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Waste Pickers' Formalisation from Bogotá to Cartagena de Indias: Dispossession and Socio-Economic Enclosures in Two Colombian Cities

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Abstract: Colombia is considered a pioneer in inclusive recycling in Latin America and the state-led formalisation policies are considered a referent for the socio-economic inclusion of waste pickers beyond the region. Nevertheless, more than 60,000 waste pickers in Colombia are struggling to remain in place despite these inclusive recycling and formalisation policies. This paper examines the implementation of formalisation policies and their consequences for the population of waste pickers by comparing evidence from two Colombian cities: Bogotá and Cartagena de Indias. The paper draws on extensive qualitative community-based research methodology *with* waste pickers in both cities guided by an interdisciplinary epistemological position to support Colombian waste pickers' political struggle for recognition from a theoretical reflection. This paper shows how formalisation policies became a mechanism of manifold dispossessions in both cities. This paper categorises three forms of enclosures faced by waste pickers: (a) material and socio-economic; (b) bodily and spatial; and (c) political and organisational. Finally, this paper concludes by urging to consider the situated social, political, and cultural facets of waste pickers' labour to enhance grassroots reflections on how to achieve greater levels of social justice and inclusion.

Keywords: waste pickers; waste labour; formalisation; cooperative recycling; dispossession; enclosures; Colombia



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1. Introduction

Waste pickers in many cities of the Global South have historically carried out the labour of collection, classification and recovery of recyclables informally, often constituting the “major recycling force” [1] p. 275. However, for decades their labour was largely overlooked by official waste management schemes and waste policies repeatedly exacerbated their exclusion, criminalisation, or repression [2]. In response, informal waste pickers organised to resist and secure their access to waste materials. The importance of waste pickers' labour for urban sustainability [3], tackling the SDGs [4], or supporting the circular economy [5] gained attention internationally in recent years. The potential of integrating the informal recycling sector to official waste management systems was increasingly recognised [2,6–8]. Formalisation policies and programmes have progressively been implemented, targeting informal waste pickers and integrating them into official municipal waste management systems, while highlighting the potential to considerably improve their livelihoods and working conditions [9]. Nevertheless, recent research shows that in practice formalisation policies often fail to provide these intended benefits to the population of waste pickers [9–11]. While waste has become a new commodity frontier over the past decades globally [12,13], despite inclusive recycling policies, these socially and economically marginalised populations have been confronting renewed displacements and manifold dispossession processes.

Colombia is considered a pioneer in inclusive recycling in Latin America [14], together with Brazil, and the state-led formalisation policies are considered a referent for the socio-economic inclusion of waste pickers beyond the region. Although the country has been implementing formalisation policies aiming to integrate waste pickers cooperatives into municipal waste management systems since the past decade [15], these policies have not been successful in securing a livelihood for a large number of waste pickers. More than 60,000 waste pickers in Colombia are struggling to remain in place at times when inclusive recycling plays a central role in the country's future economic development strategy as it aims to move towards a circular economy model, and notably to increase the rate of recycling to 17.9% by 2030 [16]. In a country where the majority of the waste produced goes to sanitary landfills [17], waste pickers will play a key role in recycling and increasing these rates in the future.

Given this context, although several scholars have provided in-depth accounts of the Colombian formalisation process, the mechanisms that sustain the ongoing dispossession of waste pickers amidst the formalisation policies at the country level remain unexplored [17]. This paper focuses on the complex reality of the dispossession process unfolding at the microscale in two Colombian cities to develop a better understanding of the diverse set of processes hampering waste pickers' access to the intended benefits of formalisation policies. The research asks the following questions: Who benefits from the formalisation policies? Additionally, what are the consequences of the implementation of formalisation policies for the population of waste pickers?

We examine the implementation of formalisation policies and their consequences for the population of waste pickers by comparing evidence from two Colombian cities: Bogotá and Cartagena de Indias (Figure 1). This paper draws on a qualitative community-based research methodology *with* waste pickers in both cities guided by an interdisciplinary epistemological position to support Colombian waste pickers' political struggle for recognition from a theoretical reflection.



Figure 1. Localisation map. Source: authors.

Prevailing narratives in development and policy circles portray formalisation policies as improving waste pickers' livelihoods, thus conceptualising formalisation as a linear process allowing to step out of labour informality. Despite the celebration of formalisation policies for the improvement of recycling rates and waste pickers livelihoods, recent research shows that various context-based barriers, such as the political and legal frame-

work [11,18–20], or the lack of empowerment of the population of waste pickers [10,11], hamper the effective implementation of formalisation policies in the long run. Waste pickers face risks of exclusion and deterioration of their working conditions [21–23].

A broad critical literature further challenges normative assumptions on waste pickers' labour by questioning formal/informal binaries of work and value [24–27]. Waste studies research argues that new mechanisms of exclusions and enclosures unfold despite the implementation of formalisation policies. In his research with waste pickers in the city of São Paulo in Brazil, Rosaldo showed that after 15 years of inclusive recycling policies, less than 1 percent of the city's street waste pickers had been integrated into formal waste management and thus they continued to work informally on the streets facing income decline and increased competition to access materials [21] p. 68. In Uruguay, O'Hare shows how the formalisation process has pointed to cleavages towards the waste pickers who continue to work in the informal sector putting them at risk of dispossession [24]. Similarly, in Johannesburg, South Africa, Samson questions reclaimers' inclusion initiatives and argues that integration "is a mechanism of border control designed to eject and dispossess reclaimers rather than include them" [28] p. 60.

In line with neoliberal state reforms worldwide, neoliberal approaches of waste governance and the privatisation of waste management systems have been documented as a triggering factor for the dispossession of waste pickers [29–31]. In Cairo, for instance, the privatisation of the waste management system threatened the livelihood of waste pickers who provided a door-to-door waste collection service in the city. These profound changes led to renegotiating their role in the city's waste management system and exacerbated inequalities and existing tensions amongst the community [32]. In urban India, recent research has pointed to the consequences of the privatisation of waste management together with the adoption of technological solutions, such as waste-to-energy, that threatens the livelihood of waste pickers [13,29]. In Brazil, grassroots organisations, such as waste pickers cooperatives, have been put at risk by the neoliberal government's dismantling of social and solidarity economy institutions and policies [4]. Additionally, in the Latin American context, a shift in the neoliberal urban agenda resulted in excluding the marginalised urban population, such as waste pickers, from central public space [33]. Waste pickers' struggle over public space to access waste materials in urban Latin America [34–37] urges to consider the spatial mechanisms of dispossession at the urban level.

Sites of waste disposal are key for waste pickers to ensure access to materials and this population has long derived its livelihood from dumps and landfills. Waste studies scholars have documented the targeting of these sites for "accumulation by dispossession" [38–41]. Landfill closures in the Global South have documented emblematic cases of enclosures and dispossession [12,42,43], further dispossessing waste pickers from their capital, namely waste [44] and livelihoods [42,43]. Landfill enclosures and exclusions have been documented from Soweto [38] to Managua [42,45] or Dakar [12]. These socio-economic and spatial exclusions point to the "hygienic enclosures" [46] of urban commons [43,46,47]. In Dakar, for instance, Fredericks argues that the dumpsite modernisation funded by international organisations put waste pickers at risk as "waste commons are now threatened with enclosures" [12] p. 3. The processes of exclusion and enclosures further threaten waste pickers' organisational possibilities as shown in the case of the landfill *La Chureca* in Nicaragua [48].

In Colombia, the formalisation process is also inscribed in neoliberal governance logics and has been revealed to be especially problematic given the threats of exclusion and marginalisation faced by the population of waste pickers [49–51]. In Colombia, waste collection was privatised in the second half of the 1980s, and in the 1990s neoliberal principles of free competition were further established with the new constitution. This resulted in shifting the guiding principles of waste management from economic sustainability to profitability [14,50]. In the late 1990s, the country shifted from open-air dumpsites to sanitary landfills [14,50], and waste pickers were displaced from the dumps to the streets. In Bogotá, for instance, the sanitary landfill was put in place without any type of environmental

control or evaluation of the effects on society. Subsequently, garbage became a commodity that consolidated the lucrative business of producing and burying waste in the capital city [52].

The formalisation policies implemented in the past years have not hampered the historical dispossession of waste pickers throughout the country. On the contrary, in the case of Bogotá, Rosaldo [53] argues that the state adopted “a more subversive tactic: dispossession through formalization, couched in the duplicitous language of recycler empowerment.” [53] p. 2. Although formalisation policies are being implemented in cities across the country, recent research on waste pickers’ formalisation in Colombia shows that there are no real evidence of the benefits for waste pickers working for a formalised organisation, despite noticing an increase in their productivity [10]. Moreover, three years after Decree 596 was implemented, waste pickers still expressed feelings of being discriminated against [54]. The research in Colombia predominantly focuses on the situation in the capital city Bogotá. By comparing the everyday challenges faced by waste pickers in two cities, this research addresses this gap and sheds light on the importance of comparison at the national level.

This paper is structured as follows. After reviewing the current debates in the waste studies literature on the sustained exclusion of waste pickers that arise amidst formalisation process in different contexts, we present our research methodology based on extensive qualitative community-based research with waste pickers and quantitative state-gathered data on recycling. In Section 3 we first contextualise formalisation policies of waste pickers cooperatives in the two empirical case studies, Bogotá and Cartagena de Indias. In Section 4 we continue by analysing the ways formalisation policies became a mechanism of manifold dispossessions and centre specifically on three forms of enclosures unfolding in the two respective cities that we categorise as (a) material and economic; (b) bodily and spatial; and (c) political and organisational. Finally, our paper concludes by urging to consider the situated social, political and cultural facets of waste pickers’ labour to enhance grassroots reflections on how to achieve greater levels of urban social justice and inclusion.

2. Methods: Qualitative Community-Based Research Methodology *with* Waste Pickers

This paper draws on extensive qualitative community-based research methodology *with* waste pickers in two Colombian cities, Bogotá and Cartagena de Indias, guided by an interdisciplinary epistemological position to support Colombian waste pickers’ political struggle for recognition from a theoretical reflection. This paper presents the results of two separate doctoral research. The findings from Bogotá draws upon data collected as part of Tovar’s dissertation fieldwork that involved interviews, focus groups, participant and non-participant observation carried out between 2017 and 2022 with waste pickers organisations. The fieldwork involved participating at the waste pickers organisations’ meetings, waste pickers’ district roundtables (*mesas distritales*), public hearings, conciliation committees (*comités de conciliación*) between waste management operators and waste picker organisations. More broadly, Tovar’s doctoral research in Economic Sciences builds on the theoretical approach of the commons to analyse Bogotá’s inclusive waste management policy.

The second case study draws upon data collected as part of an in-depth ethnographic fieldwork that Neville conducted in Cartagena de Indias for her doctoral dissertation. The research was undertaken over 10 months of fieldwork between 2017 and 2021. The empirical data from fieldwork includes both a cross-section of ethnographic materials from interviews, oral history, and conversations as well as participatory experiences. Individual and group interviews with waste pickers, residents, government officials, NGO representatives and waste management company managers were carried out during this period. Long-term participant observation was carried out accompanying waste pickers at the internal and official meetings of the city’s main waste pickers organisations; at the municipal level accompanying waste pickers to official meetings with the authorities, in particular at meetings on the implementation of the new waste management plan (PGIRS); at the neighbourhood next to the former landfill were a large number of waste pickers

organisations are located; at their working place and on their recycling routes; at public events related to waste management, etc. More broadly, Neville's doctoral research in Social Geography focuses on garbage-based everyday practices and the ways they become entangled to politics of place-making.

In both cases, the doctoral research encompassed community participatory research methodologies sustaining open and continuous reflection with waste pickers through focus groups (Figure 2). Moreover, as both researchers were committed to support waste pickers' struggle for inclusion, they performed small tasks for the waste pickers organisations in the respective cities.

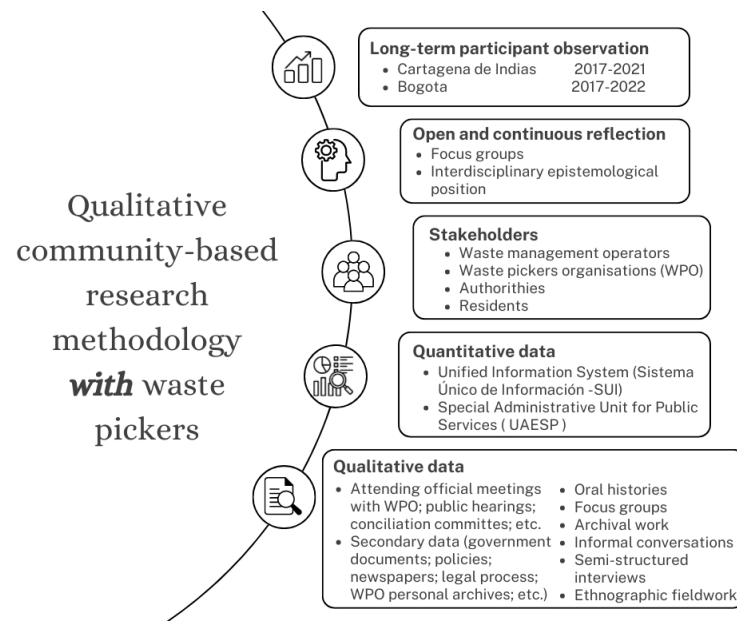


Figure 2. Qualitative community-based research methodology *with* waste pickers. Source: authors.

Both doctoral research also build on historical, archival work and secondary information analysis, such as the analysis of government documents and policies, official newspapers, municipal official documents, minutes and archives, legal processes and personal archives shared by waste pickers organisations. Following the fieldwork, the qualitative data gathered were analysed using the Atlas.ti software (version 9.1.3).

The qualitative data presented in this paper are supplemented by a quantitative analysis of state-gathered data on recycling. This allowed to explore the quantitative trends of waste collection in both cities as well as official figures on the income and access to materials of the population of waste pickers. The data sets were accessed through the reports of the Unified Information System (*Sistema Único de Información, SUI*) of the Colombian Superintendence of Public Services, as well as the reports of the Special Administrative Unit for Public Services (UAESP) on the quantity of waste materials collected and disposed of in sanitary landfills.

3. The Empirical Context: Waste Pickers' Formalisation in the Colombian Context

In Colombia, waste pickers' organisations engaged in a judicial battle for more than 20 years to guarantee their rights to work. As a result, in 2016 the government issued Decree 596 that established a transitory regime for the formalisation of waste pickers. Formalisation policies came forward as an institutional solution to waste pickers' demands and as a response to the mandates of the Constitutional Court to include and improve the conditions of vulnerability faced by the population of waste pickers [50,55]. The process consisted of progressively linking waste pickers organisations as operators of the waste management system and to remunerate their work via a user fee (*tarifa*). In this context, waste pickers' labour included (i) the collecting, (ii) the transporting, and (iii) the sorting

and weighing of recyclable materials (Decree 1077 of 2015/MVCT). In response to waste pickers' claims, the Constitutional Court pronounced itself in favour of waste pickers and ensured:

- The accompaniment of waste pickers' organisations to guarantee their growth as waste management entrepreneurs (Sentence T-291 of 2009);
- The effective participation of waste pickers' organisations in the provision of the public sanitation service for the waste recycling component and its consequent remuneration (Order 275 of 2011);
- The true accompaniment of waste pickers' organisations by the government in the formalisation process as providers of public sanitation services (Order 275 of 2011);
- The promotion of the separation of waste at the source of the production (Order 275 of 2011);
- The guarantee of the real existence of collection centres (Order 275 of 2011); and
- The guarantee of real and safe access to recyclable waste (Order 366 of 2014, Order 587 of 2015, Sentence C-740 of 2015).

To complete the formalisation process and be fully integrated into the waste management scheme, the formalisation policy requires that waste pickers' organisations carry out eight progressive phases (Figure 3) that must be completed in an initial period of five years, which was recently extended to eight years. The formalisation process starts with the registration of the waste pickers organisations at the *Registro Único de Prestadores (RUPS)* (Register of Providers) which is a part of the SUI, an online state-led monitoring platform. The following table presents the requirements that waste pickers organisations must fulfil to complete the formalisation process, classified according to technical, commercial, administrative, and financial criteria.

Waste pickers organisations are engaging in the transitory phases of the formalisation process (described above) in cities across the country, such as the two cities at the heart of the analysis. Bogotá, Colombia's capital city, has been leading the implementation of the formalisation process in the country. Bogotá is a city with more than 7 million inhabitants that produces approximately 6300 tonnes of waste per day, 70% of which could be recycled. However, only 10% of waste is recycled [56]. Waste that is not recycled is disposed of in the Doña Juana's sanitary landfill, whose end of its useful life is expected in 2023. In Bogotá, households, industries, and other waste producers have to sort waste into organic, recyclable material and general waste. Five private companies operate in five areas collecting and transporting waste to the Doña Juana landfill, while more than 231 waste pickers organisations [57] collect and process recyclable materials in the city.

Cartagena is the country's fifth most populated city with over 1 million inhabitants and it produces 1200 tonnes of waste per day. The city mainly disposes of waste in the Loma de Los Cocos sanitary landfill [58] that has an end of its useful life planned in 2024. Two waste collection companies operate in Cartagena and dispose of waste in the Loma de Los Cocos sanitary landfill. A new waste management plan (*Plan de Gestión Integral de los Residuos Sólidos, PGIRS*) is being planned and implemented for the period 2016–2027 in Cartagena which must integrate a programme for waste pickers' inclusion (*Programa de Inclusión de Recicladores*) according to Decree 1077 of 2015. According to the latest census, there were 191 recycling organisations and 1782 people making a living from recycling activities in Cartagena [59].

PHASE	Technical aspect	Commercial aspect	Administrative aspect	Financial aspect
Phase 1	Single Registry of Providers			
Phase 2 (First month)	Define the delivery area	Record tons recycled		
	Record of transported tons and tons by service area	Registration Invoice of commercialization of recycling material		
	Registration of sorting and recycling stations			
	Registration of vehicles for transport			
Phase 3 (Second month)		Contract of uniform conditions of the public service	Business Strengthening Plan	
Phase 4 (First Year)		Services portfolio		
		User Database		
		Web page		
Phase 5 (Second Year)	Weighing machines calibration record			
	Monitoring an control systems			
	Service program			
Phase 6 (Third Year)	Collecting itineraries		Personnel category	
			Certification of labor competencies	
Phase 7 (Fourth Year)	Emergency and contingency plans	Registration of requests, complaints and resources		
Phase 8 (Fifth Year)	Registration map of the service area in the MAGNA-SIRGAS reference system			Financial information

Figure 3. The eight phases of waste pickers' formalisation in Colombia. Source: elaboration based on Decree 596 of 2016, Ministry of Housing, City and Territory, complied by the authors.

4. Results and Discussion: New Forms of Socio-Economic Enclosures within the Formalisation Process

In the following section, we present the results of the research showing what the consequences of the formalisation policies are for waste pickers' daily labour. Informed by the qualitative and quantitative data gathered on waste pickers labour in both cities, we argue that the implementation of state-led formalisation policies sustains new forms of socio-economic enclosures for the population of waste pickers. We categorise three types of socio-economic enclosures: (a) material and socio-economic; (b) bodily and spatial; and (c) political and organisational. The forms of enclosures described below are not the only forms of dispossession encountered by waste pickers, but they are the most important processes reconfigured within the formalisation context in both cities.

4.1. Material and Socio-Economic Enclosures

New forms of material and socio-economic enclosures emerge as the formalisation policies are implemented in both cities that put at risk waste pickers' access to recyclable materials. The principles of free market competition sustaining the formalisation process at the national level exacerbate these forms of enclosures. Indeed, in the Colombian context, the dominant discourse on waste pickers' formalisation relies on the discursive ideal of turning waste pickers into waste entrepreneurs. The Constitutional Court states that affirmative

action should include measures that allow waste pickers to progress as associations of waste entrepreneurs (Sentencia T-387 de 2012) [60]. The formalisation process is defined as a mechanism to accompany this identity and socio-economic transformation and envisions waste pickers organisation as actors competing in tenders to ensure their participation in the recycling economy. Those expectations do not match the everyday realities of waste pickers labour and waste pickers organisations find themselves unable to compete, thus hampering their access to recyclable materials. Moreover, this framework leads to increased levels of competition, both among waste pickers, and with other actors of the recycling industry and waste collection providers. The existing legal possibility in the Colombian framework for any company to provide a recycling service has significantly increased the number of private service providers who are gradually squeezing out long-lasting waste pickers organisations. Furthermore, as shown below, new providers enter the recycling market, calling themselves waste pickers organisations, despite being private operators.

In both cities, waste pickers denounce the competition for waste driven by a ‘free market’ policy and argue they consider it unfair. Indeed, waste pickers organisations claim that the new recycling operators do not respect waste pickers’ historical collection routes and even offer money for users to hand over the recyclable materials. Miguel (all names are pseudonyms), a waste picker in Cartagena, explains during an interview:

“We earn for our daily living. We can’t compete. (. . .) I have compañeros who have been pushed out by (recycling) companies. (. . .) We have been creating the (waste pickers) organisation for four years. They have them in three months because they have money. That’s what we’re seeing. (Interview, 25 February 2019)

The claims made by the waste pickers’ organisations are confirmed by the official data collected on the SUI. Indeed, a close analysis of the quantitative data gathered in both cities show that waste pickers’ organisations are not the only ones who have registered as providers of the recycling service within the public waste collection and disposal service. For example, as shown in Figure 4, in 2021, in Bogotá 355 waste pickers organisations adopted the formalisation scheme (95.4%) besides seventeen companies (4.6%) who also provided recycling service. In Cartagena, in 2021, nineteen (86.4%) waste pickers’ engaged in the formalisation scheme together with three companies (13.6%) who carried out recycling activities.

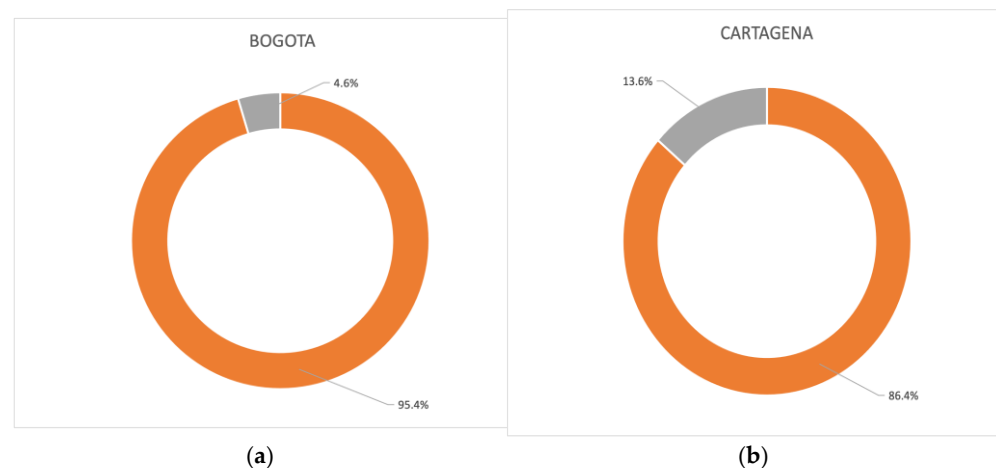


Figure 4. Providers of the recycling service in (a) Bogotá and (b) Cartagena de Indias in 2021. Source: Elaborated with data gathered in the *Encuesta de aprovechamiento*, compiled by the authors.

Figure 4 draws on the number of operators that responded to the Recycling Survey (*Encuesta de aprovechamiento*) and registered tonnes of recyclables on the online platform. Not all the operators that filled out the Recycling Survey recorded information regarding the amount of tonnes of recyclable. Similarly, an analysis of the data for the period 2016 to 2021 (Figure 5) shows a marked decrease in the number of tonnes of recyclables, while at

the same time a constant and sustained growth of the number of providers is observed in both cities.

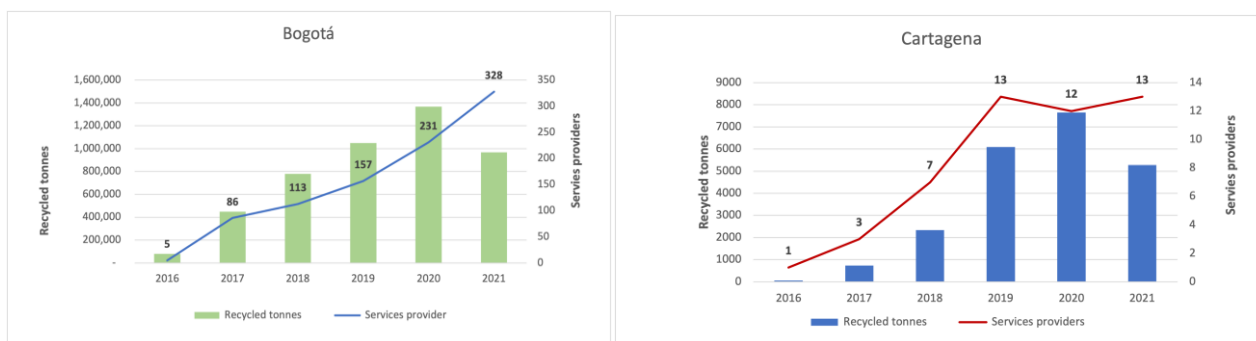


Figure 5. Recycled tonnes and number of recycling service providers in Bogotá and Cartagena between 2016 and 2021. Source: data gathered in the *Encuesta de aprovechamiento*, compiled by the authors.

The data on the share of tonnes reported by the organisations from 2016 to 2021 (Figure 5) shows that with the entry of new recycling providers the percentage share of all organisations is progressively decreasing. The increase in the number of recycling providers has strong implications in terms of access to recyclable materials and consequently in terms of revenue received by waste pickers organisations. Indeed, the user fee (*tarifa*) is paid according to the tonnes of recyclable material collected and reported on the SUI platform. Considering that the number of users paying for the waste management service do not increase in the same proportion as the number of operators, revenues decrease for the waste pickers organisations. For waste pickers organisations, this is a central concern for the future of their work in both cities. For instance, Berledys, a leader of a waste pickers organisation in Cartagena explains:

The tarifa (user fee) is no longer profitable. I always say it's like a cake, if you divide the cake by a few it's fine, but by thirteen (providers) there's not much left. It is better to buy (recyclables) by volume. A city like Cartagena is not big enough to have so many ECAS. The tarifa is no longer worth it. (Interview, 17 July 2021)

When looking at the data on the tonnes of waste buried at the landfill and the tonnes of recyclable materials recycled, a constant increase can be observed in both Bogotá and Cartagena de Indias until 2020 (Figure 6). In 2020, a subsequent decrease is observed. This decrease was caused by an increased state-led control and inspection following alerts related to practices that distorted the data on the recycling service. For instance, double reporting of information on the SUI platform or intentional alterations of information aiming to increase the number of recycled tonnes reported on the SUI platform were identified. To control this situation, the state agency in charge issued a resolution to delay the publication of tonnes when there were inconsistencies in the quality of the information reported by the providers of the recycling service [61]. This delay has a direct implication on the payment of the user fee to waste pickers' organisations and other providers.

In Bogotá, waste pickers opinions on this control measure were divided. The qualitative data gathered shows that on the one hand, waste pickers organisations considered that it was a necessary measure to stop fraudulent practices of a minority of providers that nevertheless affected most of waste pickers organisations and produced a negative image of their work. This claim aligned with a general concern amongst the population of waste pickers, both in Cartagena and Bogotá, that "paper organisations" (*organizaciones de papel*) had been created and charged for a recycling service they were not providing. On the other hand, some waste pickers organisations considered that this control measure penalised a large part of the population of waste pickers who could not get paid by the user fee for their work. Some waste pickers' organisations claimed that this measure did not consider the

structural origin of the problem described above and the research shows that this translated into waste pickers organisations' increased mistrust in the formalisation process. Waste pickers organisations further reported facing difficulty in reporting the information on the platform; fearing fines in case of errors; and a mistrust of effectively getting paid by the user fee tariff in due time. These examples show that the reporting of recyclable tonnes of materials on the SUI platform to get paid by the user fee represents a challenge for waste pickers organisations and sustains a general distrust in engaging with state bureaucracy.



Figure 6. Tonnes of waste buried and tonnes of materials recycled in Bogotá and Cartagena between 2016 and 2021. Source: Data from the SUI platform, elaborated by the authors.

4.2. Bodily and Spatial Enclosures

The process of bodily and spatial enclosures shows a continuity with the successive historical shifts in the waste management public policy in Colombia that translated to the expulsion of waste pickers from landfills to the restriction of collecting recyclables in public spaces to recyclable materials being increasingly sealed in containers. With the current implementation of the formalisation policy, the forms of bodily and spatial enclosures have complexified and represent a constant dynamic of dispossession that threaten waste pickers.

Dispossession processes faced by waste pickers trace back to the exclusion from open-air dumps [37,62]. In Colombia, the spatial and bodily enclosures regarding access to worksites and materials began with the regulation of access to dumps in the 1980s and was reaffirmed with the privatisation of landfill management in the 1990s. The closure of the Navarro dump in Cali is emblematic of these processes in Colombia since the legal actions that followed constituted a fundamental precedent for recognising waste pickers as a marginalised and discriminated population requiring special constitutional protection [53,53,55].

In the beginning of the 1950s, the victims of the violent armed conflict arrived in the main Colombian cities from rural areas. Large numbers of people fleeing political violence survived in the city by selling recyclable materials [63]. In Bogotá, many of them settled near open-air dumps, such as El Cortijo and Gibraltar. The former operated until 1985 and the latter until 1988, leaving more than 3000 waste pickers without access to recyclable materials and livelihoods at their closure, forcing waste pickers to start working on the streets [55]. Many of today's leaders of the waste pickers organisations worked in these landfills and, after their closure, formed organisations, such as the Association of Recyclers of Bogotá (ARB) [64]. In 1988, the Doña Juana landfill was put into operation. Some of the waste pickers who worked at the Gibraltar dump tried to continue their work, through arrangements with administrators or by entering illegally at night. The intensification of internal controls, the permanent surveillance and the closure of the property ended up banning the recovery of materials at the landfill [41].

In Cartagena, in the early 1960s, the municipal open-air dumpsite in the San Francisco neighbourhood was closed and transferred to Henequén. The population of waste pickers who arrived in Henequén following the displacement of the city's dump in the late 1960s,

encountered, in the same place, a population of rural migrants and an internally displaced population due to the violence of the armed conflict [65]. After decades of functioning as the city's dump and providing a livelihood for the residents of Henequén, the open-air dumpsite was closed in 1994 and replaced by a sanitary landfill in the same neighbourhood; however, this restricted access to the population who had been living from the dumpsite. Guillermo, a recycler who was born in the neighbourhood, recalls these early stages of the dispossession process:

“When the landfills were pulverised in Colombia, which was because of Law 142 on public services, waste pickers could not be inside the landfills. So what happened? They took us out of the landfill and left us without work, without a livelihood, and this was a pitched battle between the waste consortiums [. . .] and the waste pickers who were in the Henequén neighbourhood. Because the rubbish dump was more or less at the entrance to Henequén and when they privatised it they put it at the exit of Henequén. In other words, Henequén was in the middle of the rubbish and the trucks passed in front of our community and we could not have access to the rubbish, since the rubbish was not ours, but we had lived off the rubbish all the time [. . .] In order to let us enter the landfill, cooperatives were formed, groups were formed, so we worked either in the morning or at night”.

In Cartagena, a concession was allocated in 2005 for 20 years to a private company to run the actual Loma de Los Cocos sanitary landfill. Despite the landfill closure, Henequén remains a central space to understand geographies of recycling in the city with its numerous recycling warehouses where recyclable materials are collected by waste pickers organisations before being recirculated in the recycling economy. When the Henequén waste pickers were formally denied access to the landfill, this profoundly reshaped their livelihoods and spatial practices. They began at source door-to-door recycling practices and with the support of an NGO, began to collect materials in the industrial sector. Today, their collection routes span across the city but a large number of organisations maintained their collection warehouses in Henequén.

Despite the organisation of waste pickers in cooperatives following the landfill closures in both cities, further dispossessions and enclosures occurred at the national level. In 2008, the government passed Law 1259 that created an environmental fine for opening garbage containers in public space, so that waste pickers would not be able to generate an income by working on the streets. Thanks to the struggle and denunciation of waste pickers' organisations, the law was revoked. This episode was a meaningful step in waste pickers' struggle to guarantee access to recyclable materials and challenge spatial enclosures.

However, with the formalisation process, spatial and bodily enclosures persist. The reduction in working spaces for waste pickers is not limited to exclusions from landfills or public space. The formalisation process poses new challenges for waste pickers organisations' access to workspaces. Waste pickers organisations are required to store collected recyclable materials in warehouses or ECA. In that respect, waste pickers' organisations in Bogotá and Cartagena denounce the difficulty they face in accessing ECAs. The limited size and the requirements for their operation are experienced as a burden by waste pickers organisations. Both observations in the field and the SUI gathered information, reveal that waste pickers workspaces are smaller than those of large recycling service providers in Bogotá and Cartagena. With smaller workspaces, waste pickers' organisations have reduced handling capacity of recyclable materials, which by consequence influences their financial capacity. The substantial difference in the size of waste pickers organisations' workspaces compared to larger companies directly impacts their operational capacity. Based on the SUI gathered data, in Cartagena, the average storage capacity of waste pickers organisations engaging in the formalisation process was 176 tonnes per month, versus 900 tonnes per month for recycling service providers. In Bogotá, waste pickers organisations had an average operating capacity of 330 tonnes per month, whereas private recycling operators had an average operating capacity of 1640 tonnes per month.

The data analysed from the SUI platform shows that there is not only a difference in the operational capacity, but also several obstacles in terms of meeting the requirements to operate the warehouses. According to Decree 596, the workspace or classification and recycling stations (ECA) must meet at least twelve requirements and each organisation must have at least one registered workspace. Without an ECA it is impossible to register as an operator of the recycling service. Among these obligations, warehouses must have land use and environmental authorisations. In Bogotá, the data show that 23% of the warehouses of the waste pickers organisations that engaged in the formalisation process did not have compatible land use, while 100% of the warehouses of private recycling service providers did. Considering the environmental authorisation, 60% of the waste pickers' warehouses did not have one, nor did 65% of the private operators. In the case of Cartagena, 50% of the workspaces of waste pickers organisations did not have authorised land use nor environmental authorisation, and the private recycling providers had 100% land use licences, but without environmental authorisations.

In addition to the licences and size of the warehouses, the ownership and access to these spaces also represents a mechanism of exclusion. Both in Cartagena and Bogotá, most of the warehouses are leased (67% for the former and 92% for the later). Not having the ownership of the workspace affects the autonomy of the organisations, as a waste picker explains during an interview in Bogotá: "It is better to have your own (ECA warehouse) and not have any administration come to take it away".

4.3. Political and Organisational Enclosures

Colombia's waste pickers' movement is among the most organised in the world [63]. Waste pickers unions have played a central role in achieving recognition of their rights and have achieved high levels of national organisational consolidation over the decades. The Colombian waste pickers' movement further coordinated their struggle with regional and international networks of waste pickers movements. After overcoming decades of stigma and dehumanisation, being commonly referred to as "*desechables*" (disposable), indigents or thieves, they are now recognised as official providers of a recycling service making a positive change for environmental sustainability in the public policy framework. Although the favourable improvement of waste pickers' image in the Colombian society is largely attributed to the formalisation process, we argue that it rather poses new threats in terms of waste pickers political participation, their forms of organisation and the social stigma related to their labour.

As argued above, the implementation of the formalisation policy relies on the image of waste pickers as "entrepreneurs". In this sense, the policy is designed in ways that each organisation must comply with the requirements of the formalisation process, further individualising and atomising waste pickers organisations and thus undermining the political capacity of waste pickers' unions. Research shows that the design of the formalisation policies sustains the image of waste pickers as entrepreneurs, moving away from the definition of a historically vulnerable population, thus putting them at risk of losing the recognition gained in the past years, such as the right to "affirmative actions", and reproducing patterns of marginalisation. Increasing labour flexibilization has led to an extreme individualisation of waste pickers labour policies and the weakening of waste pickers' collective political action, systematically reducing their bargaining power. Three years after the start of the formalisation process, a disillusioned waste picker in Bogotá stated that waste pickers had lost their rights when they became entrepreneurs and by decree ceased to be a vulnerable population. She explained:

"The purpose of Decree 596 was not to include waste pickers, but to turn them into entrepreneurs and take a problem off the government's hands". (Personal communication, April 2019)

The fragilization of collective political organisation is exacerbated by the lack of adequate institutional structures. In Bogotá, there is a municipal roundtable of waste pickers that offers the possibilities for dialoguing with the local government, but in other parts of

the country, such as Cartagena, these spaces for dialogue are non-existent. In Cartagena, the attempts to consolidate an umbrella organisation at the city level to negotiate with the municipality were unsuccessful and, the absence of a concerted space for discussion between the different actors, further fuelled internal rivalries, thus diminishing possibilities for collective action. The main waste pickers organisation stopped operating in 2021 and the fragmentation of waste pickers' political organisation in the city further opened the door for private recycling providers to enter the local recycling economy. In Bogotá, the issue of the postponement of the payment of the user fee (explained above) is a clear example of how the design of the formalisation policy generated new internal tensions amongst the waste pickers' movement and revived old social stigmas associated with their labour, once again putting waste pickers legitimacy at risk.

The dearth of public investment to establish "affirmative actions" that should support waste pickers organisations engagement in the formalisation process by guaranteeing financial and technical support further results in a lack of trust from waste pickers organisations. In Cartagena, the lack of the actualisation of the census is an example of affirmative action in favour of waste pickers that has not been implemented by the municipality. As a consequence, a large number of waste pickers organisations have unbound themselves from the formalisation process and a large number of waste pickers choose to work independently. A waste picker in Cartagena explains in an interview her gradual distancing from the process:

The municipality has never been interested in waste pickers here. [. . .] That's how we feel, that the district discriminates against us, in that way. [. . .] So far nothing has been achieved. There are things that have advanced, but so far I still haven't seen any help. So sometimes it's like you get tired and you start working on your own. And we are already going to fight here, but you are stuck when you know that you are not going to get anything, that they are not going to help us, that they are not going to give us anything. [. . .] That is why I have withdrawn a little bit from the meetings. (Interview, July 2021)

The lack of a precise census directly impacts the formalisation process, since to meet the requirements of the SUI, the waste pickers organisations receiving the user fee must have 80% of their waste pickers registered in the census. If this criterion is not fulfilled, it leads to financial penalties of the waste pickers' organisations. However, according to the data, 89% of recycling service providers do not comply with 80% of their registered members. Such scenarios necessitate the municipalities to carry out an update of the census of waste pickers. In Bogotá, the UAESP oversees the census and maintains a constant monitoring. In Cartagena, the latest census of waste pickers was carried out in 2016 and was financed by corporate social responsibility initiatives. The census figures have been decried by waste pickers to be largely underestimated and they have claimed for the need actualise it. In July 2021, in Cartagena, despite the repeated complaints of the waste pickers, the census had still not been updated though it is evident that there been a growth in the population of waste pickers in the past years. As a consequence, only an estimated 250 recyclers that were part of waste pickers organisations received the benefits of the tariff in 2019 in Cartagena.

5. Conclusions

With over 90% of future urban population growth expected to take place in the Global South [66] p. 10, cities are under increasing pressure to be more environmentally sustainable. In order to meet the challenges of municipal solid waste management, an increasing number of cities in the Global South are designing inclusive waste management policies that are being further promoted by international donors. However, formalisation policies create new sets of challenges for populations of waste pickers.

This paper maps the new forms of dispossessions and enclosures faced by waste pickers engaging in formalisation schemes in Bogotá and Cartagena, Colombia. Specifically, it shows that waste pickers have engaged in a historical struggle to access waste materials, forged on their subjectivities as marginalised residents. This paper shows that despite the present context of top-down reshaping of the solid waste management policy, the

formalisation policy mediates new forms of dispossession and accentuates existing material and socio-economic; bodily and spatial; and political and organisational enclosures.

This paper seeks to shed light on the struggles faced by the population of waste pickers amidst the formalisation policy and institutional context. It points to the importance of understanding the challenges related to the implementation of formalisation policies from the everyday realities of waste pickers in urban areas. The processes of dispossession and the enclosures described in this paper urge for a better understanding of the complexity of the socio-cultural rationales of waste pickers' labour and collective action, which otherwise will compromise the intended benefits of formalisation policies and inclusive waste management systems. The forms of enclosures defined in this paper are understood as the starting point for reconsidering where and how sustainable inclusive waste management policies can emerge in the Colombian context, and elsewhere under similar circumstances. Rather than understanding formalisation schemes as an endpoint, they should be conceived as part of a broader political process and struggle for social justice [55,67].

The evidence from Bogotá and Cartagena point to the necessity of considering the situated social, political and cultural facets of waste pickers' labour, based on a qualitative community-based methodology *with* waste pickers, to enhance grassroots reflections on how to achieve greater levels of social justice and inclusion during the design and implementation of inclusive waste management policy frameworks. Indeed, this paper argues that formalisation schemes must go beyond the mere recognition of the population of waste pickers, and that, following an increasingly latent claim of the waste pickers' movement, they must guarantee their effective participation in waste management public policies. In other words, waste pickers claims require an inclusion that transforms their realities and that contributes to the integral and sustainable development of societies.

Finally, formalisation policies pose new threats of dispossession for waste pickers that need to be fully acknowledged by governments and policy-makers. However, the limits of the formalisation policies analysed in this paper should also constitute an opportunity to critically examine the variegated forms that inclusive recycling could take. More research is needed to deconstruct the dichotomy between the formal and informal in waste management, as well as formalisation as an all-encompassing 'solution'. Theoretical frameworks rooted in the Latin American tradition, such as the popular economy, could be useful to rethink waste pickers' work beyond informality, and view it rather as an essential activity to the functioning of society and for social justice [68]. As Gago [69] asserts, when facing multiple dispossessions, a self-organisation gap opens, that can be constituted as a type of non-neoliberal subjectivation based on popular empowerment.

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