

Case Study

Strengthening the Role of Local Governments in Citizen Data Production: The Waste Picker Census in Bogotá

Prepared by:

Collaborative on Citizen Data and Women in Informal Employment: Globalizing and Organizing (WIEGO)



Recycler that uses “balineras” cars to transport recyclables. Source: Women in Informal Employment: Globalizing and Organizing (WIEGO).

Across many cities in the world, waste pickers play a critical role in recovering recyclable materials and reducing the environmental impacts of urban waste. In Colombia, waste pickers collect, recover and sell recyclable materials primarily from city streets, contributing significantly to recycling systems while reducing municipal collection and transportation costs. Waste pickers are among the urban poor and include unemployed individuals, migrants and people displaced by conflict (Parra and Vanek, 2023).

Since the 1990s, waste picker organizations such as the Waste Pickers’ Association of Bogotá (ARB) and the Colombian National Waste Pickers Association (ANR) have advocated for the recognition of waste pickers’ contributions and rights. Their mobilization resulted in a series of

Constitutional Court rulings beginning in 2003 that recognized waste pickers as providers of public recycling services and entitled them to affirmative actions, including remuneration.

In 2012, a Waste Picker Census was carried out in Bogotá District, mandated by the Constitutional Court to identify waste pickers eligible for these measures. In response, the Mayor's Office established a working group and contracted the Universidad Distrital Francisco José de Caldas to design a new census that accurately identifies waste pickers and their families, addressing duplicate registrations and preventing the inclusion of individuals who did not qualify.

This case study examines how the 2012 Waste Picker Census in Bogotá was designed and implemented, highlighting the role of local governments and waste picker organizations in producing citizen data that informed public policy and social inclusion, in line with the Copenhagen Framework on Citizen Data's¹ recognition of the value of citizen data for understanding local needs, power dynamics, and processes of marginalization.

Policy and institutional context

Since the 1990s, waste picker organizations worldwide have advocated for recognition as economically productive workers while challenging the marginalization and discrimination that characterize informal waste work (Chikarmane and Narayanan, 2024).

In Colombia, waste picking has historically provided a livelihood for marginalized populations, including migrants and people displaced by violence (Parra and Vanek, 2023). Despite their essential role in recycling and material recovery, waste pickers often face precarious working conditions, limited occupational protections and restricted access to social services (Parra and Abizaid, 2021).

Waste pickers contribute significantly to urban waste management systems. By collecting and sorting recyclable



Recycler who uses a bicycle as a means of transportation. Source: Women in Informal Employment: Globalizing and Organizing (WIEGO).

materials, they reintroduce valuable resources into production chains, reduce environmental impacts and lower municipal waste management costs.

The privatization of waste collection services in 1994 restricted waste pickers' access to recyclable materials in public spaces. In response, organizations such as ARB and ANR mobilized to demand recognition and inclusion within waste management systems. Their advocacy resulted in several Constitutional Court rulings recognizing waste pickers' rights.

Milestone

Constitutional Court Order

A key milestone was **Constitutional Court Order 275 of 2011**, which affirmed that waste pickers are entitled to special protection due to their conditions of poverty and vulnerability. The ruling required governments to implement affirmative actions² and formally recognize waste pickers and their organizations as providers of public recycling services eligible for remuneration.³

The Court also determined that waste pickers should participate in waste management systems through legally recognized organizations within the solidarity economy, such as cooperatives and associations. Municipal authorities were tasked with identifying waste pickers, guaranteeing their access to recyclable materials and supporting their formalization and organizational strengthening.

Bogotá had previously conducted a waste picker census in 2003 with support from Colombia's National Administrative Department of Statistics (DANE). A second census was conducted in 2010 by Javeriana University, subcontracted by the Special Administrative Unit of Public Services (UAESP), the district government entity in charge of waste management in Bogotá. However, the Constitutional Court identified significant deficiencies in these exercises, including the registration of individuals who were not waste pickers. As a result, the Court mandated a new census.

In 2012, Bogotá launched the development plan "Bogotá Humana 2012–2016," which included the "Bogotá Zero Waste" program and the "Plan for the Inclusion of Waste Pickers". These initiatives aimed to formalize recycling services and integrate informal waste pickers into the municipal waste management system.

Between 2013 and 2016, several national regulations were adopted to implement the Court's rulings. **National Decree 596 of 2016** established requirements for recycling service providers and defined a pathway for the formalization and remuneration of waste pickers throughout Colombia (Parra and Abizaid, 2021). Municipalities were required to develop inclusion plans and update waste picker censuses.

At the national level, the Ministry of Housing, City and Territory (MINVIVIENDA) oversees waste management regulation and plays a central role in coordinating national initiatives related to recycling and waste picker inclusion. In 2014, the ministry led the launch of the Alliance for Inclusive Recycling⁴, a multi-stakeholder initiative involving public institutions, private actors, and civil society organizations aimed at strengthening the formal recognition and support of waste pickers as part of a strategy for social, technical, and economic development in solid waste recovery.



Recyclers who use animal-drawn means of transportation. Source: Women in Informal Employment: Globalizing and Organizing (WIEGO).

MINVIVIENDA has also supported the generation of national evidence on recycling systems. Earlier efforts include the First National Recycling Study (2011), which assessed sanitation systems and the participation of waste pickers, warehouse operators, and processing companies in 22 municipalities, and included information on recycling organizations affiliated with the National Recyclers Association (ANR). In 2016, the Alliance implemented the Second

National Study to Foster Inclusive Recycling, which characterized the waste picker population in cities with more than 100,000 inhabitants, analyzed recycling organizations in 42 municipalities, and examined value chains for materials such as paper, cardboard, plastic, glass, and metal.

To support data collection at the municipal level, MINVIVIENDA published the Guide for Preparing the Waste Picker Census under the Framework of Resolution 754 of 2014 in 2016, providing methodological guidance for local governments conducting these exercises.

Alongside these initiatives, the National Administrative Department of Statistics (DANE) collects, integrates, and disseminates official statistical information on waste through the Circular Economy Information System (SIEC)⁵, helping ensure data quality and supporting decision-making and public policy evaluation related to circular economy and waste management.

Other related data collection efforts include the 2019 Municipal Household Survey⁶ on Solid Waste Management, conducted by the National Planning Department (DNP) in collaboration with the Business Commitment for Recycling (CEMPRE) Colombia and the United Nations Economic Commission for Latin America and the Caribbean (ECLAC). The study found that approximately one-third of the recovery of ordinary waste was managed by informal waste pickers. In 2019, **although 96% of the municipalities that reported providing waste recovery services had a solid waste management plan, only 37% had an inclusion program for waste pickers.**

Design and Implementation

The 2012 Waste Picker Census was funded by the Bogotá district government and coordinated by a technical team from the Mayor's Office. Its primary objective was to identify waste pickers and their families while correcting irregularities identified in earlier census exercises.

A crucial first step involved establishing a clear definition of a waste picker. Previous definitions had included workers employed by recycling firms or logistics companies. The revised definition, drawing on Bogotá's District Agreement 287 of 2007 and the 2011 Constitutional Court ruling, limited the population to:

"A person who habitually performs the activities of recovery, collection, transportation, or classification of solid waste for its subsequent reincorporation into the productive economic cycle as raw material and who derives one's own and the family's livelihood from this activity. They reside in properties in areas classified as low-income. The poverty status of the waste picker will be established by the district administration, in compliance with applicable regulations and social policies"⁷.

Prior to conducting the census, the technical team reviewed previous census of waste pickers and exercises and administrative databases, including:

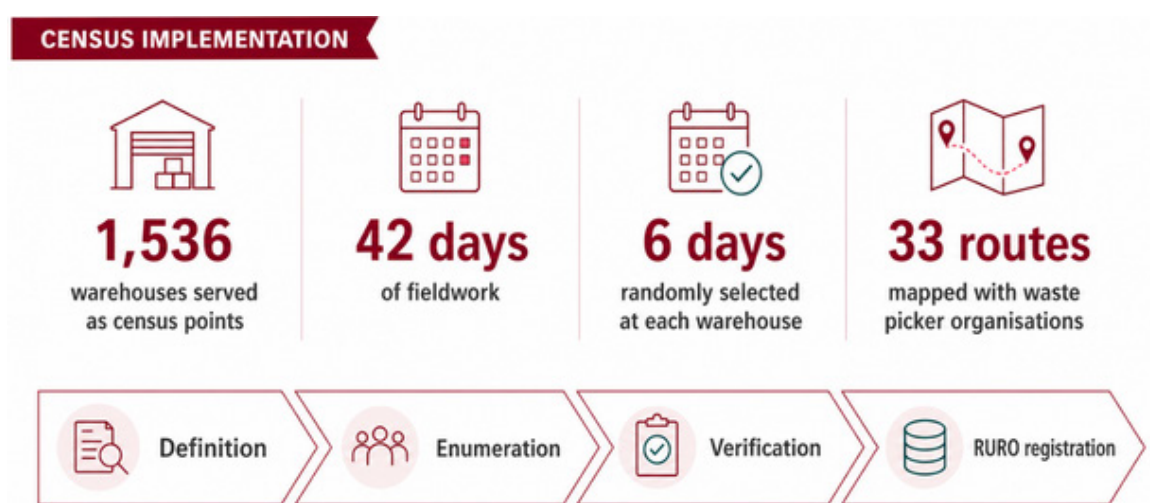
- the 2003 census conducted by DANE and UAESP
- the 2010 census conducted by Javeriana University
- administrative records of registered waste picker organizations

Waste picker leaders and organizations played a central role throughout the process.

They supported outreach activities, informed waste pickers about the census and helped facilitate the enumeration process.

Enumeration was conducted primarily at recycling warehouses in order to reduce the risk of registering individuals who were not waste pickers. A preliminary survey identified the locations where waste pickers sold recyclable materials and helped distinguish waste pickers from warehouse workers, logistics or intermediaries and warehouse owners.

Warehouses were provided with verification forms through which they could authorize their participation as census points; however, some declined to take part in the census. In total, **1,536 warehouses** served as census points. Each warehouse operated for eight hours on six randomly selected days during a **42-day fieldwork period**. To reach waste pickers who sold materials along their collection routes rather than at warehouses, **33 collection routes** were identified and mapped in collaboration with waste picker organizations.



Source: WIEGO

During the design phase, working groups composed of members of waste picker organizations were established to introduce the survey, gather their perspectives, inform them about the process, and secure their support. Waste picker leaders reviewed the questionnaire, proposed revisions, and endorsed the final version. In addition, waste picker organizations worked with the census team to monitor implementation. Roundtables with leaders were also organized to discuss inconsistencies in responses, including those related to activities and income. Selected waste picker leaders, together with representatives from UN-Habitat, served as observers at each stage of the census process.

The team responsible for implementing the census consisted of 6 Field Coordination Support Personnel, 26 Field and Verification Supervisors, 401 Census and Verification Enumerators, 1 General Supervisor, 1 Digitalization Supervisor, and 14 Reviewers responsible for overseeing digitalization. Each Field Coordinator supervised 4 Support Coordinators, who in turn managed 6 to 7 Supervisors. Each Supervisor was responsible for overseeing the work of 10 Enumerators.

The questionnaire included four sections:

- 1.** Interview control information
- 2.** Identification of the waste picker
- 3.** Social characteristics
- 4.** Occupational characteristics

The form included questions designed to capture the value chain of recovery, transport, collection, classification, and reintroduction of recyclable materials. It covered the actors involved in transportation and commercialization, as well as the different roles waste pickers perform throughout the process, including collection sites, transportation methods, waste quality, and physical demands. To identify temporary waste pickers, the questionnaire also asked about the amount of time dedicated to the activity and the income derived from it. The census went beyond simply enumerating waste pickers eligible for compensation; it also assessed housing conditions, the division of labor within waste-picking households, education levels, and access to social security.

To complement the census, a post-census household survey was conducted to better understand family dynamics related to waste picking. This approach helped capture information on individuals who contribute to recycling activities but may not visit warehouses, including women, older adults and persons with disabilities. It also helped strengthen intersectional analysis and assess social norms and gender roles.

Following the census, Bogotá established a post-census monitoring system through the **Unified Registry of Waste Pickers (RURO)** in 2014. Several sources are used to update this database:

- annual membership lists that waste picker organizations are required to submit to the Office of the Mayor of Bogotá;
- requests from non-affiliated waste pickers seeking official recognition, followed by a survey and verification visit conducted by the UAESP;
- membership lists submitted by newly formed waste picker organizations⁸; and
- additional registrations carried out by UAESP local promoters through field visits.

RURO makes this information available through an interactive portal that includes data on social protection, housing, socioeconomic status, activities, and gender. As of January 2024, RURO had registered 26,159 active waste pickers in Bogotá.⁹

Findings

Key Results

The census collected information on **14,414 waste pickers**. After verification and screening procedures, **13,984 individuals were formally registered** as waste pickers in Bogotá by September 2012.

The results showed that **53% of waste pickers were between 26 and 50 years old**. Regarding social protection, **62% were covered by subsidized health insurance, 7% contributed to social security, and 26% had no coverage**.

Nearly half of respondents (**47%**) **reported working more than eight hours per day**, and **76% earned less than the minimum wage**.

Implementation challenges

Building and maintaining trust among waste pickers was one of the main challenges of the census. Many workers were initially reluctant to share information due to a history of discrimination and criminalization, and some feared the data might be used against them (Chikarmane and Narayanan, 2024).

This challenge was addressed through strong political commitment to implement the Constitutional Court's rulings and the involvement of trusted intermediaries, including leaders

from waste picker organizations and civil society actors with long-standing relationships with the community.

Another challenge involved maintaining updated data over time. Conducting censuses requires significant financial and technical resources, and some municipalities lack the capacity to repeat the exercise regularly¹⁰. In Bogotá, the RURO registry helps address this challenge by enabling continuous data updates.

Limited technical capacity in statistical methods also affects census implementation in some municipalities. Although national guidelines have been developed with support from DANE, many local governments still require technical assistance to ensure reliable data collection and analysis.

Finally, data quality remains a persistent concern. National oversight reports have identified discrepancies between municipal census data and information reported by recycling service providers. Informality and under-registration continue to complicate efforts to accurately identify waste pickers and assess their socioeconomic conditions.

Given that this exercise is used to identify individuals entitled to special state protection and to benefit from targeted, sector-specific affirmative action, in many urban contexts, some individuals who are not waste pickers have the incentive to be covered by the census to benefit from such affirmative measures.

There is therefore a need to strengthen collaboration with DANE and other actors within the national statistical system in order to improve data assurance methods. Encouragingly, initial forms of collaboration between DANE and other governmental authorities involved in strengthening waste picker census processes in Colombia have already begun to take place. This also presents an opportunity to use data from municipal surveys to strengthen official statistics, such as the Circular Economy Information System published by DANE, and to complement these data with socioeconomic information on waste pickers and their organizations. Nevertheless, a robust data quality assurance framework is still needed to ensure the production of reliable and accurate data.

Outcomes and policy influence

One of the most significant outcomes of the census was the increased visibility of waste pickers and their living conditions. This visibility enabled many workers to access social protection programs and receive remuneration for their recycling services. The census also

enabled Bogotá to implement a remuneration scheme for recycling services, and waste picker organizations used census data to strengthen negotiations with the city government.

In addition, the census supported outreach efforts aimed at formalizing waste pickers and strengthening their organizations. At the national level, the experience contributed to the development of broader regulatory and methodological frameworks for waste picker identification and recognition. Since 2014, the national government has required municipal authorities to prepare or update waste picker censuses, supported by the *Guide for Preparing the Waste Picker Census under the Framework of Resolution 754 of 2014*, developed by the Ministry of Housing, City and Territory (MINVIVIENDA) in 2016. More recently, the Superintendence of Public Utilities issued updated executive guidelines¹¹ in 2024 to provide a technical framework for developing or revising local waste picker censuses. These efforts became even more critical following the issuance of National Decree 1381 in November 2024, which granted exclusive recycling service rights to waste pickers and their organizations, making accurate identification and registration essential.

Recognition and remuneration policies also supported the broader regulation of waste recovery and contributed to the recognition of recycling organizations as essential service providers during the COVID-19 pandemic (Parra and Abizaid, 2021). In Bogotá, the Unified Registry of Waste Pickers (RURO) has further strengthened data-driven decision-making by integrating multiple data sources and making information publicly accessible through a data portal. Waste picker organizations use this data for advocacy and public accountability, while government agencies rely on it to inform policy development.



Banking Access for Waste Pickers as a Result of the Census. Source: Women in Informal Employment: Globalizing and Organizing (WIEGO).

Lessons Learned

The Waste Picker Census in Bogotá demonstrates how citizen data can serve as a critical tool for helping communities identify their needs and empowering them to hold public institutions accountable. By involving waste picker organizations and their leaders throughout the data value chain, citizen data can help fill critical gaps affecting groups that have historically been underrepresented in official statistics, thereby increasing public awareness and enabling targeted programs that improve the livelihoods of waste pickers and their families (Parra and Vanek, 2023). The role of ARB and ARN, supported by court rulings, was also instrumental in enabling the Mayor's Office to implement the census. These organizations advocated for the census, shared information with waste pickers, and helped secure warehouses as census points.

The Waste Picker Census in Bogotá demonstrates how citizen data can serve as a critical tool for helping communities identify their needs and empowering them to hold public institutions accountable.

To better understand the needs and challenges faced by vulnerable groups, quantitative methods should be complemented by qualitative approaches, such as the household visits conducted after the census. These approaches can also help build trust and foster engagement with intermediaries and other actors who can facilitate the process and provide a deeper understanding of the socioeconomic context of waste picking. It is likewise important to involve community representatives from the early stages of the data value chain so that they can support outreach to marginalized communities and help build relationships based on trust.

Way Forward

Globally, the essential role of waste pickers and their contributions to waste management and the materials supply chain are increasingly being recognized. Waste pickers and their organizations are building a “collective voice” and striving to create a formal recycling system that acknowledges their role as key partners in the design, implementation, evaluation, and revision of local waste management systems (Chikarmane and Narayanan, 2024). As waste pickers strengthen their organizations and make their demands more visible, municipalities need to intensify efforts to collect, share, and use data on waste pickers and their activities. This case study shows how the direct involvement of waste pickers and their organizations throughout the data value chain can help generate reliable information for evidence-based policymaking and advocacy.

Citizen data produced by local governments can complement or challenge official statistics, enriching the data landscape and promoting more transparent and inclusive policies that respond to the needs of vulnerable populations. Since 2024, DANE has been working to strengthen its role in promoting the use of citizen data. It has been developing a quality and regulatory framework to increase citizen participation in the generation, validation, and use of statistical data. DANE has also engaged actors across the National Statistical System through virtual courses, capacity-building initiatives, and networking opportunities. Citizen data has been incorporated into the National Statistics Program, and efforts have been made to map and engage civil society organizations and to develop a Maturity Model for Citizen Data in Colombia.



Endnotes

¹ UN Statistical Commission. The Copenhagen Framework on Citizen Data (v 1.0). Item 3(e) of the provisional agenda: Items for discussion and decision: Data and Indicators for the 2030 Agenda for Sustainable Development. Background document. Fifty-sixth session, 7 March 2025.

² Article 13, paragraphs 2 and 3 of the Political Constitution of Colombia, defines “affirmative actions” as policies or measures to benefit certain individuals or underrepresented groups to eliminate or reduce social, cultural, political or economic inequalities.

³ Rulings T-291 of 2009 and Auto-275 of 2011.

⁴ [Alliance for Inclusive Recycling](#).

⁵ [Circular Economy Information System \(SIEC\)](#).

⁶ [Survey results can be found here](#).

⁷ Article 2 of Decree 596/2016 of the Ministry of Housing, City and Territory.

⁸ These organizations are registered as recycling service providers with the UAESP and the Superintendency of Domiciliary Public Services (SSPD).

⁹ [Overview of the Unified Registry of Waste Pickers \(RURO\)](#).

¹⁰ In Colombia, 965 municipalities (out of 11,236) are large enough to support waste pickers; however, as of December 2020, only 190 municipalities had reported undertaking a waste picker census (Parra and Vanek, 2023).

¹¹ [First Technical Guideline for Strengthening the Process of Identifying the Recycling Community](#)

References

Chikarmane and Narayanan (2024). Statistics on Waste Pickers: A Case Studies Guide. WIEGO Statistical Brief No. 39.

Parra and Vanek (2023). The Collection of Data on Waste Pickers in Colombia 2012-2022. WIEGO Statistical Note No. 35.

Parra and Abizaid (2021). [Formalization as Public Service Providers: Achievements and Obstacles for Colombia's Waste Pickers](#). WIEGO Technical Note No. 12.

