

Recycloscope VII

Global views and local itineraries on
recycling circuits and waste pickers



Pablo Schamber, Francisco Suárez and Claudia Cirelli
(editors)



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RECYCLOSCOPE VII
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ON RECYCLING CIRCUITS AND WASTE PICKERS

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Recycloscope: global views and local itineraries on recycling circuits and waste pickers

Brief clarifications about this book and acknowledgments

Since 2007, we have been editing the *Recicloscopio* book series, which explores various aspects of the waste–society relationship, with a particular focus on the recycling circuit initiated by urban waste pickers. Published by the national universities where we work (Lanús, Quilmes, and General Sarmiento), the name of the series (*Recicloscopio*) and the recurring word in the subtitles (“views” or “perspectives”) reflect the open and collaborative spirit of these collective works. While primarily focused on Argentina, the series also covers other Latin American countries and brings together a wide range of authors and viewpoints. *Recicloscopio* is both a collection of books and an academic initiative dedicated to sharing analyses on the dynamics of waste management, its connection to urban waste pickers (known as cartoneros or informal recyclers), and the recycling industry. It originated in Argentina in 2007, mainly from research projects funded by public universities. The series has been published by the presses of the Universidad Nacional de General Sarmiento (UNGS) and the Universidad Nacional de Lanús (UNLa); this volume also includes contributions from the Universidad Nacional de Quilmes and the University of Tours (France).

The contributors to these volumes come from diverse professional backgrounds: urban waste pickers, anthropologists, sociologists, archaeologists, ecologists, lawyers, engineers, geographers, architects, social workers, communicators, and others. Their perspectives represent a rich and varied sample of research on material recovery and recycling in Latin America. These books show how the issue has evolved and diversified, while waste pickers have become more organised, forming regional and global associations, strengthening their engagement with the state, and influencing policies towards more inclusive approaches.

For this seventh volume, we benefited from the valuable collaboration of Dr Claudia Cirelli (UMR CITERES, Université de Tours/CNRS). Through her expertise and network, we expanded the geographic scope of contributions to include regions previously not covered (Africa, Asia, Europe), given that until now, most contributions came from Argentina and other Latin American countries. The authors' contributions were received towards the end of 2019, some in Spanish and others in English. Since then—and throughout the COVID-19 pandemic—we have been in regular contact with them to ensure that the descriptions of specific contexts are accessible to readers from different continents and allow for meaningful comparisons. The Spanish edition was published in 2024 (<https://www.ungs.edu.ar/libro/recicloscopio-vii>) and with this English edition, we hope to expand our community of readers. Translating the title *Recicloscopio* into English is challenging because it is a coined term combining “recycling” and -scopio (from Greek, meaning observation or study), which has no direct equivalent in English. However, several options can convey its meaning, depending on the context. For example, *Recycloscope* is the most literal translation, preserving the neologism's structure and understandable if the concept is explained. A similar option, but with a hyphen for clarity, is *Recycling-scope*. Other alternatives are more descriptive, such as *The Recycling Observatory*, which evokes a space or initiative for systematic study of recycling; *Recycling Studies*, which highlights the field of research; *Insights into Recycling*, emphasising a deeper understanding of the topic; or *The Recycling Lens*, a more metaphorical option suggesting a way of looking at and analysing recycling. Considering that *Recicloscopio* is a book series and an academic project investigating recycling and its actors—particularly urban waste pickers—among the options that best capture its essence while recognising its trajectory, we have chosen to title this volume in English with a version that preserves its sound and origin. Therefore, this volume is titled: *Recyclo-scope: global views and local itineraries on recycling circuits and waste pickers*.

We would like to thank the authors of the chapters for sending their contributions and for their patience and willingness to respond to our editorial suggestions and ongoing feedback. We extend our thanks to Zoë Lenkiewicz for her invaluable help with the English translations, and to the generous team at the English Translation Program of the National University of Lanús for their translation work. Special thanks go to Julián Del Russo, certified translator, for reviewing and editing the final English text. We would like to express our gratitude to Marcelo Galeazzi, official translator in the UK, for his revision. We also thank Javier Areco and the team at the Rodolfo Puiggrós Library, as well as Cecilia Andrea Munafó and Lautaro Nicolás Suárez for producing the maps and graphics. Additionally, we are grateful to the authorities and staff of the institutions we belong to, who have consistently supported us and helped ensure the continuity of this series. This volume also received support from the UMR CITERES Research Center at the University of Tours. As with previous volumes, this book underwent external peer review, whose feedback encourages us to continue and improve this ambitious endeavour.

Pablo J. Schamber and Francisco M. Suárez

Introduction

Local cases and global trends in recovering recyclable waste

*Francisco Suárez**, *Claudia Cirelli*** and *Pablo Schamber****

Building on the work of previous volumes, volume VII is a compilation of diverse articles dealing with different aspects of waste management, focusing on the role of waste pickers within or without the official waste management systems. The defining feature of the *Recycloscope* collection, published since 2007, is that of pushing borders. The scope of cases put together in this book goes beyond the boundaries of South America to include cases in Africa, Asia, and Europe, thus creating an amazing opportunity to contrast different regional trends and make cross-continental comparisons. The methodological approach of these research studies was mostly ethnographic, but quantitative, cartographic, and photographic approaches were included as well.

The most remarkable features in each country are introduced and briefly summarized based on these compiled articles. Finally, an overall comparison is presented making it possible to outline aspects of equality and divergence among countries and be aware of future challenges.

* National University of General Sarmiento (“*Universidad Nacional de General Sarmiento*”), Argentina.

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*** National University of Quilmes (“*Universidad Nacional de Quilmes*”), Argentina, and CONICET [Spanish acronym for Argentina’s National Scientific and Technical Research Council].

Cases in Africa

In 2018, the International Labour Organization (ILO) reported that the informal economy, which includes waste management, accounts for 85.8 percent of total employment in Africa. The sectors that make up this type of economy exist in a context defined by multiple vulnerabilities such as low income, social and legal vulnerability, health risks, stigmatization and child labor exploitation, and other indicators of precariousness. In addition, the document *Africa Waste Management Outlook*, published by the United Nations Environment Programme (UNEP) in 2018, emphasized that “informal waste pickers are active in recovering valuable resources from waste at little to no cost to the public and private sectors.”

Three significant pieces of data from this report can be highlighted: the coverage of waste collection services reaches 55% of the population, more than 90% of total waste is disposed of at open dump sites, and 57% of waste is organic. Additional estimations indicate that daily per capita waste generation in Africa is around 0.78 kg (UNEP, 2018), far below the 1.2 kg world average. Generation rates, however, vary across different areas of the country, spanning a range from 0.09 kg to 3.01 kg per person per day due to differences in consumer habits, level of earnings, and different criteria when calculating waste quantities (Emenike, 2013; Hoornweg and Bhada-Tata, 2012).

Due to accelerated urbanization, the amount of waste in Africa is estimated to double over the next 10 or 15 years (Yoshida 2018). The presence of work informality, institutional inefficiency in waste management, lack of an appropriate infrastructure, and a substantial and ongoing increase in waste generation foreshadow greater challenges for waste management in this country, especially for waste pickers.

Research studies about the situation in Africa show that during the last decade of the twentieth century, strong investments towards urban infrastructure were made by the World Bank, other financing agencies, and international cooperation. For instance, as seen in cities such as Cairo, Antananarivo, and Ouagadougou, which are discussed in this book, there are urban development projects aimed at sanitation with funds from the World Bank and other NGOs. These investments paved the way for the arrival of international private companies specialized in waste management (Ngnikam, Tanawa 2006; Desvaux 2009; Debout 2012; Pierrat 2014). However, neither waste valorization alternatives nor long-established actors of waste management were taken into account.

Articles compiled in this book dealing with this country discuss a poor level of regulation regarding waste recovery agents and mention that when the implementation of policy was at least partially possible, its impact was generally poor, improving only in specific places outside the most consolidated informal waste recovery chains. In general, public policy limited the work of waste pickers through sheer indifference or restrictions on their activity. Even so, recycling is carried out in the streets and in authorized and unauthorized dumpsites. Recovered materials are either recycled or traded in collection warehouses, or sold to certain locations using intermediaries, and either sold to local factories or exported.

International recycling chains specialized in iron, different kinds of plastic, and waste from electrical and electronic equipment (WEEE) can be found in Africa. In the Gulf of Guinea, commercialization of recycled waste through intermediary chains is aimed mostly at the export of iron to India, Southeast Asia, and China. The ports of Lomé in Togo and Kribi in Cameroon, among others, operate as transit ports for collected iron. Since the first years of the 21st century, the demand from China for metal scrap and diverse types of plastics, polyethylene terephthalate (PET) in particular, has increased.

As for Lagos in Nigeria, huge volumes of WEEE from Europe and the United States are imported through this city and redistributed to Ghana, Togo, Cameroon, Niger and Sudan. As shown in highly circulated videos, Accra in Ghana is the most important center of electronic waste disposal and recycling, comprising the largest e-waste dump site, Agbogboshie, where thousands of Ghanaian workers perform recycling of waste and materials.

In addition, trading chains of recycled items have an outstanding presence in local markets. Discarded items from pound shops are recycled and sold at fairs and alongside several highways. In these types of chains, the proximity from the places of collection to the places of trade is essential, and different techniques are applied to diverse recycled materials such as furniture, tools, clothing, and shoes, items that demand knowledge of specific crafts and skills to be recycled. In Madagascar, this type of trading chain is of importance.

Another waste recycling chain can be found in Cairo, the capital city of Egypt. The work of the Zabbaleen is crucial in this region, especially in the recycling of plastics which are brought from Libya and Sudan. The Zabbaleen have improved their plastic revalorization techniques by incorporating plastic washing and pelletizing. These improvements have been made possible thanks to the contributions of some local and foreign NGOs, whose involvement brought these processes to the attention of academic circles. However, several

studies concur that their actual contributions to the industry of waste management and recycling have been exaggerated.

In regard to organic waste recycling, different experimental initiatives are emerging at both street and municipal levels. On some occasions, the Zabaleen have carried out the recycling of this type of waste, which can then be used to feed livestock such as pigs. These peoples are Orthodox Christians, which brings ethnic and religious factors into play, since Islam forbids the consumption of pork meat. Waste pickers working in Cairo were stigmatized on the grounds of pig consumption during the so-called pig flu of 2009-2010. Thus, in addition to the burden of religious stigma, these workers suffer from “sanitary” discrimination as well. As we will discuss below, the same applies to waste pickers in Cape Town, who also suffer from stigma due to their association with dirt and putrefaction. This makes them invisible both to the residents of the neighborhoods where they scavenge for resources, and to policy-makers whose policies do not favor their empowerment.

Summary of articles about the cases in Africa compiled in this book

In *The controversial infrastructures of plastic recycling in Cairo*, Pierre Desvaux examines the complexity of the circulation of plastic waste in Cairo, which has been the target of many controversies. Based on methodology with a qualitative approach supported by interviews and participant observation, the subsequent emergence of political ecology and social metabolism is used as a framework to understand infrastructure as a connection between people and spaces, materials, technology, energy, and economic resources. The article underscores the lack of public policy regarding waste reuse and recycling, and also points out the lack of coordination between private and community actors for the adaptation of waste. The three main actors that propel the activity are characterized in these articles, and are stated as follows: the recycling industry, large buyers of waste referred to as the Bekkia, and the Zabbaleen community. Focusing on the latter of these groups, research describes the progressive shift of the Zabbaleen traditional economy, from being centered on the recycling of organic waste and pig farming towards an economy based on plastic recycling, a material which they get from other cities and neighboring countries through interconnections, allowing for a regular flow of this resource. However, technological limitations and the quality of the recycled plastic itself are factors that restrict the transactions related to this activity to the local market.

In *Waste markets in Antananarivo: centers and gateways of waste valorization in the capital of Madagascar*, Adeline Pierrat analyzes the flow of materials recovery, its territorial distribution, and the actors involved in Antananarivo from 2006 to the present day. This text focuses on the issue involving the recovered items markets. Within the framework of the research program *ORVA2D* (for its acronym in French, meaning *Organization for Waste Recycling in Developing Cities*), this article underlines the limits of the public system in the management of waste due to the low coverage of waste collection services, saturation of landfills and lack of resources. The text also highlights that informal employment has consolidated an integrated system comprised of the following actors: the waste pickers who operate under the “door-to-door” method, those who work in the Andralanitra landfill, street waste pickers, the craftspeople, and the traders. Each of them performs specific tasks in specific areas of the city of Antananarivo. This work organization in the area is illustrated with maps that show the flow of recycled objects and materials, for example, kitchen tools and electrical appliances for neighbors, containers for traders, among others goods and subjects. The study shows that consumer habits of products that come from waste recovery is very rooted in the daily life of the inhabitants of Madagascar, even when they can afford new products. The author of this article underscores the insular condition of these people, which, on the one hand, makes it difficult to obtain goods, but on the other hand, makes it easy to recover and resell products. Pierrat indicates that these long-established markets are not taken into account by public policies for waste management in Antananarivo, even though they have been functioning and reducing waste generation for several years.

In *Collective organizing of informal waste workers and urban governance: perspectives from Nigeria*, Thaddeus Chidi Nzeadibe and Chinedu Josephine Onyishi analyze the activity of waste pickers and middlemen and their contributions to waste reduction and to the development of industrial supplies. As it is done in other texts, this text highlights the failure of the public sphere to acknowledge their activities. The authors also explain the recovery and recycling chain as a pyramid, in which there are waste pickers of final disposal sites, and itinerant street waste pickers, which are at the bottom, followed by the small middlemen. Then, there are materials recovery facilities (MRF), and, finally, in the upper part of the pyramid, there are manufacturers and exporters of recycled waste. It should be noted that the support of international and local non-governmental organizations (NGOs) was crucial for the organization of informal waste pickers in some cities of Nigeria. It is estimated that there are

around one million waste pickers working in the cities of that country. This article focuses on the study of two cases: the cities of Aba and Lagos. On the one hand, in Aba, the market for recycled materials is organized in groups converging around the main market, where the most important products are wine bottles, and plastic and metal waste. On the other hand, Lagos is distinguished for recovering electronic waste but also for receiving these same materials from other continents. Fifty percent of these recovered materials come from that waste stream, and are used as raw material for industries in Lagos and Nigeria in general, while the remaining fifty percent is exported to some neighboring African countries. The authors highlight the great potential of the waste recovery chains for job creation and for the development of a recycling economy.

In *The recovery of waste in Yaoundé (Cameroon): actors, chains, and flows of recovered materials*, Jules Ngambi presents recycling and reuse chains within the waste valorization system in Yaoundé. Through mainly qualitative field research, the author shows the diversity of participating actors and the links between the informal and the formal sector. The first sector consists of waste pickers, independent traders (people who sell the recovered products in an itinerant way), unprocessed waste resellers, craftspeople, collective interest groups (CIGs), and different associations. On the other hand, the formal group is made up of private companies, state institutions, and other types of non-governmental organizations. Waste pickers provide secondary raw materials to all the people who are part of the valorization process. By doing this, they are considered key to the urban ecosystem of Cameroon. The author highlights the existence of financial support by international organizations. These funds are allocated to associations, NGOs, and CIGs to provide technical training in the recovery process and to conduct several development projects. The formal sector has almost no presence in the collection of materials from the “deposits” (garbage bins, clandestine dumps, and official landfills). Jules Ngambi differentiates four ways of valorization and recovering: the ones made with industrial purposes (that is to say, the sale of ferrous, non-ferrous and plastic materials); the ones connected with the use of organic waste for animal rearing; those that involve the valorization through the sale of washed recovered objects, which are given a second life with the same use (reapplication) or a new use (reuse), for example with plastic bottles, jam jars, beer bottles and kitchen tools. This activity, which in the past carried a huge stigma, has now become a well-known profession in Yaoundé. Finally, another method of waste valorization is repair: it is a very diversified activity that encompasses all the areas of consumption regardless of purchasing power. The author presents two products originated from recovery/

recycling that highlight the innovation capacity of the waste pickers. On one hand, an aluminum pot made with recycled materials, and on the other hand, cobblestones made with plastic. Even though the results are encouraging, such enterprises find it difficult to develop on a large scale, considering that they are scattered and have no state support.

In the article *From decline to valorization of gakpogblégbé in Lomé, Togo: socio-spatial circuit and impacts*, Cyprien Coffi Aholou and Prosper Sékdja Samon examine the socio-environmental impacts of scrap metal recovery in Lomé. This study is based on a bibliographic analysis, in addition to interviews and observations, as well as a photographic record that was implemented as a strategy to get involved in the fieldwork. Finally, a cartography of the activity was made. The scrap metal recovery activity started in the year 2000 with a huge demand from China. The recovery starts in the streets, where waste pickers, while singing “*gblégbé*” (spoiled), go to houses and workshops to pick up waste. After that, these materials are sold to warehouses, and they are subsequently exported. Lomé also receives ferrous wastes from other countries of the Gulf of Guinea, especially from Benin. This study highlights that waste recovery activity has increasingly been seen as a viable job option, especially among young people. In addition, they highlight that this job opportunity has led to migration from bordering countries. From an environmental point of view, hundreds of thousands of tons of metal scrap are recovered, and the final disposal of vehicles in landfills and warehouses is reduced. However, the authors highlight that there is no capacity to process the recovered material industrially and that this activity is carried out in an informal way. Finally, they ask themselves about the risks (especially the ones connected with sanitation) to which the waste pickers are exposed.

In *Public policies and waste recovery in Ouagadougou (Burkina Faso): actors and logics*, Issa Sory analyzes the coordination between public policies for waste management and informal chains of recovery and reuse of waste. This qualitative research was carried out based on interviews conducted during the 2009-2019 period. This article highlights the influence of World Bank plans in urban public policies and, particularly, in the participation of the private sector in waste management. Until 2010, the local management did not consider stages of waste valorization, but since then, a new experimental program in some areas of the city started. This plan was based on differentiating paper, plastic, and organic waste collection. However, the lack of options to commercialize these materials was a challenge for developing this experience. Furthermore, this article highlights a women's organization dedicated to plastic recovery and

another organization that processes organic waste. The informal sector has been organized based on permanent and occasional waste pickers. The permanent waste pickers build business relationships with waste generators, to whom they offer a waste pick-up service. The authors also underscore that the lack of coordination between the formal and informal systems and the parallel waste pick-up circuits can easily increase clandestine garbage dumps.

In *Stigma and agency: street waste pickers in South Africa*, Teresa Perez provides a reflection and some evidence for an important aspect of waste management: the representations created and replicated by society about this activity and the people who carry it out. This text looks into the reasons why policies to promote green employment and circular economy (aimed at registering the waste pickers who work with recyclable waste) have a small impact on the most vulnerable sectors. As a result of her ethnographic study in Cape Town, while she followed the work of a group of waste pickers, the author discovered that waste pickers are highly stigmatized. Not only are they stigmatized by the organizations in charge of introducing said policies (considering they ignore the waste pickers' skills and have no interest in deeply getting to know the areas where they want to participate), but also by the people who live in the neighborhoods where the waste pickers travel through. This stigmatization is regularly reinforced in a subtle but powerful way and causes negative stereotypes. This reduces the chances of having successful policies that could help informal workers improve their life and income conditions through their work with waste. The author states that waste pickers are considered an undesirable presence in the streets and that waste collection is seen as archaic and dirty. This situation undermines the effectiveness of policies intended to support waste pickers, who are thereby compelled to engage in continuous negotiations to secure access to waste materials.

Cases in Europe

In Europe, there was no acknowledgement of the need to legalize and assimilate the long-standing informal waste recycling labor into the formal system until quite recently. As a matter of fact, it continues to be a topic equally complex and far from the agenda of public and private actors in the waste management sector, who still perceive informal waste pickers as a group that has no place in managing waste (Scheinberg et al, 2016). In European cities, waste pickers are perceived as marginalized people. The arrival of undocumented immigrants

or the impoverishment of specific socioeconomic groups who resort to waste picking and trade of recycled materials or second-hand products to make a living “make visible once again a precariousness that we thought as minimal and regulated” (Milliot 2010: 18). Paradoxically, while in some countries there seems to be an improvement in the working conditions of waste pickers, especially in the areas dedicated to waste sorting and valorization, and in regards to their integration into the municipal waste management system (Gutberlet, 2010; Schamber and Suárez in this book), in other places such as cities in Europe and North America, waste pickers still suffer from social stigma and distrust (Milliot, 2010; Olivera, 2015; Florin and Garret, 2019; Peres, Chemas Rendón, Guien, and Havard dit Duclos in this book). This stereotype is especially worse for those of Romani ethnic origin and new incoming migrants, and it is connected to representations of these subjects as a cultural, social, and economic minority which is both impoverished and unproductive.

The scope of European cases discussed in this book is not broad enough to outline a continental perspective on the matter. The presence of African migrants among scrap metal waste pickers in Barcelona adds the illegality of the foreigner to the public perception of waste pickers, which already has features of informality and vulnerability. Consequently, African migrants, mostly from Senegal, live in constant persecution, stigma, eviction, and precariousness. Similar situations can be found in other capital cities of Europe. On the other hand, it is worth noting that there was an emergence of markets for the trade of second-hand products, e.g., the *biffin* community marketplace in Paris. These endeavors receive support from academic groups and NGOs such as the association called *Amélior*, comprised of pickers and traders of waste, and activists, or *Rues Marchandes* (in French, market streets), composed of independent researchers and social workers who provide support to waste pickers with the aim of spreading information about recycling and sale (this particular association has contributed to the study of the case of Paris, France, further explored in the article authored by Jeanne Guien and Elise Harvard dit Duclos contained in this book). In Turin, Italy, the association called *Vivi Balon* managed to transform an informal market place (referred to as free trade zone) which emerged as an extension of the largest flea and antiquity market of Balon, into a popular market for street vendors who get their goods from foraging basements or from scavenging trash containers (Rosa, Cirelli, 2018). Another association operating in Italy that provides support to different projects and initiatives is *Occhio del Riciclone*, bringing together waste pickers and traders, college students, and members of civil society to create spaces for trade

with informal actors (Occhio del Riciclone, 2018). Nevertheless, some research studies have shown that informal waste pickers in Europe are excluded from legal recycling niches and increasingly collide with the formalized urban waste management systems: i.e. packaging recovery schemes, formal re-use enterprises, and extended producer liability (Scheimberg et al., 2016).

In addition, there are groups or communities of Romani ethnic origin whose activity shifts from scavenging for products and materials in trash containers to taking part in recycling activities, subject to the demands of the city. Unlike other groups performing similar activities, and while taking part in urban recycling processes by recovering objects, these groups choose not to identify themselves as waste pickers (Rosa and Cirelli, 2018).

The following is a summary of the articles in this book discussing European cases

In *Senegalese scrap metal waste pickers from Barcelona (Spain): between urban survival and garbage-commodities*, Mauricio Chemas Rendón presents the results of a ethnographic research study carried out with a group of undocumented Senegalese scrap metal trash pickers working in Barcelona (Spain). Despite their marginal position (described by the author as “residual”), this group of immigrants, mostly single men, manages to carry out a waste recycling activity through which they can at least subsist. In this way, they have created a solidarity network among them, making it possible to recreate living and work spaces that, though precarious, are organized based on their ethnic origin: the Sunu Village (defined by the author as “an actual informal system of collective survival”). Mauricio Chemas Rendón emphasizes how these waste pickers suffer not only due to informality, precariousness, vulnerability, and marginalization but also due to a structural type of social invisibilization. It can be defined as “low level visibility”, meaning that while being visible to society when performing their work on the streets, pushing supermarket carts to carry huge materials and items, they remain invisible in terms of integration into formalized or legal collection systems. In sum, they are visible to a certain extent through their recycling work, but this activity places them on the marginal end of a waste recovery chain that is described as complete and self-sufficient in other European cities. These waste pickers possess extensive knowledge of their territory of action and apply a particular set of skills and strategies in the processes of recycling scrap metal waste. In regards to their relationship with authorities, they are pursued due to their undocumented status, and because they reside

in occupied places using abandoned buildings or industrial spaces to live and carry out their work (which includes sorting, classification and, on occasion, collection of recyclable materials), they are frequently evicted by the authorities, forced to move frequently from one place to the next, which increases both their precariousness and their marginal status. The article is an account of how the local government has tasked an association to gather a group of marginalized scrap metal waste pickers and help them organize into a cooperative, and of the poor results of this initiative. Finally, the article provides a description of the “residuation” process of the scrap metal waste pickers: while recovered and recycled materials go through many processes of revalorization, through which waste is converted into goods (Appadurai, 1986), scrap metal recovery workers taking part in this process of waste resignification and refetishization, end up being regarded as “waste material in structural terms, people who just don’t belong [...] with no definable social position”.

In the article *From “nuisance” to “social acceptability”? 15 years of biffins’ struggles for second-hand markets in the Paris area*, Jeanne Guien and Elise Havard dit Duclos provide an analysis of the claims of the so-called *biffin* community (men and women who take part in *la biffe*, a French term for the recycling and trade of discarded items). For the past 15 years, informal street markets have multiplied, sparking protests from residents, particularly due to their association with poverty markets and the negative connotations that they carry: degradation of public space and trade of stolen or dangerous items. The response of local authorities has been to repress street activity, by harassing of waste pickers and traders through police operations and confiscation of goods. The Amélior association, composed of several sellers, residents, and committed citizens (including members of the academic circles, with a strong presence of experts in human sciences), has provided continued support to the legal organization of the activity and raised public awareness on the environmental value of recycling. In this regard, the role of scientific research, especially of action-oriented research and researchers’ support for the demands of waste pickers, has been crucial in the deconstruction process of the social stereotype associated with these actors and their activity, and in the planning of strategies aimed towards the improvement of the political, social and economic conditions of *la biffe*. The impact of the COVID-19 pandemic on waste pickers has caused many established marketplaces to shut down since then, because during the many stages of the lockdowns, the recovery of objects and materials was declared a risk activity due to possible transmission of disease. Because of this situation, the Amélior association has organized several plans involving food

assistance. Many waste pickers of Romani origin have returned to their country of origin. Most of these workers had to look for other sources of income and self-sufficiency.

Cases in Asia

As it occurs in Europe, the abovementioned cases do not help identify clear trends. In broad terms, there are two facts which are highlighted: the presence of recovery waste pickers in many Asian cities and the fact that the recovery work is absorbed not only by local industry but also by the global market. In addition, some regions of Asia receive waste from other continents.

The case of Istanbul presents a turning point between Europe and Asia. In a context of significant recovery activity, public policies concerning waste management were crossed by the unfinished annexation of Turkey to the European continent. Said policies were supposed to comply with the European Union standards, and in that context, a privatization process on waste management started at the same time that the recovery activity was limited. Regarding the recovery in Istanbul, there is a strong presence of migrants from some European countries (Romani ethnic groups coming mainly from Romania and Bulgaria) and Asians close to Turkey (Kurds, Afghans) or from internal regions (Central Anatolia) displaced for economic or political reasons. The recovered materials are absorbed by the local industry.

In January 2018, China began to close its doors to waste imports from foreign countries (different types of plastics, car parts, paper, textiles, and even steel or wood scrap), which has caused an accumulation of materials for recycling in high-production countries. These import restrictions have displaced European waste streams to other Asian countries. By the year 2019, for example, approximately 2 million tons of plastic waste were shipped to countries such as Turkey, Malaysia, Indonesia, Vietnam and India. In 2015-2016, before these restrictions, nearly double these amounts were exported mainly to China and Hong Kong. Some importing countries in Southeast Asia have followed China and returned to Western countries the waste they had disposed of. By the end of May 2019, Malaysia returned 3,000 tons of waste to 14 exporting countries. Shortly after that, Indonesia did the same, shipping back waste containers to Canada, the United States, and Australia, alleging poor quality of the plastics sent, lack of adequate permits, risks to health and the environment, and rejection by the inhabitants and organizations.

In Europe, countries that are paradoxically considered environmentally virtuous, such as Luxembourg, the Netherlands, and Germany, top the list of the largest exporters of plastics. This practice is no longer possible: as of January 1, 2021, European regulations have prohibited Member States from exporting their unsorted plastic waste to non-OECD countries. This provision aims to end the transfer of waste to countries with more competitive treatment costs, thanks to less restrictive environmental regulations or less monitoring by public authorities, and, above all, it aims to hold the European member states responsible for the destination of the waste they produce. One of the effects of the closure of imports is that some cities, unable to take on the treatment of new waste, have simply stopped recycling or resorted more to incineration. Regarding the movement of WEEE, the Basel Convention, since 1992, regulates the cross-border transit of hazardous waste through a consent procedure. The Convention left open a debate on what is waste and what is not, since it can be reused or recovered. In 2006, European Regulation No. 1013 prohibited exports of waste destined for disposal to countries outside the EU and hazardous waste destined for recovery, except in cases where waste is sent to countries subject a OECD decision. However, this does not prevent approximately 15% of used WEEE from being exported from the EU and 8% of that generated in the US (Forti et al. 2020), revealing widespread illegal trade of WEEE with Africa and Southeast Asia.

The following cases from Asia are presented

In *Recyclable waste management in Turkey: waste pickers in Istanbul at the intersection of formal and informal waste recycling*, Irem Nihan Balci analyzes the position of informal waste pickers and their interaction with collectors and public authorities. The research consisted of an ethnographic study conducted between 2017 and 2019. The author highlights that public policies in Turkey do not protect waste pickers. Indeed, due to Turkey's expected accession to the European Union (which ultimately did not happen), efforts were made to privatize waste management and to ban the informal sector. In practice, however, this led to a tolerated form of illegality. Waste recovery begins with informal waste pickers, continues in warehouses and materials recovery facilities, and ends in the industry. There are permanent and seasonal waste pickers. Some warehouse owners allow waste pickers to stay temporarily in their facilities, favoring paternalistic relationships between waste pickers and warehouse owners. In Istanbul, waste recovery activity is carried out by people from different

ethnic and national groups, Romanies, Afghans, Kurds, Syrians, all migrants for political and economic reasons. The author highlights that the informal collection activity is carried out by men, except in the case of the Romanies, an ethnic group who is strongly stigmatized, where men and women participate.

In *Contesting urban metabolism: struggles over waste-to-energy in Delhi, India*, Federico Demaria and Seth Schindler carry out a situated analysis of the concept of political ecology in the context of an environmental conflict caused by the installation of waste-to-energy incineration plants in New Delhi. The concept of urban metabolism is presented with different approaches, emphasizing the co-evolution between flows of materials and political economy. This article describes the waste management system and the privatization process initiated in the 2000s. The authors state that waste management policies have been oriented towards urban planning and social discipline. The privatization process involved concentrating waste management in the hands of private companies and implementing a waste incineration method. By that time, the urban waste pickers were organized into two union groups. Their demands and protests for access to waste converged on a claim of environmental NGOs regarding ecological risks. On the other hand, citizens from the middle class considered privatization positive at first due to the persistent accumulation of waste, but later perceived the risks of waste incineration and organized themselves to resist. The authors state that conflict modifies urban metabolisms, which are areas of socialization and confrontation.

In *"Surabaya Green & Clean": genesis of a community-based, semi-decentralized waste management model*, Jérémie Cavé and Warma Dewanthi describe and analyze the background and main characteristics of the program that is implemented in one of the most important cities in Indonesia, based on bibliographic and field studies. Notably, the initiatives that gave rise to this public policy originated during the crisis caused by the untimely judicial decision to close the only final disposal site for waste, which caused the city to be flooded with garbage for three weeks. The authors also highlight the importance of continuous assistance from the private sector in the form of corporate social responsibility actions until the local government itself takes charge of this situation. The neighborhood-wide scale of the innovative actions in terms of waste classification (both for recycling and composting) responds to the very features of this urban network, and it enables the active participation of civil organizations within the territory. In this sense, and in addition to reasons related to environmental awareness, it is also worth mentioning the fact that citizen participation allows noticeable savings, which means reducing the price of their water or electricity bills.

Cases in South America

According to reports from the ILO, informal employment in Latin America reaches 50% of the population. Additionally, the document *Waste Management Outlook for Latin America and the Caribbean*, published by the UN Environmental Program (UNEP), shows that waste collection services cover only 7% of the population, and 27% of total waste is disposed of in open dumps (around 145,000 tons per day). With regards to waste composition, 50.7% is estimated to be organic. Furthermore, the estimated per capita waste generation is 1 kg per day and according to future projections on consumption, it is bound to increase by 23% between 2014 and 2050.

The articles compiled in this book dealing with South America concur that the matter of recycling and waste pickers became of public interest in the first two decades of the twentieth century. Also, in this period, waste pickers and their activity thrived in the face of neoliberal economic recession. This kind of countercyclical development of recycling with respect to periods of economic crisis is a trait of this persisting phenomenon. The resurgence of waste pickers has found a new political context defined by the extension of civil rights and the recognition of minorities. Accordingly, recognition and expansion of recovery workers is in accordance with the rise of the international environmental agenda, which prioritizes urban solid waste collection and recycling.

Thus, in the cities of Buenos Aires (Argentina) and Bogotá (Colombia), the current issue of waste pickers and their claims for a legal framework has been at the center of legal controversies and heated debates that ultimately foster the recognition of waste pickers and their claims. The surge of regulatory frameworks around the world regarding this activity is noteworthy. In some cases, such as Brazil, regulation was based on preexisting national policies, while in others, such as the countries previously mentioned, it originated from local laws. The situation in the intermediate city of Cuenca, Ecuador, explored in one of the articles in this book, mirrors that of many other cities where legal frameworks for waste-picking activity have been established. Regulation addresses multiple aspects, from the nuisances of the activity to the integration of waste pickers into the urban cleaning and waste collection services. All systems, even the most inclusive ones, combine several formal and informal work practices. Throughout twenty years of regulation, laws concerning waste management have remained the same despite changes in government. During those administrations leaning towards conservative and privatization-oriented policies, waste pickers were strongly questioned about the efficacy of their

recycling processes. In general, when the discussion is narrowed down to the technological and logistical aspects of the activity, there are more questions and concerns about the issue. However, when the discussion also covers labor inclusion and citizen awareness, the arguments for the cause of waste pickers gain strength.

As the organizational core of the activity, cooperatives of recyclers have consolidated their position in the business. Many of them are under co-management agreements with local governments concerning waste classification or collection facilities in different areas of the city. In the streets and dumps, members of these cooperatives coexist with independent collectors (not integrated into the system). The number of cooperative members is relatively fixed and contingent on the capacity of collection and trade, and the agreements reached with government bodies in charge of assigning work areas, incentives, public subsidies and additional contributions. The number of independent waste pickers is variable, and depends on the economic situation, as it increases significantly when demand for formal and odd jobs decreases.

In some South American countries, many second-tier organizations have been consolidated, such as the National Movement of Recycled Material Collectors (Brazil), the Federation of Waste Pickers and Horse Cart Drivers (Argentina), the National Movement of Grassroots Recyclers (Chile). The emergence of these associations has strengthened the capacity of political action and involvement of waste pickers in local policy-making processes. In addition, there has been an impact on both regional-level supranational organizations, such as the Latin American and Caribbean Network of Waste Pickers (*Red Lacre*), and international-level ones, such as the International Alliance of Waste Pickers. The presence of the academic sector is important for monitoring organizational processes, performing diverse diagnostic research processes, and producing data useful for management. An example of this is Argentina's recently created Network for Research and Action on Waste (*RIAR*, for its Spanish acronym), comprised of more than 100 researchers and academics who have a passion for promoting and fostering inclusive recycling.

The materials recovered and sorted are intended for the domestic market as inputs for industrial processes. In certain industrial sectors such as paper and plastic, recyclable materials from waste pickers are the main source of raw material. Inter-Latin American market networks of recyclable materials are scarce. Specific inputs, such as PET or WEEE, have international markets in Asia and Europe.

The following is an introduction of the South American cases discussed in this book

The inclusion system for urban waste pickers in solid waste management in the Autonomous City of Buenos Aires (2008–2020) by Pablo Schamber and Francisco Suárez. Since 2014, a waste picker formalization system has been implemented in the Autonomous City of Buenos Aires. According to the authors, it surpasses any other existing program worldwide. Since 2008, in this area, home to the federal government, with three million inhabitants and a surface area of 200 km², the growing relationship between associations of waste pickers and the city council has led to the creation of twelve cooperatives, employing almost 6,000 urban waste pickers, who perform differentiated sorting of dry and organic waste (both from common households and drop off points of large generators alike) throughout the city. Additionally, this has allowed cooperatives to recycle materials by managing specialized facilities known as “green centers”, and they operate independently on how they market the recyclable materials to third parties. Based on a methodology grounded in participant observation and interviews with waste pickers, managers, and technicians of cooperatives, as well as city council officers who served during different administrations of the City Government of Buenos Aires (“GCABA”), this article provides details of the main characteristics of this system.

In *Perspectives for the socio-productive inclusion of waste pickers in the Brazilian recycling scenario*, Jutta Gutberlet and Carlos Henrique A. Oliveira provide an analysis of the current state of implementation of the National Waste Management Act in Brazil, created to support inclusive waste management. The authors, with more than 20 years’ experience aiding waste pickers organizations and analyzing data production techniques carried out with the active participation of waste pickers, show that since the federal government launched the waste and citizenship (*Lixo e cidadania*) nationwide program in 1998 and until the approval of the abovementioned Act in 2010, collaboration between local governments and waste pickers organizations has been scarce. Due to the lack of current support from local government and the absence of political initiative from municipalities, regions, and states, waste pickers continue to challenge and question governments and their waste management systems.

In *Mapping of the recycling chain of Criciúma (SC), Brazil: actors, links and relationships*, Mário Ricardo Guadagnin, Viviane Kraieski de Assunção, Sabrina Baesso Cadorin, Leandro Nunes, Danrlei De Conto present the results of an interdisciplinary research, aiming to build a map of the chain of actors

involved in recycling in the municipality of Criciúma, in Southern Santa Catarina, a state in Brazil. In this municipality, selective collection is carried out by a company hired by the municipality, and the collected material is sent to a waste pickers association. This organization faces several problems, such as failures in administrative management, lack of adequate infrastructure, high turnover of its members, and dependence on some buyers of recyclable materials. These difficulties affect the already precarious working conditions and low income of the workers. In addition to the waste pickers who work in the association, it is common to see independent waste pickers on the streets of Criciúma who collect different types of waste. There is no official data on these informal workers, who are not considered by municipal management. Through field research, with on-site visits, observations, and interviews, it was possible to map the recycling networks in Criciúma, identifying the social actors, their connections, and their spatial location in the city. Thus, cartography made it possible to classify the main characteristics of the actors according to the type of material they work with, the functions they perform, and the hierarchical relationships they establish among themselves. Notably, recycling of materials is carried out by generating processes of invisibility and informality of certain social actors, and the recycling chain is maintained through the appropriation of the precarious work of waste pickers. Regarding employment, the chain can be seen as a pyramid, with waste pickers, who act as waste recovery agents, at the bottom; the middlemen and classifiers in the middle; the revalorization agents, and finally, at the upper part, the recycling industry made up by the waste processors. The criteria for classifying the companies at different levels of the recycling chain considered company size, company infrastructure, equipment used, materials collected, received and commercialized, in addition to (inter) dependence relationships between the links of the recycling chain.

In *Formalization of waste pickers in Bogotá: between optimization and change in the waste management system*, Luisa Fernanda Tovar y Roger Camilo Alfonso Leal analyze the main obstacles in the implementation of Bogotá's policies for the inclusion and use of waste, through a normative analysis of public policy that was carried out during the 2012-2018 period. In order to carry out these studies, semi-structured interviews were conducted with officials, academics, and members of waste picker organizations in the process of formalization. The authors study the implementation of Executive Order No. 596 of 2016, which establishes the process of formalizing the recycling population as providers of the public cleaning service in the exploitation activity. They observe that, in terms of efficiency of the Integrated Solid Waste Management (ISWM) (measured

according to the amount of valorized waste), the results are not satisfactory. Although the amount of tons of reused materials increased, the number of waste disposed of in the sanitary landfill continued to grow. They warn that in the case of Bogotá, previous governments have had an opposite vision on waste management. The Zero Waste Policy (2012-2015) allowed waste pickers, supported by an organized social movement, to gain significant recognition thanks to political and legal advocacy processes. However, since 2016, there has been a setback caused by the adoption of policies that tend to stabilize the linear economy, since the inclusion process of the recycling population was affected, and waste pickers were not recognized as fundamental actors for transforming the system towards the valorization of waste.

In the article *Intersectionality and recycling in Cuenca (Ecuador): living conditions, work and exclusion*, Marco Ambrosi de la Cadena, Santiago Cajamarca Cajamarca, William Bueno Sagbaicela, and Santiago Jimbo Días analyze the reality of recycling work in the city of Cuenca, Ecuador, considering the subordination and living conditions of primary recyclers, mainly those related to: feminization of work, precariousness and impoverishment, family work, age and organizational and gender roles. With this aim, they surveyed 242 recyclers and conducted focus groups with the seven associations of recyclers in Cuenca. This allowed them to conclude that the general characteristics of the primary recycler in the city of Cuenca are as follows: a woman, not associated with any organization, 50-year-old, with primary education, four children on average, with two relatives who also collect, who has a monthly income average of 114 dollars and collects around 473.07 kg monthly, living in rented housing, without employment contract or social security and with regular health problems. This empirical recognition contradicts the concept of 'primary recycler' that emerges from local laws on recycling and shows that the implementation of such laws would provide no benefits.

Comparisons

Recycling in Africa, South America, and Asia has developed independently and existed prior to the establishment of public policies that promote employment and recycling. This situation presents challenges for government management, as it involves activities that can significantly impact urban, social, economic, and environmental policies.

In both Africa and South America, authors depict the structure of recycling actors as a pyramid, with waste pickers at the base, collectors in the middle, and industry plus large waste traders/exporters at the top. Within these chains, varying degrees of labor, commercial, and productive informality coexist. A higher degree of formality, regulation, and recognition of recycling is evident in South America, in a context characterized by significant levels of precariousness, social vulnerability, and considerable gaps between the more formalized groups and those excluded from social policy.

In most of the analyzed cases, a division can be perceived between waste management models centered on technological improvement and those that prioritize formalization of waste pickers into waste collection and sorting plants that demand an intensive workforce. This has stirred several heated debates around the installation of waste incineration and energetic revalorization plants in New Delhi and Buenos Aires, cities where waste pickers, perceiving these initiatives as a potential threat to their access to high energy recyclable waste (such as plastics, paper and cardboard) have voiced a firm opposition, with the support of environmentalist NGOs.

The issue is further shown in different conflicts with local authorities. Hostilities related to the presence of waste pickers in cities where the activity is forbidden are frequent. One of the main controversies is the use of animal traction vehicles (specifically the use of horse-drawn carts). In cities where the activity has been legally forbidden, it is a somewhat tolerated illegal activity, though strongly stigmatized. However, when the activity is recognized by law and public policy, waste pickers gain empowerment and a positive image by being associated with carrying out urban and environmental services, which are usually recognized as socially inclusive recycling.

In most cases, praise should be given to the creativity of waste pickers, which is aimed at improving materials collection and creating new ways to reuse items. When the end-product of the recycling process is mostly used as an industrial supply, innovations focus on increasing cargo capacity and improving the logistics of collection, sorting, preparation, and sales. Innovations of this type are commonly done in South America, e.g., improving carts, introducing new clients, removing labels from some packages meant for recycling, to name a few. Insofar as recycling aims towards reusing or selling the product, innovation is focused on new ways of using the articles and their material and symbolic redefinition. In such cases, recycling can be related to a craft: shoe-making, tailoring, blacksmithing, and so on, as it happens in some African cases, such as Madagascar and Cameroon. However, in the case of the *biffin*

community in Paris and several undocumented immigrants or waste pickers of Romani ethnic origin, the scope of reuse of the recycled object is restricted: once a product is collected (either from trash containers, sidewalks or buildings under construction) it can be repaired, cleaned and sold directly (in street markets, for instance) or recycling can involve, as is the case with scrap metal waste, the disassembling of a product and the extraction of raw metal from it (iron, copper and so on) and then sold by the pound to or, if specific parts were found during the process, as spare parts to scrap wholesalers.

The analysis of the different texts shows the spatial organization of recycling, structured around personal itineraries or specific collection routes, as well as the areas used for sorting and storage. Firstly, there are the practices and forms of appropriation of the city through daily routes taken to search for, collect, or sell recovered materials or objects. These routes are planned using an itinerary and considering the relationship of waste pickers with other social actors. Collection routes are either created based on a criterion of proximity or in connection with the areas of residence (Barcelona), but also based on the relationship with residents and businesses of certain neighborhoods (Cairo) or, as it occurs for those waste pickers formalized into the waste collection system, according to specific areas assigned for waste collection (Buenos Aires). These itineraries also contain the routes to waste dumpsites, frequently located near vulnerable areas where waste pickers coexist with and live off waste.

Secondly, there is a neighborhood-wide scale where the spatial dimension of the activity is associated with the places where the activities of classification and preparation of the materials for their trade are carried out, which are the same as the residential areas of waste pickers. It is an activity that can have a negative environmental impact, since classification implies discarding and accumulation of waste. These are negative external aspects of work, which often affect the lives of waste pickers and represent health risks and increased vulnerability for people living in these areas. The same applies to sales locations (warehouses, storehouses), which involve the movement of materials and carts that may lead to local micro-conflicts. The itineraries and sorting sites leave traces across the city, consolidating actors, circuits, transport flows, storage sites, and markets in certain cases.

On a national and international scale, waste flow outlines both routes and spaces. At the national level, these ones correspond to the places where the treatment facilities and places are located (sorting and recycling of certain materials, landfills or incinerators) or where points of departure to other countries (ports) and sales are negotiated. Lastly, it is at this level (export) where the

national policy is defined and conditioned by economic, technical and social circumstances of a different order. It is a macro scale (international) formed by the waste flows that circulate between the places of generation and those of final disposal or use as recycling inputs. It is at this level that the issue of distributing environmental externalities arises (for example through exports of waste from Europe to Asia or Africa). The process of internationalization of the waste economy highlights the interdependence between the territories that generate waste and those that receive it. For example, the cascading closing of Southeast Asian markets to waste from Europe, America, Australia or Japan is putting pressure on the recycling sectors of exporting countries and challenging public policies aimed at waste recovery (as seen in decisions to reduce the share of waste sent to incineration).

The aspirations, claims and struggles of waste pickers are uneven. Those who have already claimed the streets and occupied positions in public waste management are actors who seek to consolidate themselves in those places and climb towards the consolidation of second-tier, national, and international organizations (*RedLacre*) (Spanish for “Latin American and Caribbean Network of Waste Pickers”). They have representatives in the legislative power through which they promote containers and packaging laws oriented towards inclusive recycling, and they usually participate in various events linked to waste management or related to environmental problems. The groups who are most excluded seek access to the city and to its waste, and do not wish to be stigmatized or symbolically identified with the waste they handle. In such cases, they are far from establishing themselves as a craft-based organization, even though eventually there may be rapprochement with members of civil organizations or the academic sector. Precisely, allying themselves with these sectors of society (NGOs, universities) or interacting with public authorities, there is a symbolic capital that connects them with the environmental, social, and economic function they perform.

In South America, there is coexistence between organized groups that discuss public policies concerning waste management and waste pickers emerging from periodic economic crises. The most empowered groups support the gains made in growth periods to preserve the rights already conquered. The passage to another period of organizational and economic consolidation begs the question of whether there will be continuity or rupture regarding their stories of origin.

The abovementioned texts reflect how waste pickers from Africa, Europe, South America, and Asia have been forerunners in recovery and recycling practices. They are part of a particular historical process that links self-generated

employment with environmental care, a process that calls for reflection and involvement.

References

- Africain Clean Cities Platform (2019) AFRICA SOLID WASTE MANAGEMENT, DATA BOOK 2019.
- Appadurai, A. (éd.), (1986) *The Social Life of Things. Commodies in Cultural Perspectives*, Cambridge University Presse.
- Debout Lise (2012) *Gouvernements urbains en régime autoritaire: le cas de la gestion des déchets en Égypte*, thèse de doctorat en Géographie, Université Lyon 2.
- Desvaux P. (2009) *Les impacts de la délégation de la gestion des déchets au Caire sur la filière informelle des ordures*, Master de geografia, Université de Tours.
- Emenike, C. et al *Waste Management in Africa: An Invitation to Wealth Generation in Proceedings of the International Conference on Waste Management and Environment, 2013*, ICWME, University of Malaya, Kuala Lumpur, Malaysia, 26-27th August, 2013.
- Florin B., Garret P., (2019) “Faire la ferraille” en banlieue parisienne: glaner, bricoler et transgresser”, *EchoGéo [En ligne]*, 47 | 2019, mis en ligne le 21 avril 2019, consulté le 19 juin 2020.
- Forti V., Baldé C.P., Kuehr R., Bel G. (2020) *Observatorio Mundial de los Residuos Electrónicos: Cantidades, flujos y potencial de la economía circular*. Universidad de las Naciones Unidas (UNU)/Instituto de las Naciones Unidas para Formación Profesional e Investigaciones (UNITAR) – coorganizadores del programa SCYCLE, Unión Internacional de Telecomunicaciones (UIT) y Asociación Internacional de Residuos Sólidos (ISWA), Bonn/Ginebra/Rotterdam.
- Hoornweg, D; Bhada-Tata, P. (2012) *World Bank Report 2012 WHAT A WASTE. A Global Review of Solid Waste Management* March 2012, No. 15.
- Milliot V (2010) *La ville informelle ou le travail des marges*. In: Milliot V and Tastevin YP (eds) *Les archipels de la goutte d’or. Analyse anthropo-*

- logique d'une "métropolisation par le bas". Cultures et territoires en Ile-de-France Project. Report. Paris, pp. 7-59.
- Ngnikam E, Tanawa E., (2006) Les villes d'Afrique face à leurs déchets, Université de Technologie de Belfort-Montbéliard, Belfort.
- Occhio del Riciclone (2018) Rapporto Nazionale sul Riutilizzo, Occhio del Riciclone, UTILITALIA., 164 p.
- Olivera M., (2015) "Insupportables pollueurs ou recycleurs de génie? Quelques réflexions sur les "Roms" et les paradoxes de l'urbanité libérale", *Ethnologie Française*, XVI, 2015, 3, p. 499-509.
- Pierrat A., (2014) Les lieux de l'ordure de Dakar et d'Addis Abeba. Territoires urbains et valorisation non institutionnelle des déchets dans deux capitales africaines, Tesis de Geografia, Université Paris 1 La Sorbonne.
- Raoulx B., (1999) "La pratique de l'espace urbain des populations marginales: l'exemple des "binners" de Vancouver ", *Espace, populations, sociétés* 17(2): 353-357.
- Rosa E., Cirelli, C., (2018) "Scavenging: Between precariousness, marginality and access to the city. The case of Roma people in Turin and Marseille", in *Environment & Planning A*, 2018, Vol. 50 (7), pp. 1407-1424.
- Scheimberg Anne, Jelena Nesić, Rachel Savain, Pietro Luppi, Portia Sinnott, Flaviu Petean, and Flaviu Pop (2016) "From collision to collaboration—Integrating informal recyclers and re-use operators in Europe: A review", *Waste Management & Research* 2016 34:9, 820-839.
- UNEP (2018) Future of Waste Management in Africa. United Nations Environment Program, Nairobi, Kenya.
- Yoshida (2018) Situation of Municipal Solid Waste Management in African Cities - An Interpretation of the Information provided by the First ACCP Meeting in The Second Meeting of African Clean Cities Platform (ACCP), June 2018, Rabat.

The **Cuestiones Metropolitanas** collection brings together a wide range of academic works focused on issues related to urban conglomerates and, in particular, the Buenos Aires Metropolitan Region. The collection includes texts that address topics such as urban planning, ecology, local governance, sociology, and anthropology, all applied to the study of the social, economic, and environmental challenges of the metropolitan area.

The *Recycloscope* collection constitutes a living archive of the emergence and evolution of social studies on waste and recycling in Argentina and Latin America. Each edition offers a curated selection of the most recent and relevant academic production, highlighting new themes and debates as well as theoretical and methodological perspectives that shape this novel field, organized around the distinctly interdisciplinary object of discarded matter. This seventh edition is no exception, as it reflects, for instance, the growing pervasiveness of the Circular Economy model and the productivity of approaches such as political ecology, intersectionality, and image-based analysis. Moreover, *Recycloscope VII* stands out for pushing the boundaries of the field to a transcontinental scale by incorporating localized experiences from Africa, Asia, and Europe. It constitutes an invaluable contribution to weaving together a South–South perspective that underscores the advances achieved in terms of sustainable development and inclusive management across Latin America, while also opening the door to exploring the transfer of locally developed management practices and technologies to new contexts.

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