costs, as evidenced in this study.

The health situation of workers in Mbeubeuss is probably similar to other waste dumps in the region. As mentioned in a previous chapter, other case studies have been conducted in other countries in West Africa, but focused rather on the technical aspect of waste dumps' difficulties rather than on waste pickers themselves. However, the presence of informal workers collecting and sorting waste is a key element in all those open-air landfills, whose model relies on this type of work. The findings of this research could therefore to some degree contribute to understand key issues in terms of health in other waste dumps in West Africa, and serve as a starting point to conduct further research in those places in order to compare the results. Since health of waste pickers has not been sufficiently addressed in general, there is a clear need for new research on health behavior and perceptions of waste pickers in other regions of the world as well.

In the end, waste dumps and impacts on health are a global matter that cannot be constrained simply to specific case studies such as Mbeubeuss. With rapid modes of consumption, flows of waste are increasing steadily, and represent a topic of interest regionally as well as globally. Mbeubeuss receives waste 'only' from the region of Dakar, but could one day become a turning point for international trade of waste, depending on the evolution of waste management worldwide. For instance, with China announcing last year that it would ban foreign flows of 24 types of waste coming into its country<sup>255</sup>, other countries now have to rethink their way of dealing with waste. Will important waste dumps in Africa, such as Mbeubeuss, be the next dumping ground of developed countries, now that China is not an option anymore ? It seems like it is already the case with imports of electronic waste into certain waste dumps such as Agbogbloshie in Ghana. Besides, e-waste represents within the waste management sector a growing concern, and has been a starting point to address environmental health issues. Indeed, the boom of electronic waste in the last decade contributed to make the issue of health for e-waste recyclers more salient in the academic field, as well as among international organizations.

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<sup>255</sup> de Freytas-Tamura, "Plastics Pile Up as China Refuses to Take the West's Recycling."

With the increasing consumption of electronic devices, the question of the end of life of those devices has raised many concerns in terms of environmental impacts. Scholars have also alerted on the impact on health of recycling practices involving the burning of certain materials to extract valuable components. E-waste poses the largest health risks within the waste sector for those reasons<sup>256</sup>. It would therefore be interesting to observe if such a heightened interest due to the explosion of e-waste will have an impact on the interest applied to the issue of waste more broadly, and to the health of waste pickers regardless of the material they are recycling. Admittedly, the specificity of e-waste recycling presents higher risks in terms of health for waste pickers, but it should rather represent an entry point to finally bring to light the situation of waste pickers in general.

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<sup>256</sup> Yang et al., “Waste Management, Informal Recycling, Environmental Pollution and Public Health,” 2.

## Annexes

### Annex A : Summary of interviews conducted for this research

Number of interviewee(s)	Role of the interviewee	Organization / place of work	Key issues discussed	Key answers
21	Waste picker	Mbeubeuss	Perceptions about health and access to health care ; health behavior	<ul style="list-style-type: none"> <li>- Protective equipment is bothering and useless</li> <li>- Injuries are common</li> <li>- Smoke is disturbing</li> <li>- Use of community health center, but lack of money</li> </ul>
5	Waste picker, representative of Bokk Diom	Mbeubeuss	Perceptions about health and access to health care ; health behavior	<ul style="list-style-type: none"> <li>- Waste pickers do not visit the community health center anymore, prefer to go to the nurse in his private practice, lack of trust/lack of medicines</li> <li>- Collective health insurance does not work because waste pickers do not contribute and because it is not well organized</li> <li>- Many risks on the waste dump because no control, but we are used to it/we are protected by God/immune</li> <li>- Mask to avoid being recognized only, feeling of marginalization/ if a foreigner wears a mask, will be perceived like a behavior of rejection</li> <li>- Health issues : mainly accidents and smoke</li> <li>- Fear of being associated with tuberculosis</li> <li>- Solidarity between waste pickers if sick</li> <li>- Lack of means and time to access health care, would like free consultation directly on the waste dump</li> <li>- Waste pickers come from rural areas</li> <li>- We were there before the inhabitants who are complaining about Mbeubeuss</li> </ul>
1	Nurse	Malika health post	Disorders linked to Mbeubeuss ; protection of waste pickers ; health care system in Senegal	<ul style="list-style-type: none"> <li>- Hard to identify waste pickers among patients</li> <li>- The area is polluted</li> <li>- ARI as main pathology</li> <li>- Waste pickers are difficult to approach in terms of health because feel marginalized</li> <li>- Inhabitants are impacted by the pollution of Mbeubeuss</li> <li>- The health post is linked to a collective health insurance but people need to know about it</li> </ul>
1	Community health worker	Mbeubeuss community health center	Disorders linked to Mbeubeuss ; protection of waste pickers ; health care system in Senegal	<ul style="list-style-type: none"> <li>- Treats mainly headaches, coughs, diarrheas, simple wounds, test for malaria</li> <li>- Waste pickers do not come back for second consultations</li> <li>- I don't go myself on the waste dump</li> <li>- Waste pickers are informed because vaccination campaigns and mosquito net distributions in households</li> <li>- Waste pickers think the community health center is closed</li> <li>- We lack medicines</li> </ul>
1	Head doctor	Keur Massar health center	Disorders linked to Mbeubeuss ; protection of waste pickers ; health care system in Senegal	<ul style="list-style-type: none"> <li>- ARI as first pathology in the region - lack of a study to link it with Mbeubeuss</li> <li>- Waste pickers as a vulnerable population</li> <li>- Tried to raise awareness of the authorities about health issues of waste pickers</li> </ul>

Number of interviewee(s)	Role of the interviewee	Organization / place of work	Key issues discussed	Key answers
1	Nurse	Keur Massar health center	Disorders linked to Mbeubeuss ; protection of waste pickers ; health care system in Senegal	<ul style="list-style-type: none"> <li>- Burns and injuries are the most common conditions among waste pickers / ARI rather for the inhabitants</li> <li>- Lack of hygiene and protection of waste pickers</li> <li>- Tries to raise awareness about the importance of protection when comes for a consultation</li> <li>- Hard to guess they are waste pickers because do not tell him their profession</li> </ul>
1	Coordinator of Mbeubeuss	Solid Waste Management and Coordination Unit (UCG)	Recognition of waste pickers by the authorities ; importance of health and protection in Mbeubeuss ; discussion UCG – waste pickers	<ul style="list-style-type: none"> <li>- Waste pickers need to respect rules</li> <li>- Problem of burning tires provoking smoke</li> <li>- UCG is trying to create a dialogue with waste pickers</li> <li>- UCG employees have the obligation to wear a protection</li> <li>- UCG is controlling Mbeubeuss</li> </ul>
2	Employee	Solid Waste Management and Coordination Unit (UCG)	Importance of health and protection in Mbeubeuss ; discussion UCG – waste pickers	<ul style="list-style-type: none"> <li>- Notion of control by the UCG</li> <li>- Management of waste as a responsibility of the state</li> <li>- Attempt to create a dialogue with waste pickers, the municipality and the UCG</li> <li>- Difficult for waste pickers to understand the risks</li> <li>- Waste pickers do not like to say they are sick</li> </ul>
1	President	Synergy of movements and actors for the informal sector's development (SYMADSI)	Social protection ; universal health coverage ; informal sector	<ul style="list-style-type: none"> <li>- Discussions with the state - efforts to formalize the informal sector, but the state is not active enough</li> <li>- The Trade Ministry contacted the SYMADSI to reflect on possibilities to integrate the informal sector within existing collective health insurances, but SYMADSI advocates rather for a separate insurance specifically for informal workers</li> <li>- Problem of contributing to collective health insurance</li> <li>- UHC programme will not succeed without the integration of the informal sector</li> </ul>
1	Coordinator in Dakar	WIEGO (Women in Informal Employment : Globalizing and Organizing)	Issues faced by waste pickers ; health behavior of waste pickers ; history of support programmes for waste pickers ; relationship with the authorities	<ul style="list-style-type: none"> <li>- Waste pickers are marginalized by the state</li> <li>- Waste pickers should better organize</li> <li>- Lack of means to access health care / do not trust volunteers at the community health center</li> <li>- Solution : financially support the community health center (to discuss with Malika's mayor)</li> <li>- Contributions to collective health insurance are too expensive for waste pickers who only think about surviving, so need of a different system</li> <li>- Latent diseases, so waste pickers are not aware of the risks - they need to be informed / do not want any protection even if offered</li> <li>- Lack of communication between inhabitants and waste pickers</li> </ul>

## Annex B : Questions asked to waste pickers for the short interviews (in French)

- Depuis combien de temps travaillez-vous à Mbeubeuss ?
- Où habitez-vous ?
- Votre travail est-il risqué ?
- Portez-vous une protection lorsque vous travaillez ?
  - Portez-vous un masque / des gants / des bottes ?
  - *Si non* : Pourquoi ne portez-vous pas de protection ?
- Avez-vous des problèmes de santé liés à votre travail ?
  - Lesquels ?
  - *si pas de réponse claire* : Lorsque vous êtes malade ou blessé, qu'avez-vous comme problème ?
- Lorsque vous êtes malade ou blessé, que faites-vous ?
  - *Si pas de réponse claire sur l'établissement utilisé* : Si vous devez aller vous faire soigner, où allez-vous ?
- Utilisez-vous aussi la médecine traditionnelle ?
- Qu'est-ce qui vous empêcherait d'aller au centre de santé si vous en avez besoin ?
- Si vous n'avez pas assez d'argent pour aller voir un médecin, que faites-vous ?
- Qu'est-ce qu'il faudrait d'après vous pour améliorer la santé des récupérateurs de déchets ?
- Savez-vous ce qu'est une mutuelle de santé ?

## Annex C : Comparative table of short answers

Waste picker	Gender	Number of years working in Mbeubeuss	Place of residence	Protection	Reasons for the absence of protection	Health issues	Health care facility used	Solution	Mention of solidarity	Knows about collective health insurance
1	F	2	Malika	none	-	Fatigue, cold, cuts	Health center, Camara, pharmacy	Have more medicines and a better community health center	yes	-
2	M	14	village towards Thies	boots	-	Injuries, fatigue, nausea	Health center, pharmacy	Wear protective equipment	-	-
3	F	3	Keur Massar	socks, gloves	Work not risky	Never sick	Health center	-	-	-
4	M	16	-	boots, gloves	Bothers me, not used to it	Fatigue, cuts	Hospital, community health center, healer	-	yes	yes
5	M	-	-	-	-	Fatigue	Hospital	I don't know	-	no
6	M	12	Malika	safety shoes, sometimes gloves and boots	Disinfecting hands when coming home is enough	Cuts, but otherwise not sick	Community health center, pharmacy, healer	I don't know	yes	no
7	M	50	Malika	boots, gloves if I find some	Not used to it	Red eyes, respiratory infection, cuts, skin disease	Community health center, health post, health center	I don't know	-	-
8	M	50	-	none	Not used to it, no need for it	Flu	Community health center	Improve community health center	I don't use it	yes
9	M	25	-	gloves	-	Cough, back pains	Community health center, health post, health center	Free consultations on the waste dump : collective health insurance	-	yes
10	M	20	Yeumbeul (Malika)	none	Not used to it	Never sick	Community health center, hospital	Solidarity among waste pickers	yes	-
11	M	17	-	none	Work not risky	Never sick, accidents	Community health center, hospital	Free care ; funding for the community health center	yes	-
12	M	-	Keur Massar	only if I find some	-	Respiratory issues, accidents	Hospital, healer	There is no solution	I don't use it	-
13	M	20	-	none	-	Fatigue, stomach pain	Community health center, hospital	Change job	I don't use it	no
14	M	20	-	none	Bothers me	Never sick, accidents	Community health center	Provide the community health center with medicines and human resources	I don't use it	no
15	F	6	-	none	Work not risky	Cuts, respiratory issues	Camara	Financial support of waste pickers	I don't use it	no
16	M	17	-	boots	No need for it	Back pains	Community health center, Keur Massar health center	Financial support of waste pickers	I don't use it	yes
17	M	10	-	safety shoes, gloves	-	Back pains, respiratory issues, cold	Community health center, Camara	Provide the community health center with medicines	yes	no
18	M	-	Guediawaye (Malika)	none	Too expensive	Cuts, fatigue	Community health center	Provide the community health center with medicines ; training of waste pickers about primary care	-	no
19	M	-	Malika	shoes	Not used to it	Accidents	Community health center, hospital, healer	A qualified doctor in the community health center	-	yes
20	M	20	Thiaroye	cap	Not used to it, too expensive	Respiratory issues	Health post, healer	Supervision of waste pickers by the state ; provide the community health center with medicines	-	yes
21	M	20	Malika	shoes	No need for it	Cuts, fatigue, back pains	Community health center, healer	Provide the community health center with medicines and human resources	yes	yes

**Note :** Camara = the nurse who opened a private practice and was formerly working in the community health center

## Annex D : Photos of Mbeubeuss











(Photos : ©Marine Vasina)

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