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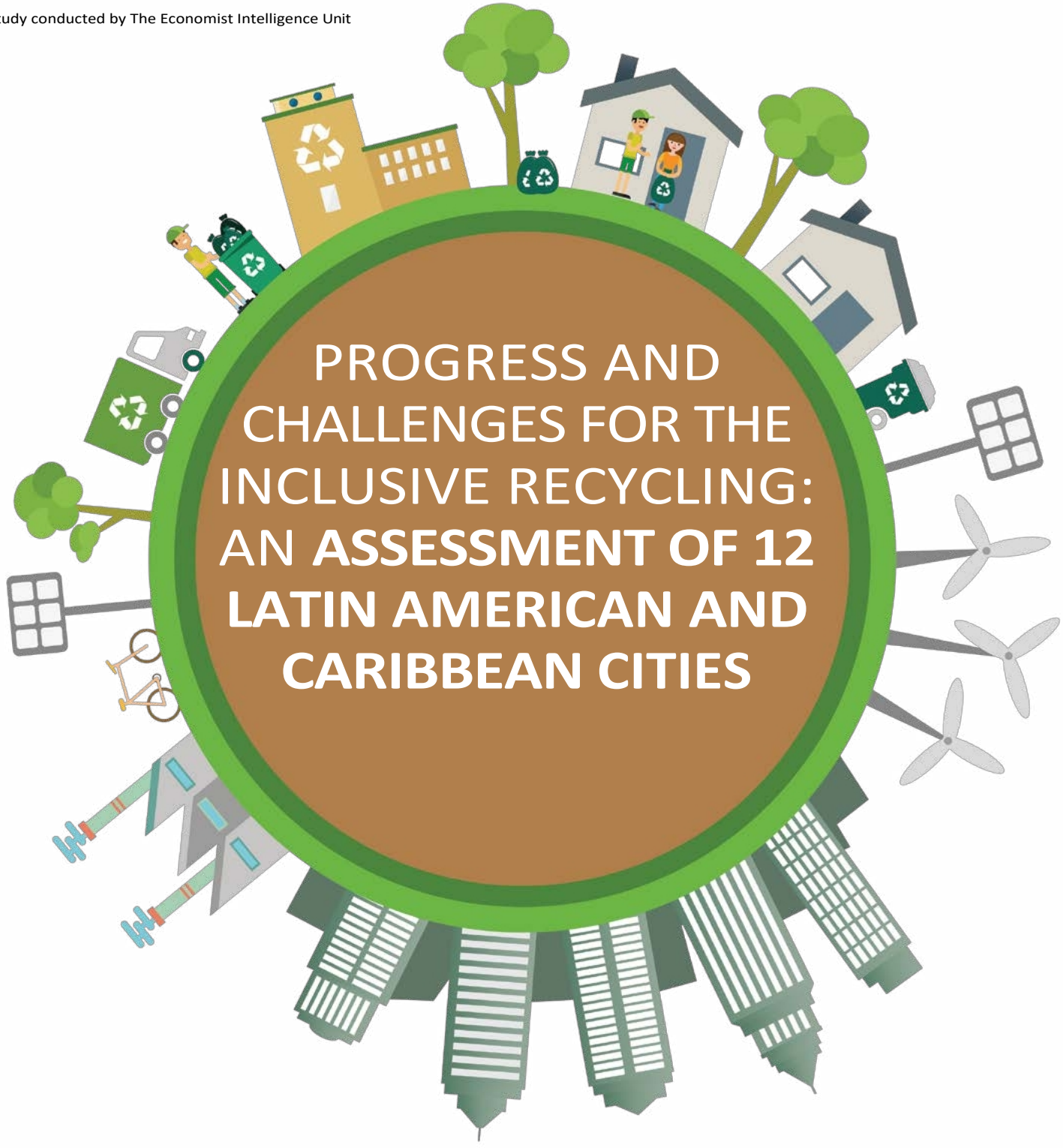

PROGRESS AND CHALLENGES FOR THE INCLUSIVE RECYCLING: AN **ASSESSMENT OF 12 LATIN AMERICAN AND CARIBBEAN CITIES**

With the support of IRR Iniciativa Regional para el Reciclaje Inclusivo

BID FOMIN Coca-Cola PEPSICO Avina Red Latinoamericana de Recicladores

The Economist Intelligence Unit

Contents

About this report

The study *Progress and Challenges for Inclusive Recycling: An Assessment of 12 Latin American and Caribbean Cities* evaluates the institutional and operational context of inclusive recycling in 12 Latin American and Caribbean cities through a set of qualitative and quantitative indicators, with the purpose of establishing the current status of inclusion and formalisation of grassroots waste pickers within the integrated solid waste management value chain. In this sense, the study does not address the state of the recycling chain in general. It is recommended that this report be used in conjunction with characterisation studies of waste management systems and recycling markets, and with other contextual studies. Most of the research for this report, including interviews and documentary analysis, was conducted between August and November 2016. The report is accompanied by an interactive Excel tool, which contains the assessments of the 12 cities with scores for all indicators.

This work was financially supported by the Multilateral Investment Fund (MIF), a member of the Inter-American Development Bank (IDB) Group, in the framework of the Regional Initiative for Inclusive Recycling (IRR).

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About The Economist Intelligence Unit

The Economist Intelligence Unit (EIU) is the research arm of The Econ- omist Group, which publishes *The Econo- mist* magazine. As the world's leading provider of country intelligence, it assists governments, institutions and businesses by providing timely, reliable and impartial analysis of economic and development strategies. Through its public policy practice, the EIU provides evidence-based research for decision-makers and others interested in measurable outcomes, in fields ranging from gender and finance to energy and technology. The EIU conducts its research through interviews, regulatory analysis, quantitative modelling and forecasting, and presents the results in interactive data visualisation tools. Through a global network of more than 650 analysts and correspondents, it consistently assesses and forecasts political and economic conditions and the business environment in more than 200 countries. For more information, please visit www.eiu.com.

About the Multilateral Investment Fund

The Multilateral Investment Fund is an innovation lab for the Inter-American Development Bank Group. It conducts high-risk experiments to test new models for engaging and inspiring the private sector to solve economic development problems in Latin America and the Caribbean. The MIF addresses poverty and vulnerability by focusing on emerging enterprises and small agricultural producers that have the capacity to grow and create economic opportunities.

About the Regional Inclusive Recycling Initiative

The Inclusive Recycling Regional Initiative (IRR) is a partnership that combines public and private efforts, led by the MIF and the Water and Sanitation Division of the Inter-American Development Bank, the Avina Foundation, the Latin American Network of Recyclers (Red LACRE), Coca-Cola Latin America and PepsiCo. It is a multi-sectoral platform that articulates different actors in the recycling sector and seeks to strengthen the role of the private sector and improve the functioning of the recycling market through new business models and mechanisms for the incorporation of technology, as well as to promote the creation of public policies for the integrated management of solid waste with the inclusion of grassroots recyclers, as a way to harness their potential and improve their socio-economic situation.

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The research involved interviews with a range of experts in each city: grassroots waste pickers, municipal officials, recycling companies, NGO representatives and academics. In total, 90 interviews were conducted, or approximately 8 experts per city. We thank the interviewees for their contributions. A list of the experts interviewed in each city is provided in the Bibliography section.

Introduction

The Latin American and Caribbean region has enjoyed sustained growth in population and economic well-being over the past 15 years. In parallel, the region has followed a process of continuous urbanisation that has led to a figure of 80% of the population living in cities (UN, 2015). This phenomenon of growth and urbanisation has been accompanied by increased consumption of products and an increase in the generation of solid waste. As a result, governments have gradually adopted so-called integrated solid waste management (ISWM) models. These models are often built around public health, environmental and resource management objectives (UN-Habitat, 2010). Recycling, defined as the collection and processing of waste materials for reuse (EPA, 2016), is a key aspect of these integrated strategies, because of its contribution to resource management (and waste reduction) objectives and environmental goals.

Recycling contributes to the preservation of natural resources, and the use of recycled material in industry reduces energy consumption and carbon emissions compared to the processing of virgin raw materials (The Economist, 2007).

The region's economic growth continues to increase the population living in urban areas, generating a need for public policies that avoid higher future costs in environmental, economic and health terms. Latin American cities need to transform their productive models from "extract, produce and dispose" to a Circular Economy model of "reduce, reuse and recycle" (Peinado-Vara, 2016). Strengthening inclusive recycling is a key step in the transformation of cities. It is estimated that different transformation strategies to the circular economy can achieve net benefits such as GDP increases of between 0.8% and 7%, job growth of between 0.2% and 3% and carbon emission reductions of between 85% and 70% (Ellen MacArthur Foundation, 2015).

In most cities in Latin America and the Caribbean (LAC), a phenomenon has developed with the increasing urbanisation of the region: low-income people collect and sort waste from the streets, open dumps or other points in the municipal solid waste chain in search of materials with potential resale value. It is estimated that up to 4 million people in LAC earn their livelihoods by collecting, transporting, sorting and selling recyclable materials such as cardboard, paper, glass, plastic and metal (PAHO, AIDIS and IDB, 2010). These workers are known by different names in the region.[1] In this report, the term "grassroots recyclers" is used, a term that is used to refer to the

1 Terms vary by country: *ciruja, cartonero and excavador* in Argentina; *catador and chepeiro* in Brazil; *cartonero, cachurero and chatarrero* in Chile; *basuriego, costalero, zorrego and botellero* in Colombia; *buzo* in Costa Rica, Cuba, Honduras and the Dominican Republic; *minador and chambero* in Ecuador; *pepenador* in Mexico, El Salvador, Guatemala, Nicaragua, Panama and Paraguay; *guajero* in Guatemala; *churequero* in Nicaragua; *metalero* in Panama; *ganchero* in Paraguay; *segregador and cachinero* in Peru; *hurgador and clasificador* in Uruguay; *excavador and zamuro* in Venezuela; "scavenger", "reclaimer", "binner", "poacher" and "salvager" in the English-speaking Caribbean; and "chiffonier" in the French-speaking Caribbean.

adopted by waste pickers at the First World Conference of Waste Pickers in 2008, held in Bogotá, Colombia.

Grassroots waste pickers tend to belong to the poorest and most vulnerable sectors of society. Their work - much of it in open dumps - exposes them to multiple risks, from poor health and safety conditions to exploitation, harassment and violence. However, grassroots waste pickers are also productive agents whose income supports not only their families but also local communities. Their material recovery work feeds into different productive chains. Grassroots waste pickers contribute approximately 25%-50% of all municipal recycled waste collection in the LAC region (UN-Habitat, 2010). In turn, they provide services to municipal governments by extending the life of landfills, reducing transportation costs, reducing the need to extract new materials, and providing environmental and public health benefits, including reduced greenhouse gas emissions.

A decade ago, the informal sector was barely on the radar of solid waste planners, local and national governments and international institutions. Informal recycling went unrecognised for many years, and was even treated as a form of crime. This perception began to change in the early 1990s in some cities, such as Bogotá and Belo Horizonte, through local initiatives to support informal waste pickers and improve their working conditions.

Over the last decade, informal recycling has grown enormously in terms of the visibility, organisation and seriousness with which it is taken by governments, multilateral donors, NGOs and other institutions. The first regional gathering of grassroots waste pickers was held in Brazil in 2005 and the first global meeting in Bogotá in 2008. As grassroots waste pickers began to achieve greater recognition, the sector began to be formalised through a growing number of legal and policy frameworks. At 2009 and 2010, Peru and Brazil, respectively, were the first countries in LAC to pass national solid waste laws recognising informal waste pickers and protecting their rights. They were soon emulated by laws in India, Colombia and Chile, among other countries. The LAC region pioneered many of the critical dimensions needed to formalise the sector, including self-organisation, public perceptions, productivity, legislation and institutionalism. The region continues to be a world leader in the field.

The launch of the Inclusive Recycling Regional Initiative (IRR) in 2011 represented another milestone in this regional and global process of recognising, supporting and integrating grassroots recyclers into the integrated solid waste management chain. Initially funded by a partnership between the Water and Sanitation Division of the Inter-American Development Bank (IDB), the Multilateral Investment Fund (MIF) of the Inter-American Development Bank (IDB), the AVINA Foundation and the Coca-Cola Company, the IRR has been an important regional initiative to improve the integration of waste pickers into formal processes. Subsequently, supported by the Latin American Network of Waste Pickers (LACRE Network) and PepsiCo, the IRR has been a significant force in improving the quality of tools, professional skills and sectoral knowledge available to those engaged in this work, including this publication which represents a comprehensive methodology for assessing the inclusion of grassroots waste pickers in municipal integrated solid waste management systems.

Integrating the informal sector into the waste value chain is both a science and an art, as it involves many variables, actors and interests. It requires a broad knowledge of key principles, as well as a thorough understanding of the local contexts, a thorough knowledge of the actors involved and a sound knowledge of the analytical framework for data collection and analysis. This framework can also form the basis for monitoring results and comparisons of the different cases. The present study is a first step towards analysing the

Comparatively analyse multiple cases of grassroots waste picker inclusion across three levels (policy, organisational and market), highlighting best practices and identifying key remaining challenges.

This study is the result of the combined work of a global professional community: a network of specialists from diverse institutions and backgrounds, including grassroots recyclers. The methodology was developed by the Economist Intelligence Unit (EIU) research team in consultation with the IRR and a community of international experts, activists and recycling leaders, building on previous methodologies such as those used in UN-Habitat (2010), Velis et al. (2012) and Wilson et al. (2015a, 2015b), as well as the IRR's comparative study of 15 countries in the region, "Inclusive Recycling in Latin America and the Caribbean" (Accenture, 2013). The methodology is based on a set of 37 qualitative indicators divided into three broad dimensions:

1) regulatory; 2) organisational (i.e. the waste pickers themselves); and 3) market. This analytical framework was developed through an iterative process that involved literally dozens of specialists, and culminated in a one-day workshop at IDB headquarters in Washington, DC, with some of the world's leading experts on inclusive recycling.

The analytical framework was applied to 12 Latin American cities of varying population sizes, levels of progress in waste management and informal sector participation. The result should provide both a reliable picture of the state of inclusion of grassroots recyclers in each of the target cities and a broader picture of the region, as well as a test of the present methodology that can then be adopted and used by other researchers. Several of the cities assessed in this study represent the most advanced cases in the region, which other cities should seek to emulate if they wish to develop and promote new industries. It is hoped that this study will provide a useful tool to improve the design and implementation of actions to integrate informal waste workers in a way that benefits all: the municipalities where they operate, the citizens, the recycling industry and the environment.

Credits: Alfredo López

I.
Inclusive recycling in Latin America and the Caribbean

Informal recycling" refers to the collection, sorting, cleaning, transport and/or transformation of recyclable materials in the solid waste stream that takes place outside the formal system. Informal recycling encompasses a large sector in Latin America and the Caribbean: it has been estimated that almost 4 million people earn their living in informal activities in the solid waste stream (PAHO, AIDIS and IDB, 2010). Given this magnitude, informal waste management has important social, economic and environmental implications for society. Grassroots waste pickers[2] are people who collect recyclable waste for sale, either individually or in different organisational modes. They generally work with inadequate equipment in unsanitary or even dangerous conditions. Because of the informal nature of their work, waste pickers face risks such as lack of access to waste, unstable incomes and social exclusion. However, when recycling is institutionally supported and properly organised in an inclusive manner, it can lead to the creation of new jobs in the formal market, reduce the amount of solid waste disposed of in landfills or landfills, and contribute to the development of a circular economy.

While recycling has gained global importance in recent decades,[3] there is heterogeneity in the models of its management and also in the levels of output. At the same time, there is a clearer distinction in terms of distribution between formal and informal recycling. The latter tends to be more common in less developed regions. The informal recycling rate is 0% in highly developed cities such as Rotterdam, San Francisco and Adelaide (Australia), compared to levels such as 85% in Bamako (Mali). In Latin America and the Caribbean, low recovery and recycling rates are still reported (about 2.2%) (PAHO, AIDIS and IDB, 2010).

Informal recycling is a work option for hundreds of thousands of people, remunerated through the sale of reusable materials or payment for collection services (Scheinberg, 2012). Most informal waste pickers are vulnerable people: migrants or displaced persons, in extreme poverty, with low educational attainment. While there are no exact figures for the sector, it is estimated that around 1% of the world's population earns a living from informal waste picking (UN-Habitat, 2010).

The difficulties faced by waste pickers

The work is often re-examined at the grassroots level. The work is often re

2 The term "grassroots waste picker" was adopted by the First World and Third Latin American Conference of Waste Pickers in 2008.

3 Recycling has been positioned as one of the priority actions for sustainable development. The United Nations Sustainable Development Goals proclaimed in 2015 have dedicated a section to "Ensure sustainable consumption and production patterns". The target
12.5 specifically states, "By 2030, substantially reduce waste generation through policies of prevention, reduction, recycling and reuse".

They are often exposed to hostile and unhealthy environments, such as streets and open dumps, where they are in contact with non-health hazardous materials. In turn, they are often stigmatised by society and law enforcement as a problem. Their income is volatile and dependent on intermediaries in the value chain, who earn the highest profit margins (Medina, 2008; Global Alliance of Waste Pickers, 2012). The lack of legitimacy of their work also means that they have problems accessing social security services.

Although grassroots waste pickers provide necessary services to citizens, businesses and municipalities, the economic, social and environmental benefits they provide are not adequately rewarded. According to UN-Habitat (2010), in developing cities, informal recyclers separate 15-20% of recyclables, which reduces the volume (and cost) of waste that would have to be collected and transported to disposal sites.

Informal waste picking has been gaining greater recognition in different national and international arenas, largely due to the drive of organisations in the sector. Among the most important milestones are international congresses and conferences, such as the First World Congress and Third Latin American Congress of Waste Pickers in 2008 in Bogotá. In spaces such as these, priorities for the improvement of the sector's conditions have been identified, including legalisation of the activity and inclusion in occupational classifications; provision of training, infrastructure and adequate equipment; access to social security; integration in the municipal solid waste management strategy and contracting facilities with the administration; privileged participation in the value chain of recycled materials; financing facilities and support for cooperatives.

Latin America and the Caribbean has been noted for significant progress in legitimising the activity through policy incentives, and also for demonstrating high levels of organisation in the sector (Ezeah et al., 2013).

Brazil is a global example, where there is a national policy of recognition of the recycling ocu- pation and where there is a sophisticated institutional and organisational structure (Samson, 2015). In Colombia, for example, the development of public-private partnerships has been highlighted (Medina, 2008).

While steps have been taken towards improving conditions for waste pickers, there is still a long way to go in terms of adequately structuring the recycling sector in the region. For example, the underdevelopment of the processing industry and the local market for recycled material and the dependence on exports have been identified (Accenture, 2013). Deficiencies in the implementation of source separation measures and low levels of technification of recycling processes have also been identified (PAHO, 2010). In many cases, recycling relies exclusively on informal recycling. But informal recycling models sometimes rival privatisation models in integrated solid waste management. While the latter are often accepted as synonymous with efficiency, it is important to recognise the importance of informal recycling for its social and economic value (Global Alliance of Waste Pickers, 2012).

To improve the conditions of grassroots recyclers, monitoring of the activity is also necessary at all levels. For example, to measure the economic contribution of informal recycling to the cities' solid waste management system, the volume of material entering disposal sites should be measured. The population of waste pickers must also be identified, as well as their living and working conditions, in order to design the most appropriate strategies.

Many business models are lucrative and offer powerful positive externalities, but the regulatory environment often blocks the possibility for these value chains to develop effectively. Inclusive recycling is often blocked by unintended consequences of regulations on waste transport and trade, social factors that prevent companies from taking advantage of business opportunities in the waste sector, and the lack of a regulatory environment.

the circular economy and market failures (information asymmetries). The public sector can maximise the growth of the circular economy by setting the right rules and incentives to harness the creativity and efficiency of the private sector, thereby generating value for both business and society (Ellen McArthur Foundation, 2015).

Credits:

II.
Background to the study

In 2013, the Regional Initiative for Inclusive Recycling (IRR) published the results of an initial study and comparative analysis of the informal recycling sector in 15 countries in the Latin American and Caribbean region. The initial assessment considered 17 qualitative and quantitative indicators in three main dimensions: 1) regulatory, 2) organisational and 3) market.

The IRR, together with the Economist Intelligence Unit (EIU), updated this first assessment in 2016, renewing the indicator framework, incorporating new indicators and refining the scoring criteria, in order to strengthen the analysis of social inclusion activities for informal waste pickers in the countries.

What is the purpose of the research?

The research aims to assess and measure the institutional and operational context of inclusive waste picking in 12 cities in Latin America and the Caribbean through a set of qualitative and quantitative indicators. The specific purpose is to measure the inclusion of grassroots waste pickers and the situations in which recycling is generally not taking place.

The indicators and the baseline model have been designed to be highly dynamic, so that the study can be updated (every one or two years) to reflect progress (or setbacks) on the different critical issues around inclusive recycling.

As this sector evolves, the indicator framework will need to be adjusted and renewed to capture its changing dynamics.

As a result of the research, two main products have been produced:

- *An interactive reference model* (in Excel format), presenting drivers, city benchmarks and research results through a set of functions, including an interactive function for self-assessment and weighting adjustments.
- *This report* presents the final results of the research, the main findings for all dimensions and cities, assessments for each city, the methodology used and relevant appendices.

The indicator model has three main purposes:

1) Describe the context for inclusive recycling in 12 cities (used as a knowledge tool).
2) Compare the context for inclusive recycling in the 12 cities (which is used as a reference tool).
3) Promote dialogue and urge policy change in the sector (which is used as a public policy tool).

What is "inclusive recycling" and what would be the ideal scenario or model?

Inclusive recycling" refers to waste management systems that prioritise recovery and recycling, recognising and formalising the role of waste pickers as key actors in such systems (Boxes 1 and 2; Figures 1 and 3). These systems are built through regulations and public policies, initiatives, programmes and actions of the public and private sectors.

Recycling with Inclusion represents a new paradigm in sustainable solid waste management, which incorporates the concept of the environmental "3 Rs" (Reduce, Reuse and Recycle) with other "3 socio-economic R's", namely:

- Differentiated waste collection
- Recognition of the role of the receivers
- Remuneration for the service they provide

IRR and its partners promote the development, implementation and consolidation of inclusive recycling schemes in the region, with a specific focus on:

1. Improve the socio-economic situation of grassroots waste pickers.
2. Facilitating their access to recycling markets formal.
3. Promote the creation of public policies for the integrated management of solid waste that include them.

The ideal scenario encompasses much more than improving working conditions for grassroots waste pickers and includes the gradual, negotiated construction of an inclusive model of solid waste management that benefits: 1) public institutions, 2) society (abiding by environmental, public health and social standards), 3) waste generating companies, 4) waste processing companies and 5) grassroots recyclers. One of the objectives underlying this ideal scenario is the uninterrupted growth of recycling activities. The ideal waste management system should be based on open and participatory institutions and laws, with a wider adoption by the waste pickers.

The public sector's commitment to separation at source, more efficient collection and sorting systems, as well as a consistent reduction in informality and vulnerability of informal waste pickers as a result of increased organisation and bargaining power.

There are many possible pathways to inclusive recycling, and the one chosen by a given country or municipality will depend on its particular institutional, social and waste generation context. In the transition from the current situation to the ideal, however, it is critical to place grassroots waste pickers at the centre of reform efforts, beginning with the identification of the population and their needs (e.g. through a census), participatory processes in policy formulation, and consideration of basic rights (to education, health care, safety, child protection and gender equality). It is important to take these aspects into account when designing and implementing actions to increase the added value of informal waste pickers' work, improve their working conditions and reduce their informality and vulnerability.

Study indicator framework

The indicator framework presented in this study reflects the idea of greater inclusion and measures the status of inclusive recycling in 12 cities in the region with reference to this ideal scenario.[4] It is not intended to be an integrated solid waste management framework, as it is specifically designed to focus on the issue of inclusion of grassroots waste pickers. It is not intended to measure recycling but rather the inclusion of waste pickers, and it is recommended to be used in conjunction with waste management system characterisation and market studies, and other contextual studies. At the same time, the study assesses a limited sample of what happens in Latin American and Caribbean cities, which is a limitation.

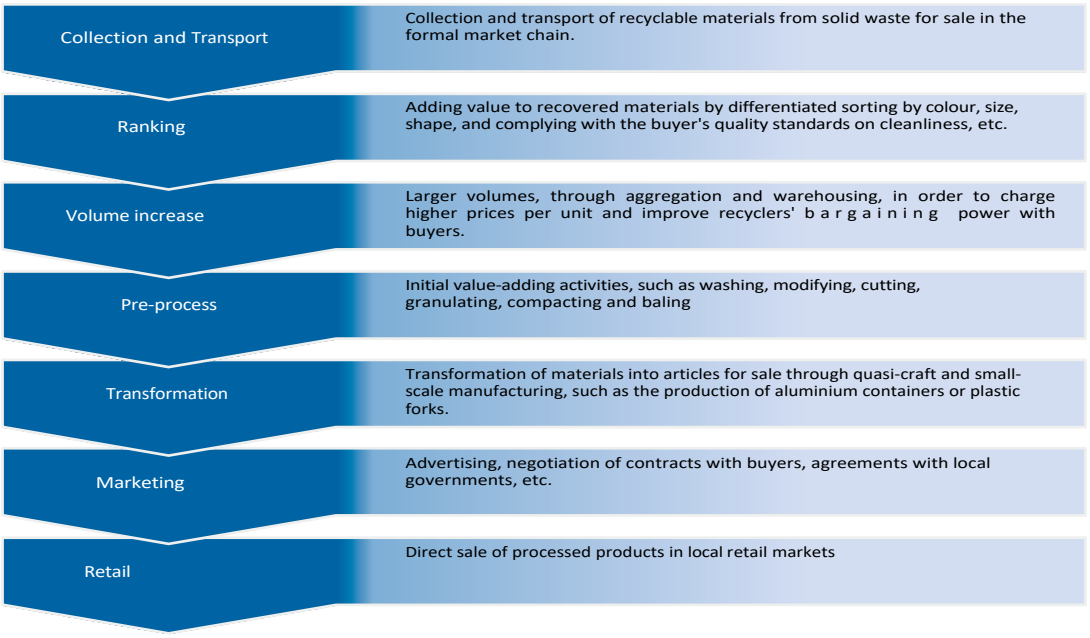
4 Several approaches and analytical frameworks exist to characterise inclusive recycling and waste management; see, for example, UN-Habitat (2010), Velis et al. (2012) and Wilson et al. (2015a, 2015b), among others.

Box 1. Definition of "primary recycler

In the IRR, the term "grassroots waste picker" is used to describe workers (formal or informal) in the recycling value chain. It refers to people who are engaged in the recovery and sale of recyclables in the municipal solid waste stream. While the concept of a municipal solid waste management system encompasses the entire solid waste stream, in general, grassroots recyclers recover specific categories of materials (e.g. PET, paper, glass, metals, etc.). Basic recyclers can intervene at any point in the waste stream, but in general they can be divided into four categories:

1. **Mobile waste buyers**: self-mobile waste pickers who collect, buy or barter materials door-to-door and who have not yet entered the official solid waste stream.
2. **Street waste pickers**: Self-mobile waste pickers who collect materials from household bins or public waste containers, prior to formal collection.
3. **Truck-based waste pickers**: Self-mobile waste pickers who are often municipal or private company employees who informally collect materials that can be resold, and who travel in trucks along rubbish collection routes.
4. **Landfill waste pickers**: waste pickers who do not travel, but operate at landfill sites and recover recyclable materials that are dumped by trucks at the sites for final disposal.

Figure 1. The recycling chain



Sources: IDB/IRR (2013, pp. 14 and 76); Accenture Report (2013).

In order to capture the dynamics of inclusive recycling with respect to the ideal scenario, the initial assessment is organised into three main dimensions, comprised of 10 qualitative indicators, with a total of 37 sub-indicators (associated questions)[5]:

1. A **policy** dimension, to assess the existence of a legal and institutional framework that underpins waste management systems at country and city level, establishes the conditions and boundaries for recycling stakeholders to operate, and examines the specific policy mechanisms that are being implemented to strengthen or initiate the integration of grassroots recyclers as formal actors in the solid waste management value chain.
2. An **organisational** dimension, to capture the different forms of organisation and empowerment of grassroots waste pickers; identify how they consolidate networks and associations to have a greater voice in policy-making and social reform processes; and analyse the development of organisations and economic mechanisms to help strengthen their position and bargaining power in recycling markets.
3. A **market** dimension, to analyse how grassroots waste pickers interact with the broader recycling market (including access to materials, relationships with intermediaries and trade in recyclable waste) and their working conditions in the value chain, including reliability of access to materials, availability of storage and sorting facilities, and fair remuneration in the value chain (Figure 2). At a more advanced stage, the goal would be formal recognition of the legitimate public services provided by grassroots waste pickers within the solid waste management system through the payment of fixed wages.

5 The three dimensions used in the original framework and in the report published in 2013 have been retained. See Accenture (2013).

Actors in the chain value of recycling

Source: BID/IRR (2013).

These three dimensions contain a set of assessment criteria: indicators, sub-indicators and questions to describe the institutional, economic and social environments in which informal recycling activities take place within municipal waste management systems.

In developing these indicators, it was necessary to balance these aspects, taking into account not only the benefits for grassroots waste pickers but also for society as a whole and for the environment. The intention is for the indicator framework to be inclusive and at the same time socially, environmentally and economically sustainable. Increased regulation and/or mechanisation does not necessarily undermine the sustainable livelihoods of grassroots waste pickers. Changes can be introduced in ways that offer them new economic opportunities. The key is to implement the changes gradually and to accompany them with support activities (e.g. training, institutional support and business support) that help prepare grassroots waste pickers to operate safely, sustainably and profitably in new situations. The sub-indicators are therefore designed to allow for the co-existence of these potentially competing forces, while at the same time ensuring that they can be used in a sustainable and profitable manner.

The EU's role in this process has been to promote greater inclusiveness and overall institutional and economic progress.

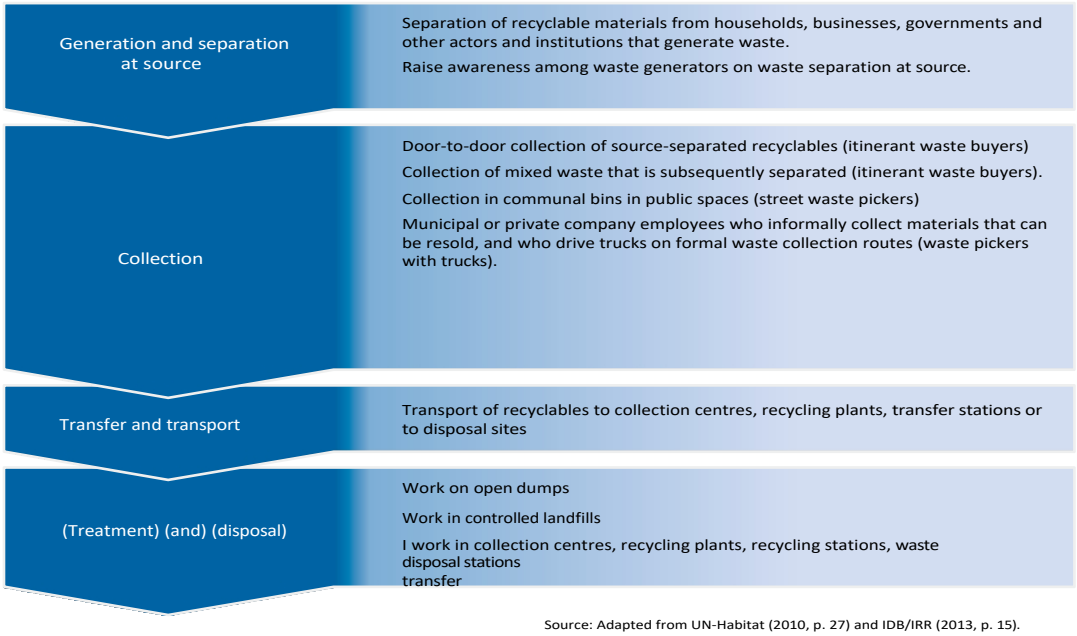
The indicators aim to consider the role of all stakeholders in the inclusive recycling process. These stakeholders, who are part of the waste management landscape, include national, regional and municipal governments, formal private sector actors, organisations, cooperatives, associations and SMEs of grassroots waste pickers, civil society organisations, academia and the general public. However, the key role of local governments (municipal or city) in inclusive recycling is recognised, so more indicators refer to this level of government. This is because: i) the

Box 2. Activities of grassroots waste pickers in the recycling value chain

1. *Collection and transport*
2. *Ranking*
3. *Volume increase (aggregation and storage)*
4. *Pre-process*
5. *Transformation (if organised)*
6. *Marketing (if organised)*
7. *Retail (if organised)*

Source: IDB/IRR (2013)

Figure 3. Where in the solid waste management stream do grassroots waste pickers work?



Source: Adapted from UN-Habitat (2010, p. 27) and IDB/IRR (2013, p. 15).

solid waste management is one of the basic responsibilities of a municipal administration[6]; ii) building on existing recycling networks can help achieve local economic and environmental goals; and iii) informal recycling (and informality more generally) is a significant sector in the LAC region, rooted in labour market irregularities, poor public service provision and inadequate regulation (Loayza et al., 2009). While all stakeholders have a role to play in promoting inclusive recycling, it is governments that have the pro- tagonic role when it comes to meeting the need for solid waste management services and serving one of the most vulnerable groups in society.

Who is the target audience for this study?

The Regional Initiative for Inclusive Recycling (IRR) is committed to supporting increased capacity and coordination between government, the private sector, the media, academia and grassroots waste picker organisations in order to increase levels of inclusion of grassroots waste pickers and strengthen the culture of recycling in all countries in the Latin America and Caribbean region. The study is aimed at these same sectors, providing them with a practical tool that they can use for knowledge sharing and as a benchmark of each city's progress in creating enabling environments for inclusive recycling. The main objectives of the study are to invite key actors in the solid waste management system to participate in the debate and to promote the adoption of policies that are more inclusive of grassroots waste pickers and compatible with the well-being of the wider society and environment.

6 See the explanation of the role of government and stakeholders in integrated solid waste management in the UN-Habitat report (2010, pp. 141-142): "While national authorities create the boundary conditions, it is the municipal authorities who are responsible for solid waste management in a city, i.e. for establishing the legal, regulatory and financial boundary conditions that make it possible to provide the service or to extract materials for recovery. Historically, solid waste management is a municipal responsibility because municipal authorities are the main stakeholders concerned with public health: they are to blame if the service is not provided or is below an accepted or agreed level. This does not mean that they have to provide the service themselves, especially when there are a number of stakeholders who are looking for opportunities to plan the system, make investments, provide the service, organise users, provide equipment to economic actors, valorise materials and keep neighbourhoods cleaner".

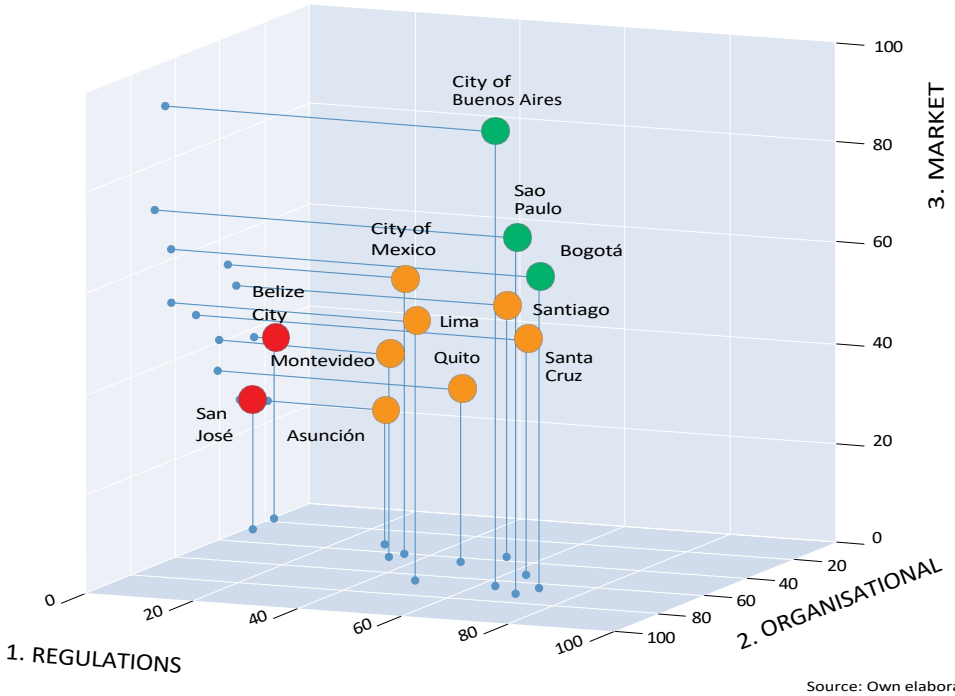
Credits:

III.
Main findings

In order to capture the dynamics of inclusive recycling, the assessment of the 12 cities is organised into three main dimensions: 1) a policy dimension, 2) an organisational dimension and 3) a market dimension. This section contains the most salient results of the assessments in the three dimensions. Figure 4 contains the total score per city in each of the three dimensions.

The three dimensions contain a total of 10 qualitative indicators and 37 sub-indicators (associated questions). For each city, these 37 sub-indicators were assessed following a methodological guide and each was assigned a score between 0 and 100, with 100 being the best. Finally, each indicator was weighted equally to achieve a total score per dimension. In the methodological section

Figure 4. Total score by dimension (0-100)



Source: Own elaboration.

For details of the data collection, scoring and weightings, please refer to the ology section.

In terms of the three dimensions, the market dimension stands out as having the highest score, followed by the regulatory dimension and finally the organisational dimension. None of the three dimensions scored above 50 points on average, indicating that there is still much to be done with regard to the inclusion of grassroots waste pickers in integrated solid waste management systems.

São Paulo, Buenos Aires and Bogota lead in all three dimensions of inclusive recycling

This study has analysed 12 cities in the region, of different sizes and with varying degrees of development of solid waste management and inclusive recycling. The case of São Paulo (Brazil) stands out in most dimensions due to the presence of a fairly strong and participatory national and local policy. In turn, Brazil is one of the LAC countries that has made the greatest progress in this area in recent decades, a strength that is evident in most of the indicators. The Autonomous City of Buenos Aires also ranks in the top three positions in all three dimensions. The City of Buenos Aires has encouraging scores and significant results in terms of standards, recognition of the service provided by waste pickers, and the productive and organisational level of formal organisations. Bo- gotá also scores highly, given its track record in this area. Bogota has strong recycling regulations, and waste picker organisations have made themselves visible to national bodies. Thanks to their efforts, grassroots waste pickers in Colombia are recognised as providers of public sanitation services and are therefore entitled to remuneration similar to that obtained by providers of non-recyclable waste collection services.

In order to achieve greater inclusion, regulations and policies that integrate waste pickers are essential.

The integration of grassroots waste pickers into municipal integrated solid waste management (ISWM) programmes is a new issue, which is currently under development. From the analysis, it was observed that there is a significant difference in the implementation of inclusive recycling processes between the different cities analysed. Most of the cities analysed have legal frameworks that focus on inclusive recycling and the promotion of formal waste picker organisations. This is the case in Bogotá, Buenos Aires, Lima, Quito and São Paulo, which receive the highest score in the implementation of inclusive local regulations (question #2). In other cities (Asunción, San José and Santiago), despite not having regulations, there are programmes aimed at promoting recycling with waste pickers. One of the risks present in the region is the vulnerability of the application of public policies due to the change of local authorities, when these are not linked to the regulatory system through laws or decrees. In this context, the cities of São Paulo and the City of Buenos Aires stand out as having robust legal frameworks that are resistant to changes in leadership (question #3).

The allocation of municipal budgets for the promotion of recycling is based on the development of a legal framework that promotes inclusive recycling. Some cities (Bo- gotá, Buenos Aires City and São Paulo) have taken significant steps in this direction, where legal recognition of the occupation of waste picker as a service provider has been achieved, and municipal budgets are allocated to pay for the services provided by waste pickers (questions #5 and #6).

Legislation that promotes training and education processes related to inclusive recycling is fundamental for the sustainability of the system, since the public, as the main generator of solid waste, must be constantly included in this type of programme. In some cases, there are recycling incentive programmes for the public.

(Bogotá, Lima, São Paulo and Santa Cruz). However, these need to be strengthened in the framework of inclusive recycling (question #12).

More transparency and better data are needed in solid waste management information systems.

The main challenges identified in the evaluations are the lack of public information on inclusive recycling issues and the lack of access of waste picker organisations to be part of tenders for the ISWM chain. In terms of licensing processes in the ISWM system, no city showed that these are fully inclusive and transparent for waste pickers. Nor were any direct opportunities for inclusion identified (question #8).

In addition, no city scored more than half of the scale for generating information on inclusive recycling (Indicator 1.3). Seven of the twelve cities do not have an official waste picker census (question #7). Only Bogotá, Lima, Quito, São Paulo and Montevideo have such an instrument. Collecting data on waste pickers would provide more information on the size, characteristics and conditions of this group of workers.

São Paulo, Bogotá and Buenos Aires have stronger waste picker organisations, while Belize City and San José still have a long way to go.

In the area of waste picker organisation (dimension 2), formal organisations usually have legal and control tools. However, the main constraints for organisations are costly administrative processes and, in some cases, the resistance of waste pickers to organise. In turn, most commercial organisations (co-operatives and micro-enterprises) do not have access to financial mechanisms to finance their activities.

to (question #23). In the vast majority of the ities, waste picker organisations have spaces for the exchange of experiences and dialogue among themselves at the national level. In terms of the level of participation of waste picker organisations in dialogue with municipal authorities and other actors (question #19), Bogotá and Buenos Aires are the cities with the highest scores. It is important to mention that in six cities (Asunción, Belize City, Montevideo, Quito, San José and São Paulo) there are no spaces for dialogue and coordination due to the low level of organisation.

Bogotá, Quito, São Paulo and Santa Cruz have gender equality in terms of participation and leadership in waste picker organisations, but most women lack social tools and protections in their work.

Some studies of informal recycling have found that women form a large part of the informal waste picker workforce.[7] However, women waste pickers face significant inequalities in work, in access to higher-value recyclables, in terms of health risks when working with different types of waste, and in terms of political empowerment, as it is difficult for them to reach positions of authority within formal waste picker organisations, cooperatives and micro-enterprises (WIEGO, 2015b).

The assessments of the 12 cities in this study capture gender inequality. However, the results paint an encouraging picture in certain respects. For example, Bogotá, Quito, São Paulo and Santa Cruz have a high level of presence and representation of women leaders in their organisations: they score the highest (100 points) on this question (#20). On the other hand, there are four cities (Belize City, Lima, San José and Santiago) that score 0.

7 See, for example, WIEGO (2015a).

A recurring theme in the cities analysed is the violence and sexual harassment suffered by women waste pickers. Women do not have adequate infrastructure and tools to carry out their work. Many are forced to bring their children to the workplace because there are no social care and protection programmes and projects, such as day care centres, breastfeeding periods, pregnancy care, among others. In turn, women waste pickers do not always have access to adequate health services, which aggravates their health and psychological and emotional stress.

Waste pickers need to be incorporated into the waste value chain to improve their working conditions and incomes.

Key processes that determine the productivity of waste pickers include safe access to the material, its transport, storage and marketing. In this area, it is critical that local governments and waste picker organisations work together to improve working conditions to enable waste pickers to generate greater value in the chain. As a result of the study, the cases of Ciudad de Buenos Aires and São Paulo stand out as having the best conditions for access to infrastructure for storage and collection of materials (indicator 3.1). The case of the City of Buenos Aires is the only one that incorporates innovative processes in the pre-processing of recyclable materials (question #27). There are green centres with five sorting and continuous presses. These green centres constitute a valuable infrastructure for the work of the cooperatives.

In terms of conditions for the trade of recyclables (indicator 3.2), Asunción, Bogotá, Buenos Aires City, Lima, Mexico City and Quito have the best scores, mainly because the processing industry for recyclables is more developed in these cities and therefore sellers have access to a more competitive market.

In terms of the possibility of hiring waste pickers (question #30), the cities of Buenos Aires, Montevideo and São Paulo pre-establish access to hiring waste pickers in the solid waste management system. Similarly, the cities of Buenos Aires, São Paulo and Bogotá have processes in place to periodically pay waste pickers for services rendered (question #31). At the same time, waste pickers in the cities of Buenos Aires City, Belize City and Mon- tevideo have incomes that exceed the national minimum wage in each country (question #33). In the case of Buenos Aires City, incomes are 57% higher, in Belize City 50% and in Montevideo 7%.

This shows that the increase in the economic income of grassroots recyclers is closely linked to their formal incorporation into the solid waste management value chain and the process of marketing the recyclable material, subject to market conditions.

Credits: Tatiana Candeal

IV.
Findings by dimension

Dimension 1- Regulatory

The **normative dimension** framed in the present study aimed to analyse the current state of design, implementation and control of public policies related to Integrated Solid Waste Management (ISWM), recycling, waste pickers and inclusive recycling in 12 cities.

1) REGULATIONS			
		Average	45,4
	1	São Paulo	70,3
	2	City of Buenos Aires	65,1
	=3	Bogotá	62,5
	=3	Lima	62,5
	5	Santa Cruz	52,1
	6	Montevideo	43,2
	7	Quito	42,2
	8	Santiago de Chile	39,1
	9	Mexico City	33,9
	10	Asunción	32,8
	11	San José	26,0
	12	Belize City	15,6

Score 0-25 Score 26-50 Score 51-75 Score 76-100
Normalised score 0-100, where 100= best.
Ranking of 12 cities: '=' means a tie between two or more. cities.
Indicators and sub-indicators weighted equally in their level.

The dimension has been analysed in relation to 4 indicators: (1.1) waste management policy. This dimension has been analysed in relation to 4 indicators: (1.1) waste management policy, (1.2) integration of grassroots recyclers, (1.3) information generation and (1.4) public health and environment.

São Paulo leads in the normative dimension, followed by Buenos Aires, Bogota and Lima.

In the normative dimension, São Paulo scored highest, followed by Buenos Aires City, Bogotá and Lima. Belize City had the lowest score, followed by San José and Asunción. The other cities scored slightly below the middle of the scale (i.e. below 50%). São Paulo ranked strongly in this dimension mainly for having regulations that target the grassroots recycler (Indicator 1.1) and for integrating the grassroots recycler into the waste management system (Indicator 1.2). Brazil's Law 12.305 of 2010 on Integrated Solid Waste Management Policy integrates waste pickers through actions that include shared responsibility in the life cycle of products, and one of the policy instruments is to encourage the creation of cooperatives or other forms of waste picker associations for their development.

São Paulo's Solid Waste Management Plan was developed through a participatory process involving government, civil society and waste pickers. São Paulo also has a dedicated budget for waste pickers to pay for rentals, processing equipment and the purchase of vehicles. The city plans to create a "Reverse Logistics and Inclusion of Waste Pickers Fund" that aims to strengthen co-operatives through financial support. The work of grassroots waste pickers is recognised as an occupation in the Brazilian Classification of Occupations: under code 5192-05 is the job of Recycler of Recyclable Materials. Lastly, the grassroots waste pickers are recognised as service providers in the management of the city's waste through various programmes and instruments.

A large proportion of cities do not have a municipal legal framework for waste management geared towards inclusive recycling (question #2). Buenos Aires, São Paulo, Quito and Lima have a municipal legal framework for waste management geared towards inclusive recycling with promotion of waste pickers' associativity. Asunción and Bogotá have local regulations that recognise waste pickers. In some cities, despite legal frameworks that do not include waste pickers, actions and programmes are implemented for their benefit (e.g. the formalisation of recovery centres in San José and recycling programmes in Santiago de Chile). In Mexico City, by contrast, informal recycling is prohibited.

The exclusion of waste pickers from municipal waste regulations and policies is partly due to the lack of participatory policy-making processes (question #9). In Asunción, Buenos Aires City and São Paulo, regulations were constructed in a participatory manner between the municipality and waste pickers, and waste pickers' comments and suggestions were reflected in the legal documents. Bogota, Lima, Quito and Santiago de Chile convened waste picker organisations to draft/ update their legal instruments. However, their proposals and demands were not always incorporated. The other cities

The participation of waste pickers in policy-making processes has not been considered in four cities: four cities scored 0 for this question (Be- lice City, Mexico City, Santa Cruz and San José).

The exclusion of waste pickers from waste regulations and policies is also due to the change in local authorities that generates variations in municipalities' priorities and waste management policies (question #3). The case of São Paulo stands out, where stability of municipal policies has been achieved through the implementation of laws and decrees, thus minimising the options for policy change. In most cities, the change of authorities affects the implementation of established programmes for the inclusion of waste pickers (e.g. Mexico City) or there is no continuity mainly due to changing priorities (e.g. Lima).

Significant efforts are being made to incorporate waste pickers into solid waste management.

Some cities have gone beyond incorporating waste pickers into public policy processes and have legally recognised their work or formally incorporated them into the waste management system. In Bogota, Buenos Aires, Lima and São Paulo (which received a score of 100 on question #5), waste pickers are already legally recognised as waste management service providers and have legal tools (decrees and laws) in place. In São Paulo, the profession of waste picker is recognised in the Brazilian Classification of Occupations. In Bogotá, Buenos Aires City and São Paulo waste pickers are recognised as waste management service providers (question #6); in these cities formal organisation and registration of waste pickers is required in order to receive payment for service provision, as well as to benefit from training and equipment. In Santiago de Chile and San José, documents that legally recognise the occupation of waste picker are in the process of being implemented and approval, .

in the waste management chain. In Asunción, Lima, Montevideo and Quito, recognition of waste pickers and their inclusion in the ISWM chain is through municipal ordinances, but these are not fully implemented. The other cities do not legally recognise waste pickers in terms of service provision.

In terms of budget (question #4), the cities of Bogotá, Ciudad de Buenos Aires, Lima, Quito, São Paulo and Santiago de Chile allocate part of their budgets to inclusive recycling (infrastructure, tools, machinery). Bogota and Buenos Aires allocate part of the budget to paying waste pickers for the service, and São Paulo allocates an annual budget to strengthening waste picker organisations (infrastructure, equipment, logistics). The other 6 cities analysed (Asunción, Belize City, Mexico City, Montevideo, San José and Santa Cruz) do not have municipal funding allocated to inclusive recycling and generally have overall budgets for ISWM that do not detail line items or total amounts. However, waste pickers in these cities receive support from the municipality, such as integration into sorting plants and formalisation of transporters (Montevideo) or provision of machinery, maintenance and infrastructure in sorting plants run by waste pickers (Mexico City).

One issue for improvement is the access of waste picker organisations to municipal licensing processes for recycling (question #8). Half of the cities receive a score of 0 on this question. Licensing processes are scarce or very specific, and in some cases waste pickers fail to meet the requirements.

Lack of information on inclusive recycling is a major challenge in the cities analysed.

Indicator 1.3 on information generation has a low score, with an average of 31.3 points out of a maximum of 100 points for the 12 cities. Local governments

The data collection and dissemination programmes of the national and local authorities have not made significant investments to generate information in the framework of inclusive recycling, nor to create sustained communication and dissemination programmes. For example, when the collection of information on PGIRS for the study was carried out, data for many of the series were not found or the data were not recent.

On the question on inclusive recycling information generation (#13), no city scored above 50 points and an average of 12.5 out of 100 points was obtained. Bogotá, Lima and São Paulo generate recycling information; however, they do not have information on recyclers and/or inclusive recycling. Bogotá has published data on the census of recyclers and the amount of waste recovered. In São Paulo, ISWM data are published on the municipal website (they do not include information on waste picker organisations, but provide details on recycling programmes). In Be- lice City, Quito and Santiago de Chile, there is no information system on inclusive recycling; however, collection and recycling data are published. Lima records the number of waste picker groups and ISWM data, but this information is not easily accessible. In Asunción, Montevideo and Santa Cruz, there is no ISWM information system. In the City of Buenos Aires, the law establishes an ISWM information system, but it has not yet been implemented. San José has no data on its recycling programmes.

At the same time, most cities do not have an official waste picker census (question #7). Only five cities (Bogotá, Lima, Montevideo, Quito and São Paulo) have conducted censuses of waste pickers at the grassroots level. In Asunción and Mexico City, regulations require that a register of waste pickers in their jurisdictions be kept; however, this has not yet been implemented. Generating information on inclusive recycling and grassroots waste pickers would be instrumental for all actors involved in the issue in order to gain a better understanding of the situation and issues in the sector. In turn, such information would be a key tool for designing better public policies and making more informed decisions.

Citizens need to be engaged in ISWM and recycling

One of the challenges revealed by the results of this study is the lack of knowledge that citizens have about waste pickers' issues and the social, economic and environmental benefits they generate. In terms of communication with citizens (question #14), only Santa Cruz has ongoing campaigns to promote and disseminate inclusive waste picking in the municipality. The vast majority of cities have sporadic communication campaigns. Bogotá, Lima and São Paulo have campaigns to promote recognition of waste pickers' work. Quito promotes waste separation and delivery to waste pickers who participate in municipal projects. In Quito, there is a mobile app that provides information on what kind of material can be recycled and how to contact the city's grassroots waste pickers. This citizen tool was developed by the organisation ReciVeci and is only available in two neighbourhoods in Quito. In Chile, campaigns are conducted at the neighbourhood level and are associated with municipal projects. In Asunción, Mexico City, Montevideo and São Paulo, campaigns focus on the citizens and do not always include recyclers. Belize City does not have communication campaigns to promote inclusive recycling with dissemination in the municipality.

At the same time, citizens have few incentives to recycle, such as: encouraging separation at source, providing rebates on utility rates, and establishing deposit and refund schemes. Question #12, which addresses this issue, scores an average of 21 points, one of the lowest in the study. Belize City, Bogotá, Lima, Mexico City and Santiago de Chile have recycling incentives for users. In Belize City's regulations, beverage producers, importers and distributors are responsible for recovering their containers, creating an opportunity for recyclers. In Bogotá, there are incentives provided by the current tariff framework, which establishes a 4% discount on the recycling fee for those users of the public waste management service whose selective collection route has a rejection rate of less than 20%. Lima grants a discount voucher to those who deliver recyclable materials on a regular basis. In Lima and Mexico City there are barter incentives. In the case of Mexico City, the objective of bartering is to encourage separation at source of recyclable materials through the exchange of recyclable waste, such as paper and cardboard, PET, glass, tetra pack, aluminium and electronic waste, for agricultural products grown in the Federal District. In Santiago, the recycling programme offers equipment for separation at source and a selective collection system for recyclables.

Dimension 2 - Organisational

The **organisational dimension** analyses the current situation of formal organisations of grassroots recipients in terms of organisation (associativity and/or cooperativism), political incidence, internal and external representativeness, and productive strengthening. This dimension has been divided into two indicators: (2.1) associativity (political organisations such as trade unions) and (2.2) commercial organisations (cooperatives and micro-enterprises).

Buenos Aires, Bogotá and São Paulo lead in the organisational dimension; Belize City and San José are the weakest cities in this area.

Buenos Aires City, Bogotá and São Paulo, in that order, are the most prominent cities in this dimension, while Belize City and San José did not demonstrate any significant associativity on the part of grassroots recipients. It is important to mention that this is the dimension with the lowest score in the present study; the average for the region is (42.2). This result is affected by several factors which are detailed below.

In several of the cities analysed there are waste picker organisations that bring together and represent associations, some of which are legally constituted (legal) and others that work as associations but without legal recognition (de facto) (question #16). In Quito and Montevideo, the associations have the legal status of a union and have a political character, i.e. they defend the rights of their members. In Buenos Aires City and Santa Cruz, the associations are not legally recognised as a union, while in São Paulo, Belize City and Santa Cruz there are no organisations of a political (i.e. trade union) nature. The situation in Mexico City is unique in that waste pickers are employees or volunteers of the waste management company and belong to a union that also represents other groups of workers.

2) ORGANISATIONAL

		Average	42,2
	1	City of Buenos Aires	79,4
	2	Bogotá	70,0
	3	St. Paul's	68,9
	4	Mexico City	51,7
	=5	Lima	46,7
	=5	Quito	46,7
	=5	Santa Cruz	46,7
	8	Santiago de Chile	34,4
	9	Montevideo	33,3
	10	Asunción	28,3
	=11	Belize City	0,0
	=11	San José	0,0

Score 0-25 Score 26-50 Score 51-75 Score 76-100
Normalised score 0-100, where 100= better
Ranking of 12 cities, '=' means a tie between two or more. cities
Indicators and sub-indicators weighted equally in level

Most waste picker associations have decision-making and control tools (by-laws, accountability, register of members), as they must report information to a national authority body (question #17). However, as they do not have legal status, they cannot manage their resources and accounting records on their own (Asunción, Lima and Buenos Aires). In turn, the main constraints to creating and maintaining formal waste picker organisations are the costs and administrative processes involved, as well as the reluctance of waste pickers to join organisations.

Waste picker associations have spaces for exchange of experiences and dialogue at the local and national levels (question #18). There are also spaces for dialogue at the international level, which are mainly coordinated at the local and national levels (question #18).

The Latin American and Caribbean Network of Waste Pickers (LACRE Network). Waste pickers have participated in negotiation tables with national and local authorities to influence public policies (e.g. in Bogotá, Buenos Aires, Montevideo, Quito, San José, São Paulo, Santa Cruz, Santiago de Chile). However, it is evident that the low level of organisation becomes a limitation for the promotion and strengthening of dialogue with other sectors; thus, in 6 of the 12 cities (Asunción, Belize City, Montevideo, Quito, San José and São Paulo), there are no spaces for dialogue and coordination between different actors in the collection value chain (question #19).

Women's representation in associations is high in Bogotá, Quito, São Paulo and Santa Cruz.

The cities of Bogotá, Quito, São Paulo and Santa Cruz stand out, where the majority of waste picker associations are made up of and represented by women (question #20). Similarly, in Asunción, Buenos Aires and Mexico City, 50% of the waste pickers identified are women and in both cases they hold leadership positions in their associations. In Montevideo, women's participation is in the minority; however, they do hold leadership positions. It is worth noting that in sorting plants, 40 per cent are women. In the rest of the cities, information on women's representation in associations is scarce. It is important to mention that none of the cities analysed have training programmes for women (e.g. on empowerment and gender-based violence).

Lack of funding is one of the obstacles to the growth of business organisations.

A higher level of waste picker organisations is reached when they are part of the city's commercial and productive system. At

Regarding the participation in commercial activities of waste picker organisations with the municipality (question #21 and #22), i.e. co-operatives and micro-enterprises, the case of Bogotá stands out, where more than 170 organisations have an economic character and commercialise material with the industry. In Buenos Aires, co-operatives offer collection services under contract with the municipality and sell the material to the best buyer in the market. In Quito, some waste picker organisations work with the municipality through co-ordinated actions in collection, collection, collection, marketing and management. In this case, the municipality provides human resources (administrators), equipment (trucks) and infrastructure (collection centres), but the income from the sale of the material goes to the waste pickers' associations. In Mexico City, waste pickers sell the material through the associations, while in Asunción, the private sector has partnered with waste picker organisations. In Belize City and San José, no trade associations of waste pickers have been identified.

One of the main obstacles to the growth of co-operatives and micro-enterprises is the lack of financing (question #23): in 9 of the 12 cities analysed, commercial waste picker organisations do not have access to financing mechanisms. The resources they have obtained so far have been channelled through NGOs (Asunción, Bogota, Lima, Montevideo, Quito, Santa Cruz). The cases of Buenos Aires, São Paulo and Santiago de Chile stand out, where organisations have access to funding mechanisms. For example, they can access micro-credits, but the administrative requirements are complex for the organisations, making it difficult for them to access them. The industry, in some cases, prefers to provide waste picker associations with machinery rather than financing, thus responding to the needs of their own processes.

Dimension 3 - Market

The **market dimension** analysed the conditions for waste pickers' organisations to become stronger in terms of trade and production. This dimension has been divided into four indicators: (3.1) waste access and storage conditions, (3.2) material marketing conditions, (3.3) waste pickers' income and (3.4) working conditions.

The city of Buenos Aires leads in market size due to good access to and storage of recyclable material and an advanced processing industry.

The analysis positions the City of Buenos Aires as the leader in the dimension (92 points) due to the access and storage conditions for recyclable material, the good marketing environment and the advanced processing industry. The city of Buenos Aires scores close to 100 on all sub-indicators; the only weak issue in this dimension is child labour (question # 34). Following Buenos Aires are the cities of São Paulo and Bogotá. In last position is the city of San José.

Safe access to recyclable material and storage in appropriate conditions are fundamental to the work of the recyclers (indicator 3.1). Organisations in the cities of Buenos Aires and São Paulo have better conditions for safe access to the material, as there are legal mechanisms for direct contracting with the municipality for the differentiated collection service (question #24). In Bogotá, San José, São Paulo, Montevideo and Quito there are agreements/arrangements with large generators for the delivery or commercialisation of material to waste pickers in exchange for money, cleaning or educational campaigns. In Quito, São Paulo and Santiago, recyclers are part of differentiated collection projects and collection points.

3) MARKET

		Average	49,9
	1	City of Buenos Aires	92,0
	2	São Paulo	72,1
	3	Bogotá	62,9
	4	Santiago de Chile	55,4
	5	Lima	52,1
	6	Mexico City	50,5
	7	Santa Cruz	47,8
	8	Montevideo	41,2
	9	Belize City	36,6
	10	Quito	34,9
	11	Asunción	27,4
	12	San José	26,0

Score 0-25 Score 26-50 Score 51-75 Score 76-100
Normalised score 0-100, where 100= best.
Ranking of 12 cities: '=' means a tie between two or more. cities.
Indicators and sub-indicators weighted equally in their level.

where delivery is voluntary on the part of the citizens. As can be seen, certain measures have been taken to ensure that waste pickers have access to recyclables; however, some of these cities do not have a legal tool to contract waste picker organisations for collection services (as shown in question #30 on direct contracting, which is not the case in Asunción, Belize City, Quito, San José, Santa Cruz and Santiago). In Mexico City, as the recovery and sale of recyclable material is carried out by the same waste pickers, neighbours deliver directly and the amount of material recovered depends on the capacity of transport; consequently, little material reaches the waste pickers.

and of poor quality (as is the case in Santa Cruz).

In turn, in Buenos Aires City, São Paulo and Santiago, there are formal municipal systems of differentiated collection with recycling (question #25). In Buenos Aires City, cooperatives are contracted to provide the service, as well as collection from large generators. In São Paulo, legislation obliges the municipality to implement differentiated collection with recyclers; therefore, the municipality contracts with cooperatives to provide the service, while the private company provides the collection of non-usable waste. Santiago provides differentiated collection services with waste pickers in public institutions, businesses, universities, commercial neighbourhoods, shops, fairs and events. In Lima, waste pickers have not yet been included in the differentiated collection system, but the municipality is developing mechanisms to do so. In Quito, there are municipal projects based on door-to-door differentiated collection that include waste pickers. In Santa Cruz, collection is done through contracts whereby waste pickers become employees of the company in charge of providing the service to the city.

In terms of access to storage and sorting facilities (question #26), the situation is mixed: in Mexico City and Montevideo, those waste pickers who work at transfer stations and sorting plants have a space to store and sort material. The level of technical development at at the sorting (or pre-processing) of recyclables by waste picker groups also presents a mixed picture (Question #27). Buenos Aires has the best level of technical development in the sorting of recyclables by waste pickers, with the most advanced waste picker-run processing centre where recyclables (cardboard toys, glasses with glass bottles, etc.) are manufactured. The City of Buenos Aires also has "green centres", spaces where recyclers can collect recyclables.

The cooperatives can select the recyclable materials and allow the cooperatives to carry out the selection in a covered space with good hygiene and safety.

On the other hand, in Asunción, Belize City, Lima, Mexico City, Montevideo, Quito, San José, Santa Cruz and Santiago, most of the processing is done manually, without a truck, press or grinder, and thus middlemen end up adding value to the material.

Cities with more developed processing industries have better marketing conditions.

In terms of the conditions for waste picker organisations to trade recyclables (indicator 3.2), the cities of Asunción, Ciudad de Buenos Aires, Bogotá, Lima, Mexico City and Quito have the best scores, mainly because the processing industry for recyclables is more developed in these cities (question #29). In each country, depending on public policies and national and inter- national markets, some materials are more valued than others by waste pickers (question #28). In cities where extended producer responsibility laws are in place, such as Belize City and Quito, PET and glass containers have a more stable and higher value than other materials.

The selling price of materials also depends on factors such as the level of value addition in terms of logistics, storage and processing/manufacturing, as well as the quantity traded. In Montevideo, the price of PET is higher, but it is easier to recover paper in large quantities, which makes this material more valuable for recyclers. The largest differences in sales prices between recyclers and intermediaries are observed in San José and São Paulo. Asunción, Bogotá, Ciudad de Buenos Aires, Lima, Mexico City, Montevideo and São Paulo are in countries where the converting industry is more developed, and where there are plants with a high level of recycling capacity.

processing plants for all materials that are recovered in each country. In Santiago and Quito, there has been a boom in the processing industry, as the recovery of recyclable materials has increased, but recyclable materials (such as plastic and glass) still have to be imported for the operation of certain industrial plants.

Direct contracting and fixed payment for services are some of the ways for waste pickers to improve their incomes.

The study also assessed the income of recipients, estimating their average income in relation to the national minimum wage (question #33). In this area, Buenos Aires City stands out, where the income of recipients varies between 103% and 157% of the official minimum wage, followed by Belize City and Montevideo. On the other hand, in Asunción, Lima, Quito and San José, waste pickers' income represents less than 50% of the minimum wage in each country. The lowest paid waste pickers are those in San José, where they earn 14% of the official minimum wage. It is important to mention that the monthly income of waste pickers is highly variable (commercial value and quantity of waste), and therefore it is difficult to quantify the monthly average.

Broadly speaking, in cities where waste picker organisations are allowed to contract in waste management and receive a fixed payment for services, waste pickers enjoy greater revenues. With respect to the contracting of waste picker groups in municipal waste management systems (question #30), Buenos Aires stands out in this regard, followed by Montevideo and São Paulo. On the other hand, six cities scored 0 on this question. Buenos Aires City, Mexico City, Montevideo and São Paulo allow (and in some cases favour) the hiring of waste pickers in the ISWM system. In Montevideo, waste pickers are involved in differentiated collection, especially in areas of large producers. In Bogotá and Lima, the regulations do not prohibit the participation of waste pickers in tenders for services. However, they must comply with all the stipulations of the decrees and calls for tender issued by the local authorities.

Bogotá, Buenos Aires City and São Paulo have fixed payment mechanisms for waste picker service providers (question #31). In São Paulo, waste pickers are paid for services in environmental education, for managing drop-off points, and in São Paulo and Montevideo waste pickers working in the sorting plant are paid in addition to the value they receive for the sale of material. In Belize City, the majority of waste pickers are municipal employees, who are paid monthly for their work in the communal waste collection system. In the cities of Asunción, Lima, Mexico City, Quito, San José, Santa Cruz and Santiago, there are no fixed periodic payment mechanisms for waste pickers for services rendered; the remuneration they receive is linked to the sale of the material but not to the service they provide.

Generally, the support waste pickers receive from local authorities is in the form of tools, equipment and infrastructure. Only the City of Buenos Aires and São Paulo have programmes to diversify the services provided by waste pickers (question #32); for example, a group of women in the City of Buenos Aires (Promotoras Ambientales) are dedicated to raising awareness and educating citizens within the differentiated collection zones. The other cities do not have a diversification programme.

Working conditions for waste pickers are still very weak.

The indicator on working conditions (3.4) shows not very encouraging results: 41 points (out of 100) on average for the sample. The best working conditions of the recipients are found in Buenos Aires City and Santiago, and the worst in Asunción, Quito, Mexico City and Montevideo. There are no official figures on child labour in the sample.

the solid waste management chain (question #34). However, the presence of children on the streets in some cities is evident. Buenos Aires is implementing a programme for the eradication of child labour, which includes the placement of children of waste pickers in day-care centres.

The 12 evaluations yielded a poor result in terms of the gender focus of working conditions for women waste pickers (question #35), with an average of 8 points, the lowest score of all the questions. Buenos Aires scored moderately well (with protective measures for pregnant and breastfeeding women and day care for children of waste pickers), followed by Santa Cruz. As for the other cities, they do not have any training programmes for women on gender-based violence or sexual harassment, nor any protection programmes for pregnant or breastfeeding women.

The following are just some of the measures that can be taken.

With respect to waste pickers' access to adequate work tools (question #37), the City of Buenos Aires leads. The quality of the work tools to which waste pickers have access also varies significantly between waste pickers participating in municipal projects and waste pickers working on the streets. There are specific cases (Bogota and Asuncion) that have programmes to support a shift from animal-drawn to motorised vehicles as a means of transport for collection. Likewise, in Bogotá and Belize City, basic implements (T-shirts and bags) are provided to street waste pickers and to those who work in transfer stations and collection centres respectively (gloves, boots, personal protective equipment).

V.
City profiles

The 12 city profiles contain a summary of the most important findings of the assessments. Each profile has a definition of the city (the unit of analysis used), a box with demographic and socio-economic data on the city and a description of inclusive recycling in the city divided into three sections: a) brief description of the ISWM system in the city, b) brief characterisation of the waste pickers at the grassroots and c) the most important challenges in the city in terms of inclusive recycling. The sources used are listed in the Bibliography section of this report.

Credits: Tatiana Candeal

Asunción, Paraguay

Definition of the city (unit of analysis):

Asunción is located on the left bank of the Paraguay River, opposite its confluence with the Pilcomayo River. The city, made up of 6 districts and 68 neighbourhoods, is bordered to the northwest by the city of Mariano Roque Alonso, to the east by the cities of Luque and Fernando de la Mora, and to the south by the cities of Lambaré and Villa Elisa. Asunción is an autonomous municipality, not attached to any department.

SOURCES:
Municipality of Asunción. 2016. Plan Regulador, Dirección General de Desarrollo Urbano [http://sig.mca.gov.py/] United Nations Environment Programme,
Secretariat of the Environment and Municipality of Asunción (Paraguay). 2008. "Perspectivas del Medio Ambiente Urbano. GEO Asunción". United Nations Environment Programme.

Indicators	Asunción, Paraguay
Town, city[1]	2.410.991
GDP (PPP) per capita, city[1]	US$14,902
Percentage of population below the poverty line, city[1]	43,6%
Minimum monthly wage (US$), national[2]	US$283
Gini, city[3]	0,50
Unemployment rate (%), national[4]	5,3%
Share of informal employment (%), national[4]	64,4%
Percentage of urban dwellings in deprived neighbourhoods (%), national[3]	17,6%

1. Canback, metropolitan area.
2. ILO and The Economist Intelligence Unit.
3. UN-Habitat and national sources.
4. ILO.

Brief description of the city's GIRS system

The solid waste management system continues to be a complex task characterised by the problems of population growth, increased waste generation and institutional weakness aggravated by the limitations to extend the coverage of the service and the difficulty in the final disposal of waste. In Paraguay there is legislation at the national level (enacted, but not yet regulated for implementation) and at the municipal level that regulates solid waste management.

Currently the Municipality of Asunción is mainly responsible for the collection, transport and final disposal of urban solid waste. The municipality has a staff of approximately 400 people in charge of urban waste collection and transport. Although the municipality provides collection coverage to approximately 80% of the population, it faces significant logistical problems as it requires more staff, and most of its collection transport fleet is already fully operational.

The waste collection service is out of service on an ongoing basis due to repairs and maintenance. Households that do not receive collection services provided by the municipality burn their waste or dump it in watercourses, ditches, vacant lots or in the street, thus aggravating the environmental situation. Asunción also lacks adequate solid waste disposal, as the city does not have a sanitary landfill. The municipal landfill of Cateura, managed by private companies, does not meet the minimum specifications of a sanitary landfill. The municipality does not have a waste separation programme at source, nor does it have selective collection programmes.

In terms of inclusive recycling, while Municipal Ordinance 408/14 recognises the importance of recycling and the work carried out by waste pickers, little progress has been made in its implementation. Institutional weaknesses, limited resources and lack of knowledgeable technical staff, as well as the fragmentation of responsibilities, the recent floods in Asunción and the change of administration in the municipality in the last year,

have also resulted in a postponement of the implementation of the ISWM system.

The work carried out by those who earn their livelihoods from waste continues to be the responsibility of the municipality and requires a multi-sectoral strategy to address the needs of this extremely vulnerable sector of the population. The issue of recycling, although still ignored by the authorities, has captured the interest of the private sector, which sees in it important economic opportunities.

Brief characterisation of the grassroots waste pickers

Approximately 3,000 waste pickers work informally collecting re-cyclable material on the streets of Asunción. In addition, another 600 to 1,000 work at the Cateura landfill. Waste pickers are characterised by extreme levels of vulnerability, social exclusion, lack of access to basic services and the need to be able to secure an income to meet basic needs. These waste pickers have recognised the opportunities that organising and forming associations can generate and have established several associations that bring together waste pickers primarily on the basis of their geographic location.

However, this important process was limited by the devastating floods in Asunción between 2014 and 2016. Most waste pickers were evacuated and displaced from their homes. The members of these organisations, when relocated to municipal shelters, lost not only their livelihoods and homes, but were also distanced from their networks, and their ability to meet on a regular basis was severely limited. Due to the urgent nature of the natural disaster that struck these communities, most of the NGOs that were supporting the work of the waste pickers had to reorient their actions by concentrating their efforts on evacuation and relocation, temporary housing and basic needs. This has also meant the inter-

The lack of support processes by many of these NGOs, thus affecting their operations and continuity.

The effect of the floods has not only been devastating for the work of waste pickers, but also for the entire strengthening process that has been carried out for years with waste picker organisations. This has once again highlighted the vulnerability of these organisations and the importance of long-term, sustained accompaniment that will enable Paraguay to have waste picker organisations as strong and representative as those in Brazil or Colombia in the future.

Major challenges in the city in terms of inclusive recycling

While Asunción faces considerable challenges, there are also several opportunities that could be exploited in order to put recycling back at the centre of the agenda, such as the implementation of household waste separation policies. This would not only help to increase the recycling market, which would have positive social externalities, but would also help environmental improvement.

The municipality also needs to review the current tax rates for collection, transport and disposal of solid waste so that they cover the real costs of the service. This would help to generate the necessary resources for the creation of a dedicated ISWM team with not only the technical knowledge, but also the necessary infrastructure and machinery to carry out its tasks.

There is also a need to develop multi-sectoral strategies that address the needs of waste pickers by supporting and developing processes to strengthen waste picker organisations. In this regard, the municipality should examine the best mechanisms to encourage the inclusion of waste pickers in the solid waste management model.

Finally, the municipality needs to do a better job in terms of data collection and systematisation regarding the ISWM system, as there is currently no official data available, beyond those generated by studies and/or research carried out with international cooperation resources. ional or independent. Access to reliable data will help not only to understand what is happening at the municipal level, but also to have a better diagnosis of the status of the ISWM system in general and inclusive recycling in particular.

Bogotá, Colombia

Definition of the city (unit of analysis):

The city of Bogotá Capital District is the capital of Colombia. It is located in the centre of the country on the eastern mountain range.
It includes 20 localities: Usaquén, Chapinero, Santa Fe, San Cristóbal, Usme, Tunjuelito, Bosa, Kennedy, Fontibón, Engativá, Suba, Barrios Unidos, Teusaquillo, Los Mártires, Antonio Nariño, Puente Aranda, La Candelaria, Rafael Uribe, Ciudad Bolívar and Sumapaz.

SOURCES:
Mayor's Office of Bogotá. 7 October 2015. City location: http://www.bogota.gov.co/ciudad/ubicación DANE: National Administrative Department of Statistics. Demography and Population - Population Projections https://www.dane.gov.co/index.php/estadisticas-por-tema/demographics-and-population/population-projections

Indicators	Bogotá, Colombia
Town, city[1]	7.964.738
GDP (PPP) per capita, city[1]	US$18,899
Percentage of population below the poverty line, city[1]	40,6%
Minimum monthly wage (US$), national[2]	US$191
Gini, city[3]	0,50
Unemployment rate (%), national[4]	5,3%
Share of informal employment (%), national[4]	69,6%
Percentage of urban dwellings in deprived neighbourhoods (%), national[3]	13,1%

1. Canback.
2. ILO and The Economist Intelligence Unit.
3. UN-Habitat and national sources.
4. ILO.

Brief description of the city's GIRS system

Solid waste collection in Colombia is considered a domestic public service and its regulation is contained in Law 142 of 1994. Within the framework of this regulation, Decree 2981 established in 2013 that the collection (collection, transport, separation and classification of usable materials) is part of the public sanitation service. The law establishes that the service is provided on a competitive basis, i.e. as long as a company meets certain requirements, it can establish direct contracts with users (households) to collect waste and issue an invoice, generally linked to the water and sewerage service, for collection. In Bogotá, solid waste collection prior to 2012 was carried out by private companies. However, because waste pickers demanded that the Constitutional Court exclude them from the city's ISWM system, the Court issued Ruling T-624 in which the District is obliged to include waste pickers as actors in the system.

The District issued Decree 564 of 2012, which establishes the scheme for waste collection with the inclusion of waste pickers in the service, and the Comisión de Regulación de Agua Potable y Saneamiento Básico (CRA), the obligation to define tariffs for the payment of waste pickers for their work in the service. As a result, the District issued District Decree 564 of 2012, which establishes the waste collection scheme with the inclusion of waste pickers. The Decree states that citizens must dispose of recyclable waste in a white bag, and non-recyclable waste in a black bag. Thus, before the vehicle that collects the waste in the black bag passes by, the waste pickers collect the waste in the white bag. Under this scheme, the collection of non-usable waste was carried out by three companies (one public and two private), and the collection of usable waste by organised (associations) or non-organised waste pickers. Subsequently, in 2015, the CRA issued Resolution 720, through which each recycler is remunerated the value corresponding to the Cost of Collection and Transport and the Cost of Final Disposal, which are calculated on the basis of a tariff methodology defined by the CRA.

However, in practice, the culture of separation of solid waste at source by Bogotanos is low, so that waste pickers must break the bags in which the waste is mixed and bring the materials with economic value, especially from citizens residing in single family units. In order to avoid having to weigh recyclables (and pay the fee decreed by the CRA), citizens in multi-family households prefer to separate their waste and hand it over to waste pickers. It should be noted that this scheme will change in the coming months, as during 2016 regulations have emerged that standardise the payment to recyclers, while at the same time encouraging their formalisation, i.e. seeking their incorporation as legal entities that comply with the same requirements as a non-recyclable waste collection service provider.

A brief characterisation of grassroots waste pickers

In 2012 in Bogotá, the Special Administrative Unit of Public Services (UAESP) and the District University of Bogotá conducted a census of waste pickers in which 21,220 were registered, of which 5,797 are members of a waste pickers' association. However, in order to dynamically register the activity of the waste picker population, the UAESP created the Single Registry of Waste Pickers (RURO), which reports a total of 21,950 waste pickers in Bogotá in 2016. Of the total number of waste pickers, 30% are women, although in the associations the proportion is almost 50%. It is estimated that about 3% are under 18 years old and 88% are between 18 and 65 years old. It is also estimated that 69% of waste pickers are heads of households. In terms of social characterisation, 62% are covered by the subsidised health system and 26% have no health coverage at all. 75% have housing or a roof over their heads. Seventy-five per cent have a house or a roof over their heads, while 21% sleep on the streets or in makeshift shelters, which may even be their own wagons. Seventy-four per cent have completed secondary school, 9 per cent have no formal education and the remaining 17 per cent have technical or university degrees. With regard to their work, 87% are dedicated exclusively to this activity, and 55% work during the day. Eighty-six per cent collect with a human-powered vehicle (cart), 57% work 8 hours or less and 37% between 9 and 12 hours a day. 75% provide added value to the material they collect, with the aim of obtaining greater remuneration.

Major challenges in the city in terms of inclusive recycling

Waste picker organisations have become visible to national bodies and, thanks to their efforts, they are now recognised in Colombia as providers of public sanitation services, and are therefore entitled to remuneration similar to that earned by non-recyclable waste collection service providers. Decree 596 of 2016 and its regulation in Resolution 276 of 2016, issued by the Ministry of Housing, City and Territory, have established a scheme for waste pickers to join organisations and meet targets within 5 years, with the aim of registering them as providers of the public sanitation service and gaining access to the fee-based remuneration. However, there is still vulnerability among waste pickers, especially in terms of working conditions, as they do not use personal protective equipment and the vehicles used can cause health problems in the long term. Furthermore, it is important to comprehensively study how the different actors, especially the waste generators, organise themselves to ensure that waste pickers are provided with separated recyclables and adequate working tools.

Belize City, Belize

Definition of the city (unit of analysis):

Belize City is the largest city in the Central American nation of Belize. It is located at the mouth of the Belize River on the Caribbean coast. It extends beyond Mile 14 on the George Price Highway to the west and Mile 8 on the Philip Goldson Highway to the north, at the Haulover Bridge. The city proper is usually divided into two areas: Northside, bounded by the Haulover Creek and ending in the east at the Fort George area, and Southside, which extends to the outskirts of the city and the harbour area and includes the downtown area. Belize City is the capital of the Belize District and is administered by the Belize City Council (a directly elected municipal council).

SOURCES:
Belize City Council Act-Chapter 85
http://www.belizelaw.org/web/lawadmin/index2.html Belize City Council, About Belize City
http://www.belizecitycouncil.org/about-belize-city

Indicators	Belize City, Belize
Town, city[5]	70.800
GDP (PPP) per capita, national[1]	US$8,349
Percentage of population below the poverty line, national[1]	40,6%
Minimum monthly wage (US$), national[2]	US$322
Gini, City[3]	N/A
Unemployment rate (%), national[4]	12,0%
Share of informal employment (%), national[4]	N/A
Percentage of urban dwellings in deprived neighbourhoods (%), national[3]	10,8%

1. Canback.
2. ILO and The Economist Intelligence Unit.
3. UN-Habitat and national sources.
4. ILO.
5. Belize City Council.

Brief description of the city's GIRS system

Solid waste collection and clean-up in Belize City is the responsibility of the Belize City Council, which according to the Belize City Council Act, Chapter 85 (Part VIII, 30-b) has the duty to "coordinate, control, manage or regulate the timely and efficient collection and disposal of all waste from all residential or commercial areas in Belize City". Based on this duty, the municipal authority collects municipal waste, cleans the streets and public areas of the city and transports the resulting waste to the Transfer Station located at Mile 3 of the George Price High way; the waste received by the Transfer Station is either destined for the landfill located at Mile 24 of the George Price High way, or is sorted and destined for the recycling and reuse value chains (between 1% and 2% of what is received). The

The management and operation of the Transfer Station and its operations, as well as the final disposal, are carried out by PASA Belize Ltd., a company contracted by BSWaMA (Belize Solid Waste Management Authority, a national government body constituted under the Solid Waste Management Act, Cap.
224). BSWaMA is a public institution under the Ministry of Natural Resources that has the responsibility to coordinate and improve solid waste management in the country and takes over those segments of the waste management chain that are not efficiently operated at the municipal level.

However, solid waste management at the municipal and national level is characterised by partnerships and contracts between public and private actors. The Belize City Council tenders BWC ("Belize Waste Control Ltd.") for the collection of municipal solid waste (commercial and domestic, when the bags are placed in front of the corresponding doors, or in tanks and spaces).

dedicated) and its transport to the Transfer Station. The collection service is organised in two areas and is provided twice a week (North Area: Monday and Thursday; South Area: Tuesday and Friday); bulky waste is collected every Wednesday. BWC provides the service through a fleet of 12 rear-loaded trucks and 2 dump trucks. BWC receives revenues of about US$50,000 per week for its service; its contract with the Belize City Council has been in place for more than 20 years. It should be noted that the contractual relationship between the Belize City Council and BWC prevents the municipality from actively promoting any recycling initiatives. For this reason, it is the responsibility of civil society and the private sector to encourage a greater incidence of recycling in the country. Street sweeping, removal of waste accumulations and collection of household and commercial waste left on the streets (which are numerous, considering the infrequency of collection and the absence of safe collection times on the days indicated) are services handled directly by the Belize Municipal Council (in-house management) through 112 employees and some dedicated vehicles and machines. The in-house management of these services is fairly recent: until January 2015 the activities were operated by BML ("Belize Maintenance Ltd."), a company that was paid about BZ$78,000 per week. According to the Belize City Council, since management has been brought back in-house, workers' wages have increased (from BZ$3.5 per hour to BZ$5 per hour). Also, payments to workers are more timely and overall costs have decreased significantly (the service now costs between BZ$45,000 and BZ$50,000 per month, which is 35% lower than 2014 levels).

The operations of the Transfer Station and the Final Disposal Site were put out to tender by BSWaMA and awarded to PASA Belize Ltd (a British branch of the Mexican company PASA). The Transfer Station and the Final Disposal Site were implemented between 2008 and 2014 within the framework of the Solid Waste Management, which included, among other things, the closure of the open dump at Mile 3 of the George Price Highway, the closure of two open dumps and the realisation and activation of 2 Transfer Stations along the Western Corridor (road linking Belize City with the capital Belmopan and the border with Guatemala). The project also included the closure of two open dumps and the construction and activation of two transfer stations on the tourist islands of San Pedro and Caye Caulker, and the construction and activation of the sanitary landfill located on the 24th mile of the George Price Highway (where waste from Belize City and other localities is received). The collection and transport of municipal solid waste is estimated at 51.5 tonnes per day, of which between 1% and 2% is sorted at the Transfer Station by grassroots recyclers and destined for the recycling and reuse value chains. The amount of recyclables and reusables that are recovered by grassroots recyclers prior to formal collection is unknown. In Belize City it is the main driver of the recycling value chain, since the purchase of bottles and cans is mandatory by the main national producers of this type of packaging, and marketing is guaranteed and has a fixed price as a consequence of the obligations of the Returnable Packaging Act (National Law No. 12 of 30-12-2009).

A brief characterisation of grassroots waste pickers

In Belize City, informal waste pickers are divided into 3 main segments: (i) recyclers not integrated into formal collection, who are engaged in recovering glass bottles, PET and cans; the total number of these recyclers is unknown; ii) waste pickers integrated into formal collection as cleaners, sweepers/chippers or, to a lesser extent, truckers, who optimise the income from their work by collecting and selling glass bottles, PET and cans; these are about 70 public employees in the service of the municipal sanitation department; and iii) waste pickers integrated into formal collection as cleaners, sweepers/chippers or, to a lesser extent, truckers, who optimise the income from their work by collecting and selling glass bottles, PET and cans; these are about 70 public employees in the service of the municipal sanitation department; and iii) waste pickers integrated into formal collection as cleaners, sweepers/chippers, who optimise the income from their work by collecting and selling glass bottles, PET and cans.

The 25 to 30 operators who operate at the Trans- ference Station are engaged in the sorting and sale of a higher number of recoverable fractions; prior to the Solid Waste Management Project these 25 to 30 operators worked at the open dump at Mile 3 of the George Price Highway.

In addition, there is a sector of informal micro-brokers who buy materials from some of the informal waste pickers and sell them to formal buyers: these are operators with some means of transport, whose main economic-operational function is to ensure the first leg of transport when the waste pickers are too far away from the commercialisation sites. These micro-brokers purchase some of the fractions selected at the Transfer Station and the fractions collected by informal waste pickers in the neighbourhoods of Belize City.

There are no formal or informal waste picker organisations in Belize City. It should be noted that waste pickers involved in formal collection are sometimes unionised (as are other public employees employed by the Belize City Council). However, stakeholders state that issues related to informal collection are not on the agenda for dialogue between the unions and the municipal authority. There is no single union, but workers are represented by a plurality of organisations ("Christian Workers Union" is one of the strongest). In the case of the Transfer Station, despite being concentrated in a single workplace and the presence of warehouses, equipment and other spaces, waste pickers are characterised by a low level of organisation. Even so, there is some 'natural leadership' (these are operators who are able to synthesise the aspirations of others and occasionally take on the role of spokespersons).

Major challenges in the city in terms of inclusive recycling

The main challenge for inclusive recycling in Belize City is to conduct a census of the informal waste picker population, with a special focus on street waste pickers and the group of waste pickers who perform their informal activity in-tegrally with the municipal cleaning and sweeping services. The next step could be related to the recognition of the activity of collecting and selling recyclables and their participation in formal waste management schemes. In the case of waste pickers who are paid a fixed wage for their cleaning and sweeping activities, the main challenge is to maintain the status of rights and stability provided by their working relationship with the municipality, while at the same time finding ways in which their waste recovery activities can be recognised and protected to enable their efficient incorporation into future plans to modernise the ISWM system.

With regard to the informal waste pickers active in the Transfer Station serving the city, the challenge is to build on the gains made in improving the working conditions of waste pickers and extend them to other groups of waste pickers in the city. In addition, the ongoing process of organising the informal waste pickers at the Transfer Station into co-operatives or other legally constituted associative forms needs to be completed. This group of waste pickers has already received training on how to strengthen their level of organisation. It is also necessary to map, recognise and continue to develop their sorting skills so that, in the medium or long term, in the presence of eventual restructuring of the ISWM system, they are not expelled from the system, but maintain and/or find a dignified and satisfactory inclusion in the recycling and reuse value chain. In order to increase the volume of waste recovery (benefiting waste recyclers), it is necessary to

The challenge is to extend the obligations of the national system of shared producer responsibility (Returnable Packaging Act) to more recyclable materials. Obligations should be integrated with mandatory mechanisms that favour coordination between producers, distributors and importers to jointly establish economies of scale.

scale, storage systems and financial protection systems. Through such integrations, these companies will be able to financially and economically sustain their obligation to purchase packaging and durable goods; without such mechanisms, companies are incentivised to evade the law or tend to lobby to lower their level of responsibility.

City of Buenos Aires, Argentina

Definition of the city (unit of analysis):
The Autonomous City of Buenos Aires is the seat of the Federal Government of the Argentine Republic, and has had an autonomous government regime since 1996. It is politically and administratively divided into 15 communes (48 neighbourhoods). The city has an area of just over 200 km^{2}but is the centre of the Buenos Aires Metropolitan Area, with the resulting daily migration of people from the municipalities of the province of Buenos Aires.

SOURCES:

Government of the City of Buenos Aires. Information about the Government of the City of Buenos Aires http://www.buenosaires.gob.ar/gobiernodelaciudad
Constitution of the Argentine Nation. January 3, 1995 http://servicios.infoleg.gob.ar/infolegInternet/anexos/0-4999/804/ norma.htm

Indicators	City of Buenos Aires, Argentina
Town, city[1]	3.081.143
GDP (PPP) per capita, city[1]	US$35,339
Percentage of population below the poverty line, city[1]	14,0%
Minimum monthly wage (US$), national[1]	US$437
Gini, city[2]	0,51
Unemployment rate (%), national[3]	6,9%
Share of informal employment (%), national[4]	46,0%
Percentage of urban dwellings in deprived neighbourhoods (%), national[3]	16,7%

1. Canback.
2. ILO and The Economist Intelligence Unit.
3. UN-Habitat and national sources.
4. ILO.

Brief description of the city's GIRS system

In the City of Buenos Aires there is no clear data on waste generation, but in 2015, 1,524,509 tonnes of wet solid waste were collected, and according to data provided by cooperatives, the collection of dry waste (recyclables) could be approximately 100,000 tonnes/year (50kg/day *5,500 associated waste pickers), thus estimating an average daily generation of almost 4,500 tonnes per day. This estimate does not include materials collected by informal waste pickers who are not associated in co-operatives, nor does it include wet solid waste from special generators that are privately managed.

With regard to collection and transport, the service is provided on a differentiated basis. For the wet waste fraction, the city is divided into seven zones; the service is provided by six private urban hygiene companies and the government's Urban Hygiene Agency (control zone) with common trucks. side-loading or rear-loading compactors. Wet waste is transported to three transfer plants (Pompeya, Flores and Colegi- ales), where the waste is compacted into larger volume containers. For the dry waste fraction the city is divided into 12 zones, and a social management was established in the hands of
12 cooperatives grouping 5,500 informal waste pickers and the city government's Ministry of Environment and Public Space.

Each co-operative has an assigned area where it must guarantee the residents a differentiated waste collection. The collected material must be taken to a place where it will be sorted and conditioned for subsequent sale to the recycling industry. This task is carried out in 8 green centres (collection centres) run by co-operatives of grassroots recyclers. These have, to a greater or lesser extent, the necessary equipment to pre-process recyclable materials. In addition, there is a significant volume of waste material that can be recycled.

The recyclable materials are collected by informal recyclers who are not associated with co-operatives, and who enter the informal recycling circuit through middlemen who buy the recyclable materials in the City of Buenos Aires or in nearby municipalities.

Prior to final disposal in the North III Environmental Complex, 1,100 tonnes are processed daily in a Mechanical Biological Treatment Plant (MBT), where the organic fraction is biologically stabilised (reducing its volume) and then used as part of the landfill cover. Finally, almost 3,200 tonnes of waste are disposed of daily in the landfill.

Brief characterisation of the grassroots waste pickers

Almost all of the informal waste pickers working in the City of Buenos Aires do not live there. Most of them come from different neighbourhoods in the Conurbano, mainly from the municipalities of Lanús, Lomas de Zamora and San Martín, among others. It is estimated that between 9,000 and 10,000 informal waste pickers come to work in the city on a daily basis (although there are approximately 12,000 in the city's Waste Pickers' Register), of which 5,324 are associated with 12 co-operatives currently run by the Government of the Autonomous City of Buenos Aires. These waste pickers carry out differentiated waste collection - both through the "door-to-door" service, i.e. collection from households, and the collection of waste from containers and green points distributed throughout the city - and then sort and condition the waste in the green centres for subsequent sale to the recycling industry.

The city has 8 green centres, managed by 9 of the 12 co-operatives, the remaining 3 have their own or rented sheds. Of the 5,500 waste pickers, 3,000 are associated with a single cooperative (El amanecer de los Cartoneros), which is run by the Movimiento de Trabajadores Ex- cluidos (MTE). The movement brings together not only informal waste pickers from the City of Buenos Aires, but also from other parts of the city.

The main population groups are not only from Buenos Aires, but also from nearby municipalities, especially from the Villa Fiorito (Lomas de Zamora) and Villa Caraza (Lanús) neighbourhoods.

Informal waste pickers who work with the Municipality receive a monthly economic incentive (called an "incentive"), social security, personal accident insurance and a work uniform, and the cooperatives commit to carry out the task in an orderly manner, in accordance with safety and hygiene standards, guaranteeing collection for all residents and shopkeepers in the assigned area. In the case of MTE members living in Lomas de Zamora and Lanús, they are also provided with transport from their homes to the work areas. The MTE has also managed to open two day-care centres that operate at night, one in the municipality of Lomas de Zamora for 200 children and another in the city of Buenos Aires for 80 children; however, they do not cover all the existing needs. The cooperatives have also received lorries on loan to carry out differentiated collection, or in some cases the funds to hire a lorry with a driver and fuel vouchers.

There are two distinct incentives, which are related to the modality of their work: (i) informal waste pickers who collect waste on the street and then sell the materials collected daily on a self-employed basis (either in the City of Buenos Aires or in municipalities in the metropolitan area) have an income of approximately US$266, and (ii) grassroots waste pickers who collect dry recyclable waste from green bins and who collect and market their materials on a partnership basis for a better price (based on their daily productivity) have an income of approximately twice that of waste pickers working in the other mode.

Major challenges in the city in terms of inclusive recycling

The City of Buenos Aires has made great progress in relation to inclusive recycling, also setting a precedent for the

This is the first time in Latin America that the role of the grassroots waste picker has been recognised in a city-wide public service such as Buenos Aires. These advances are manifested in the formalisation of waste picker co-operatives through their incorporation into the public urban hygiene system by signing a contract with the City Government whereby both parties take responsibility for differentiated waste collection, the existence of an area of government dedicated exclusively to relations with waste picker co-operatives, the payment of a direct personal incentive to each waste picker, access to a social service (health insurance) and access for co-operatives to waste sorting and collection centres (green centres). In this way, an activity that used to be carried out without any control becomes an activity co-managed by the state and the co-operatives, with joint social responsibility.

However, there is still a long way to go. The funding mechanisms through which the cooperatives are sustained are not entirely efficient, and resources often do not arrive in a timely manner. To a large extent, this is related to limited technical specifications, but which did not have a comparative model at the time they were drawn up.

Although there is an area of government dedicated to dealing with informal waste pickers, there is a high turnover of officials, which makes it difficult for the continued implementation of public policies. Incentives are a big step towards formalising the sector, but they only reach grassroots waste pickers who are members of co-operatives, and they differ according to the tasks they perform, creating a significant difference in income between them. The challenge is to progressively include new waste pickers in this system in accordance with the agreement between both parties.

Green centres are a very valuable infrastructure for the tasks carried out by cooperatives. However, not all cooperatives are currently equipped with green centres.

a green centre of its own and with the necessary equipment. Of the existing ones, in some cases the maximum capacity for the management of recyclable waste has been reached due to a lack of space for collection. It is also necessary to strengthen the technical capacities of the co-operatives in order to ensure the correct execution of the tasks foreseen in the specifications. The installation of day-care centres in the green centres is a key issue foreseen in the tender documents.

The City Government does not provide information on its website on the amount of waste generated, recovered and disposed of in the landfill, nor data related to the registers of waste collectors and cooperatives. It is inferred that this information is not systematically collected.

Although the City of Buenos Aires has developed its Green City policy, it has not yet fully embraced the environmental and social benefits of the work of grassroots waste pickers. This can be seen from the insufficient budgets allocated to the waste management directorates. There is a need to strengthen the relationship between the two parties to achieve greater mutual benefits.

It is necessary to value the current system as an environmentally, socially and economically sustainable solution, given that it facilitates recovery and significantly affects the volume of waste that is buried in the landfill, contributing to compliance with the Zero Waste Law (Law No. 1854, which sets specific targets for reducing waste landfill), At the same time, it represents an opportunity to address the social dimension of the waste problem in Argentina through the formalisation of thousands of workers who find a livelihood in waste. Another point to strengthen is to raise public awareness of the importance of solid waste separation at source in order to change habits and thus increase the volume of dry recyclable waste collected.

The conditions of the new specifications are currently being discussed, and the informal waste picker cooperatives are requesting that acquired rights be respected, that the new specifications be reviewed, and that the new specifications be revised in order to ensure that they do not affect the rights of informal waste pickers.

The contracting/financing modalities and all working conditions defined in the current specifications, which have not been implemented so far, should be taken into account. One of the issues to be addressed is the implementation of incentives for individual productivity, in order to strengthen the goal of increasing the volume of recyclable material and the consequent reduction of waste going to final disposal.

Regarding the market for recyclables, the city of Buenos Aires is a central location that allows for the

However, it is necessary to promote economic (market control) and regulatory (packaging laws and/or extended producer responsibility) intervention mechanisms based on joint work, including first and foremost the recyclers (cooperatives and associations), who have a deep knowledge of recyclable materials and their circumstances.

Mexico City, Mexico

Definition of the city (unit of analysis):
Mexico City is the capital and largest city in the country and comprises 16 political delegations (which from 2018 will be transformed into "Demarcaciones Territoriales" and governed by "Alcaldías"):
Álvaro Obregón, Azcapotzalco, Benito Juárez, Coyoacán, Cuajimalpa de Morelos, Cuauhtémoc, Gustavo A. Madero, Iztacalco, Iztapalapa, La Magdalena Contreras, Miguel Hidalgo, Milpa Alta, Tláhuac, Tlalpan, Venustiano Carranza and Xochimilco.
Mexico City is the seat of the federal government and the core of the Metropolitan Zone of the Valley of Mexico (ZMVM), which is the country's largest economic, financial, political and cultural centre. It covers an area of 1485 km^2.

Indicators	Mexico City, Mexico
Town, city[1]	9.163.900
GDP (PPP) per capita, city[1]	US$36,410
Percentage of population below the poverty line (%), city[1]	10,3%
Minimum monthly wage (US$), national[2]	US$91
Gini coefficient, city[3]	0,49
Unemployment rate (%), national[4]	4,1%
Share of informal employment (%), national[4]	53,9%
Percentage of urban dwellings in deprived neighbourhoods (%), national[3]	11,1%

SOURCES:
Mexico City http://www.cdmx.gob.mx/ciudad/ Estatuto de Gobierno del Distrito Federal. 26 July 1994 http://www.diputados.gob.mx/LeyesBiblio/pdf/10_270614.pdf
Ministry of the Interior. Constituciones Particulares de los Estados y Estatuto del Distrito Federal http://www.ordenjuridico.gob.mx/constitucionEdo.php
Presidency of the Republic. 2016. Promulgation of the Political Reform of Mexico City http://www.gob.mx/ presidencia/articulos/promulgacion-de-la-reforma-politica- de-la-ciudad-de-mexico-19350

1. Canback.
2. ILO and The Economist Intelligence Unit.
3. UN-Habitat and national sources.
4. ILO.

Brief description of the city's GIRS system

Waste collection and cleaning in Mexico City is carried out by the Secretaría de Obras y Servicios (SOBSE) through the General Directorate of Urban Services (DGSU) and the Delegaciones.[8]Sweeping and collection is carried out by SOBSE on primary roads and by the Delegaciones on secondary roads. The service, which employs 29,000 cleaning workers, is distributed in 1,773 collection routes and 6,754 sweeping routes, and has 2,460 collection vehicles, 12 transfer stations, 2 sorting plants, 2 compacting plants and 8 composting plants.

Formally, the collection and transport service is limited to removing the waste delivered by citizens when the collection vehicles make their stops in the streets. Under this scheme, citizens have to come down to the street with their waste when they hear the sound signals announcing the arrival of the truck. There are days where only organic waste is collected and days where only inorganic (recyclable) waste is collected.

Citizens hand in their waste with the support of the trucks' auxiliary staff. In addition, there are staff who sweep and clean the streets and deliver the resulting waste to the collection vehicles.

In reality, many users compensate for the inconvenience of the formal service by negotiating with street sweepers on the cost and modality of an informal collection service.

8 Political-administrative territorial divisions of Mexico City.

household collection. Street sweepers deliver the waste collected from households to the collection vehicles, sharing the tips received with the collection vehicle staff. Truck staff also receive tips from users who choose to deliver their waste directly to the trucks. Street sweepers and auxiliary staff often separate recyclable dry waste in order to increase their monthly income by selling the recyclable material to private collection centres. Also, truck drivers and attendants often enter into informal waste collection agreements with businesses and large generators, and receive an extra amount of tips. Often clean-up workers manually separate the waste that users bring in mixed waste; alternating collection service (organic and inorganic) and separation of waste at source is often only available in certain areas of the city.

The operational cells, which correspond to the collection routes and are made up of truck staff and street sweepers, are organised and coordinated by the truck driver. The salaries paid by the City Government are low and they play an inte- grative role in a global income, where tips and the sale of recyclables represent the prevailing share. Informal income economically justifies the presence, among the sweepers and macheteros, of volunteer workers, who although they do not receive any salary, have to strictly respect the routes, schedules and tasks indicated by the delegational officials and union representatives. In- formal income is essential for the performance of the service because it supplements insufficient salaries and, in many cases, covers the entire income of the staff involved in the cleaning work.

An estimated 12,800 tonnes of waste are generated daily in the city, of which around 1,950 tonnes are destined for the recycling value chains, thanks to the activity of clean-up workers (an estimated 1,620 tonnes collected) and the work of informal recyclers (an estimated 291 tonnes collected); the remainder is recyclable.

transported to landfills, cement and composting plants. The 1,620 tonnes separated by clean-up workers are diverted directly and informally from the streets into recycling value chains. The other 291 tonnes are separated at two large sorting plants (San- ta Catarina and San Juan Aragon), where members of three informal recycling organisations use space and machinery provided by the City Government. These 291 tonnes represent 17% of the daily flow received at the sorting plants, which comes from some of the transfer stations that capture waste collected on the streets (these recyclables collected by informal recyclers are those that the clean-up workers failed to separate on the streets). The recyclables separated by the informal waste pickers are sold partly to trade unions (who then sell them to middlemen or industry) and partly to middlemen.

Brief characterisation of the grassroots waste pickers

Mexico City's grassroots waste pickers are divided into two main segments: i) clean-up workers and ii) informal recyclers.

Cleaning workers are about
29,000 and are operationally divided between drivers, truck attendants and sweepers; 14,144 of them are salaried workers, about 5,000 are casual workers and about 10,000 are "volunteers". The 10,000 "volunteers" normally have an operational role as sweepers, are not paid and are not officially employed by the government. The "volunteers" participate in the system to benefit from informal income (tips and sale of recyclable material separated on the streets) and to position themselves on the organisational chart while waiting to be formally employed.

The operational cells composed of truck drivers and sweepers are coordinated by the drivers. The cleaning workers are represented by a trade union ("Section One of the SUTGDF") which defends their interests and

The union has a democratic statute and performs, partly informally, human resources management and operational coordination functions (with 361 supervisors). Informal waste pickers number around 3,500 and are organised in 3 unions: Un- ión de Pepenadores del D.F. Rafael Gutiérrez Moreno, AC; Frente Único de Pepenadores, AC; and Asociación de Selectores de Desechos Sólidos de la Metrópoli, AC. The informal waste pickers work in the Santa Catarina and San Juan Aragón sorting plants, using space and machinery provided by the Mexico City Government, on the basis of agreements and minutes with their unions.

Major challenges in the city in terms of inclusive recycling

There are several challenges in Mexico City in terms of inclusive recycling. First, there is a lack of trust between the city's public administration and informal recyclers. The local public administration sees informal waste pickers (and their activity) as an obstacle to the evolution of solid waste management in the City, and tolerates their existence and their way of working to avoid conflict with the unions. However, public officials who are in direct contact with the clean-up workers' operati- ve coordinate together with the union the current scheme, where formal intervention and informal activity are fully integrated. This public-popular synergy, thanks to its peculiar functioning and its informal income, allows for the collection, sweeping, and cleaning of waste, transport and recovery of municipal waste throughout the City. On the other hand, there is no evidence to demonstrate the applicability of a centralised or privatised service that can achieve comparable results and efficiency.

Secondly, formal recognition of the operational and economic processes carried out by waste pickers (cleaners and informal recyclers) is identified as the main challenge, in order to formalise and make the existing system more efficient and consequently improve performance in terms of environmental, economic, hygienic, social and quality of service to citizens.

If processes are recognised and designed, it will be possible to build the social inclusion of informal waste pickers, strengthening their democratic participation in the management of the guilds. It is necessary to develop proposals that emerge from the informal waste pickers themselves and that are technically and normatively appropriate. The recognition of existing processes and the identification of an indigenous model are prerequisites for the process re-engineering needed to: i) implement genuine solid waste separation at source, ii) improve the working conditions of informal recyclers, and iii) stimulate the generation and consolidation of control and transparency mechanisms for the ISWM system.

In the case of cleaning workers, it is necessary to consolidate and regulate the micro-entrepreneurial character of the operational and socio-economic cells, recognising the existing operational leadership, formalising and making the existing public-popular synergy equitable.

Lima, Peru

Definition of the city (unit of analysis):
The metropolitan municipality of Lima is located on the central Peruvian coast, on the Pacific Ocean. It covers an area of 2,664 km(2) ,and is made up of 43 districts, divided into four zones: Lima Norte, Lima Centro, Lima Sur and Lima Este.

SOURCES:
Metropolitan Municipality of Lima. 2014 PIGARS of the province of Lima 2015-2025. http://censos.inei.gob.pe/censos2007/documentos/Resultado_CPV2007.pdf

Indicators	Lima, Peru
Town, city[1]	10.077.310
GDP (PPP) per capita, city[1]	US$16,810
Percentage of population below the poverty line, city[1]	36,4%
Minimum monthly wage (US$), national[2]	US$217
Gini coefficient, city[3]	0,40
Unemployment rate (%), national[4]	3,8%
Share of informal employment (%), national[4]	74,3%
Percentage of urban dwellings in deprived neighbourhoods (%), national[3]	34,2%

1. Canback.
2. ILO and The Economist Intelligence Unit.
3. UN-Habitat and national sources.
4. ILO.

Brief description of the city's GIRS system

In Lima, solid waste collection has been set up to take place at two different frequencies so that ordinary, non-recyclable waste is collected by the urban cleaning service provider and recyclable solid waste is collected by informal waste pickers' co-operatives. Co-operatives wishing to be part of the recyclable waste collection system must be authorised by the municipality, otherwise it is considered illegal. Waste pickers who are not affiliated to an association and do not carry a card that identifies them as such are penalised. It should be noted that the companies providing street cleaning and non-recyclable waste collection services have contracts with the municipality and are paid for their services, while waste picker co-operatives are not paid for their services but only for the marketing of their products.

of recyclable material. On the other hand, although citizens are required to deliver waste separately, waste separation at source is still very precarious and co-operatives do not manage to collect sufficient quantities of material. Furthermore, the programmes implemented by municipal authorities to improve waste separation at source have not corrected this situation.

Municipal collection and recycling service programmes vary. Municipalities comprising socio-economic strata A and B are better organised (e.g. La Molina, Surco, Miraflores and San Isidro). A very different aspect is noticeable in municipalities with higher population density in socio-economic strata D and E in the cones of Lima. In turn, the quality of solid waste varies by stratum; waste in municipalities of strata D and E is denser and its treatment is different, which should be reinforced in community training.

Brief characterisation of the grassroots waste pickers

Approximately 40% of the grassroots waste pickers in Lima are associated with an economic waste pickers' group. Those who are members of an organisation with a permit from the municipality collect waste from households that separate at source. The other waste pickers collect recyclables from the streets. These waste pickers tend to specialise in one type of material and trade it with middlemen, while organised waste pickers take the collected waste to sorting plants and trade it with industries or other middlemen. Organised waste pickers are supported by the government to receive vaccinations, uniforms and, in some cases, sorting and packaging equipment. However, they work with their own transport equipment and many lack personal protection equipment. Unorganised waste pickers, unlike organised waste pickers, do not receive government assistance.

Major challenges in the city in terms of inclusive recycling

Lima requires efforts, firstly, to improve the culture of citizens in relation to the proper separation of solid waste at source. Secondly, it is necessary to rethink the role of informal recyclers as providers of collection services, for which, like urban cleaning service providers, they are entitled to receive a fixed income. Third, incentives are needed to enable the integration and formalisation of other grassroots waste pickers who have not accessed associative schemes. Fourthly, it would be desirable to mobilise neighbours to improve their recycling culture and behaviour, using a system of works incentives for increased recycling, which can include works such as neighbourhood improvement and safety or traffic lights in blocks and neighbourhoods. Finally, the working conditions of waste pickers should be improved so that they have adequate vehicles and protective equipment to safeguard their health and safety at work.

Montevideo, Uruguay

Definition of the city (unit of analysis):
The city of Montevideo is organised into 8 municipalities that function as the local government body and as the territorial jurisdiction where local governments are established. Thus Montevideo is made up of municipalities A, B, C, Ch, D, E, F and G.

SOURCES:
National Directorate of Official Printing and Publications. 2009. Law No. 18567 Decentralisation in Departmental, Local and Citizen Participation Matters h t t p s : / / www.impo.com.uy/bases/leyes/18567-2009
Municipality of Montevideo. November 2013. 2011 Census Report: Montevideo and Metropolitan Area http://www.montevideo.gub.uy/sites/default/files/informe_censos_2011_mdeo_y_area_metro.pdf

Indicators	Montevideo, Uruguay
Town, city[1]	1.716.023
GDP (PPP) per capita, city[1]	US$24,149
Percentage of population below poverty line, (%) city[1]	22,0%
Minimum monthly wage (US$), national[2]	US$249
Gini coefficient, city[3]	0,43
Unemployment rate (%), national[4]	8,1%
Share of informal employment (%), national[4]	33,2%
Percentage of urban dwellings in deprived neighbourhoods (%), national[3]	N/A

1. Canback.
2. ILO and The Economist Intelligence Unit.
3. UN-Habitat and national sources.
4. ILO.

Brief description of the city's GIRS system

In 2011, the Municipality of Montevideo (IM) renewed the seven-year concession for the collection of solid urban waste to the company Consorcio Ambiental del Plata (CAP). This concession only covers the old city, the city centre and some areas of influence in the city centre. In the rest of the city, collection is carried out by the municipality's staff. An important factor was that it included the integration of a system of incorporating street bins for the selective collection of solid urban waste. In this way, the separation of solid waste at source was implemented in Montevideo. Waste is transported to the Montevideo sanitary landfill, called Felipe Cardoso, where approximately 1,400 tonnes per day from Montevideo enter.

In 2013, the same company began to provide urban assimilable waste management services to large producers, retailers, banks and companies in general, entities which are responsible for the management of urban assimilable waste.

The service may be provided by other transport undertakings. The service can be performed by other transport companies (according to the regulation of this service, they can transport but not sort the waste they recover), and is materialised through private contracts between these transporters and the private companies.

Since 2007, with the roll-out of the Non-Reusable Packaging Law, the MFI began to work on packaging collection by transporting packaging in its own trucks for large producers. These trucks and those of CAP, which transport solid waste from segregation containers in the streets and containers in the city, arrive at the 4 container sorting plants that are monitored by a Trust Fund (composed of the Ministry of Social Development, the Municipality of Montevideo and the Chamber of Industry). These plants are operated by former informal recyclers, many of whom have been banned from the city centre since the introduction of the street bins.

A brief characterisation of grassroots waste pickers

There are no precise figures on informal waste pickers, but it is estimated that between 3,000 and 5,000 people work in materials recovery. Informal waste pickers are divided into several groups:

a) Those working in the 4 sorting plants within the packaging law. They are employed by the Trust and therefore have a workplace, a fixed salary and social benefits.

b) Those that are integrated in cooperatives. There are 5 of them at present in Montevideo that provide services to companies, not to the municipality. Although they have their problems, basically of internal management, it can be said that they are well organised.

c) Those working as transporters who provide services to large producers by collecting their urban waste, and who, in principle, cannot carry out the sorting of recoverable materials, but only the transport.

d) And finally, those who work informally, individually (family members) or in the landfill of Felipe Cardoso. This group has the worst working conditions and is not associated. The Union of Urban Solid Waste Sorters (UCRUS) gives them some coverage and has (according to several sources) a certain amount of power with the administrations to lobby on behalf of Uruguay's waste pickers.

Major challenges in the city in terms of inclusive recycling

One of the main challenges is to facilitate access to recyclable materials as easily as possible, but at the same time without causing problems and inconvenience to neighbours. This is the case, for example, with plants that recover PET plastic.

At the same time, sorting plant operators do not have adequate incentives to sort more material, as they have become comfortable with the secure income they receive from their work. Incentives should be created to enable them to increase their income, while at the same time gaining more efficiency in sorting. There is also a need to improve collection, sorting and transport systems so that waste enters in better conditions.

The work of waste pickers should be recognised, training and financial support should be made available to enable them to move up the recycling value chain and, at the same time, to seek new sources of waste.

Quito, Ecuador

Definition of the city (unit of analysis):
The city of Quito is made up of 32 urban parishes and 33 rural and suburban parishes. Each parish is made up of neighbourhoods. The Metropolitan District of Quito is divided into 8 zonal administrations that allow for the decentralisation of some of the Municipality's services.

SOURCES:
Municipality of the Metropolitan District of Quito http://www.quito.gob.ec

Indicators	Quito, Ecuador
Town, city[1]	1.753.997
GDP (PPP) per capita, city[1]	US$21,075
Percentage of population below poverty line, (%), city[1]	40,7%
Minimum monthly wage (US$), national[2]	US$318
Gini coefficient, city[3]	0,51
Unemployment rate (%), national[4]	4,8%
Share of informal employment (%), national[4]	56,4%
Percentage of urban dwellings in deprived neighbourhoods (%), national[3]	36,0%

1. Canback.
2. ILO and The Economist Intelligence Unit.
3. UN-Habitat and national sources.
4. ILO.

Brief description of the city's GIRS system

Integrated Solid Waste Management services in Quito are provided by two metropolitan public companies: Empresa Pública Met- ropolitana de Aseo (EMASEO), in charge of sweeping, collection, transport and transfer services, and Empresa Pública Metropoli- tana de Gestión Integral de Residuos Sólidos (EMGIRS-EP), in charge of waste management and final disposal. The average per capita production (PPC) of waste is 0.80 kg/person/day. Approximately 2,000 tonnes are collected daily and there is 98% coverage of the collection service. The payment system for these services is based on a percentage of the electricity consumption bill (15%). In 2003, the open-air dump was technically closed and the "El Inga" landfill, located 40 km from the city, was implemented. Quito has two transfer stations, ET Norte and ET Sur, where waste from different sectors of the city is taken for compaction.

The transfer stations have solid waste sorting processes. The transfer stations have solid waste sorting processes: in the North Waste Transfer Station this is done manually with the presence of more than 200 grassroots recyclers, and in the South Waste Transfer Station it is done mechanically, where a sorting plant has been implemented and is being tested in 2016. Currently, there are differentiated collection service projects that reach 8% of the population, including 111 grassroots recyclers, who carry out collection, transport, sorting and collection activities jointly with the municipality. Four collection centres, called Environmental Education and Management Centres (CEGAM), have been set up and are located strategically throughout the city.

At the civil society level, in Quito there are initiatives and projects promoted by cooperation agencies, NGOs and foundations, as well as citizen and neighbourhood collectives that promote separation at source, the direct delivery of recyclable material to grassroots recyclers, and training, advisory and training programmes.

linkage between ISWM actors with the aim of promoting recognition and formalisation of the grassroots waste picker in order to achieve inclusive and sustainable recycling.

A brief characterisation of grassroots waste pickers

In the city of Quito there are more than 2,400 informal waste pickers, 70% of whom are women. At the national level, only 6% of waste pickers are formally organised,[9] mostly through the creation of associations. However, 50% of grassroots waste pickers express interest in joining formal associations. In the city of Quito there are 11 waste picker organisations, 100% of which are represented by women. The vast majority of informal waste pickers work in precarious conditions, i.e. they collect waste at the curbside just a few moments before the collection truck passes by the EMA- SEO. There is a historical sectorisation of work among waste picker groups, i.e. a self-definition of the territory in which they carry out their work. The vast majority of waste pickers pay for the service of transporting the recovered material to their homes or to the organisation's warehouses, where the waste pickers pay for the service.

The associations then proceed to sort and market through intermediaries. In addition, most of the associations sell their materials to intermediaries in the streets after the collection process. Only a minority of waste pickers have coordinated working processes with the municipality of Quito and sell directly to recycling factories.

Major challenges in the city in terms of inclusive recycling

The main challenges facing the city in terms of inclusive recycling are as follows:
i) to include source separation and differentiated collection processes, considering that a containerisation system is being implemented that will cover 80% of the city, ii) sectorisation and certification of more than 2,400 grassroots recyclers working in different sectors of the city, iii) formal inclusion of 50% of grassroots recyclers in Integrated Solid Waste Management systems by 2025, in accordance with the methods established in the Integrated Solid Waste Management Master Plan, and iv) design and implementation of a policy of payment for the provision of recycling services to grassroots recyclers.

9 Inclusive Recycling and Grassroots Recyclers in Ecuador, IRR 2014-2015.

San José, Costa Rica

Definition of the city (unit of analysis):
The canton of San José has an area of 44.62 km^{2}and is made up of 11 urban districts. Together with 30 other cantons, it makes up the Greater Metropolitan Area (GAM).

SOURCES:
Website of the Municipality of San José: www.msj.go.cr
Office of the Comptroller General of the Republic, Operational and Evaluative Audit Division. "Operational Audit of Ordinary Waste Collection". 2016

Indicators	San José, Costa Rica
Population, Canton of San José[5]	349.152
Town, city[1]	1.183.448
GDP (PPP) per capita, city[1]	US$28,909
Percentage of population below the poverty line, (%), city[1]	21,2%
Minimum monthly wage (US$), national[2]	US$417
Gini coefficient, city[3]	0,47
Unemployment rate (%), national[4]	8,4%
Share of informal employment (%), national[4]	31,5%
Percentage of urban dwellings in deprived neighbourhoods (%), national[3]	5,5%

1. Canback.
2. ILO and The Economist Intelligence Unit.
3. UN-Habitat and national sources.
4. ILO.
5. www.msj.go.cr

Brief description of the city's GIRS system

The solid waste collection and transport system in the canton of San José is the responsibility of the Department of Environmental Services (DSA), specifically the Collection Services Section, for which it has 22 collection trucks that provide the service in a five-sector scheme for the canton. The only sector of the canton to which the municipality does not directly provide waste collection services is Ciudadela La Carpio, which, by virtue of an agreement with Berthier EBI de Costa Rica S.A., the company that manages the La Carpio Sanitary Landfill, receives the service from this company.

In addition, there are a number of private collection services that serve public and private customers who generate special waste, such as hospital waste or used tyres.

Solid waste is disposed of in the La Carpio Landfill, which started operations in 2001 and is estimated to have a useful life of 15 to 20 years. At the moment, actions are being evaluated to extend the useful life of the landfill, specifically to distribute the final disposal in 2 landfills instead of one.

Recycling is still in its infancy in the canton. Although a municipal recycling system has been in place for six years, the recycling rate is less than 1% of the total waste collected.

The municipality implements a differentiated collection system for recyclable waste, and is directly responsible for the collection and transport of recyclable waste - paper, cardboard, plastics, metals, glass and tetra pack - previously separated by local organisations or private users. This system is organised into 11 routes, one for each district of the canton.

The collected recyclable waste goes to the Valorisable Materials Recovery Centre, located in the Hatillo District, for weighing, sorting, packaging, storage and sale. It has a 2,000 $m^2$and 500 m^2built-up land, and a team of 27 people working in the centre and in collection work on site.

In order to carry out recycling, the municipality implements 3 models for the collection of waste:

1. Collection by "environmental partners" in the 11 districts: Individual households or groups of neighbours who organise themselves, separate their waste and request the service from the municipality. It also includes companies, businesses and banks.
2. Campaigns: 280 campaigns per year, which consist of organising on-site activities for selective collection in neighbourhoods, setting up spaces in parks or public areas where people take their separated waste.
3. Enabling community organisations to provide a differentiated collection service, through community training, to stimulate the local economy. The community is trained, directly or through NGOs or students, to identify and separate recyclable waste, including facilitating the link between neighbours and the company that buys the materials. In San José there are community organisations benefiting from public programmes and projects that have dedicated themselves to the collection of recyclable material for sale or for handicrafts, as a way of benefiting their members and generating income.

The municipality has a goal of identifying informal recyclers to collaborate with community organisations in order to enable new allies in the integrated management of waste in the canton. The idea of the municipality, together with the Ministry of Health, is to establish a network of different types of waste pickers (community, informal) to mobilise the recycling economy. The National Strategy for the Separation, Collection and Recovery of Waste set goals: in 4 years, the municipality has set up a network of waste pickers.

years the municipality should be recovering 15% of recoverable waste. Given that they currently recover less than 1%, they see that joining efforts of all actors could be a good way forward.

A brief characterisation of grassroots waste pickers

In the municipality of San José, there is awareness of the existence of an informal sector of street vendors operating in the canton, especially in commercial areas. However, they are associated with destitution, health problems and addictions. For many years, the sector was completely ignored and rather associated with urban aesthetic problems. In fact, what the municipality considered to be inclusive recycling or grassroots waste pickers were community organisations - mainly of women heads of households - who were encouraged to work in recycling in the canton.

After the decline of the role of community organisations in the municipal recycling system, due to the lack of economic incentives, the low recovery rate and the falling sales prices of recyclable materials, the municipality is looking with interest at the role that the informal sector could play as partners in the municipal recovery goals.

An important role in this change of vision has been played by the Ministry of Health, as the governing body for waste management, and its new and decisive approach to the inclusion of waste pickers, embodied in the National Strategy for Waste Separation, Collection and Recovery. In this line, the Municipality of San José, together with the Ministry of Health, has plans to start in 2017 to start information gathering campaigns in the informal sector, to develop formalisation and coordination strategies to increase recovery rates.

The Ministry of Health has been sensitising itself from a supervisory and exclusionary attitude towards grassroots waste pickers to an inclusive attitude that seeks to integrate them into the new solid waste management. There is still a long way to g o , but the policy framework

already exists in the National Strategy for Waste Separation, Collection and Recovery (2016).

Until 2000, there was a landfill site in the canton of San José, Río Azul, with a significant presence of grassroots waste pickers, but it was closed and the waste pickers were removed. There was support from different actors to facilitate their re-conversion, but there is no record of what happened to them. They may have moved to the streets. There is a significant population of people who collect recyclable materials on the streets, mainly cardboard and metals. But to date there is no approach or knowledge on the part of the municipality of this reality of recycling in the canton.

There are other inclusive recycling initiatives beyond the metropolitan area. Some municipalities, for example in the provinces of Guanacaste and Punta Arenas, have developed alliances or efforts to strengthen or involve grassroots waste pickers in selective collection, either at the initiative of their officials or as a result of relationships with or efforts by grassroots waste pickers. However, this process does not exist in the Canton of San José.

Major challenges in the city in terms of inclusive recycling

San José faces several challenges in terms of inclusive recycling. Firstly, recycling activity is still in an incipient state in Costa Rica. There are recycling initiatives that have worked well, but recovery rates are very low, as in the case of the Municipality of San José. The vast majority of recyclable waste is being left in landfills or directly in the environment. Municipalities have not prioritised differentiated collection of recyclables, and the strategy of promoting community entrepreneurship to raise recycling has not been successful. The ingrained waste management culture in society does not help, and continuous efforts of awareness raising and education, accompanied by concrete systems for the management of valuable recyclables, must be made to put a new culture into practice.

Second, there is low participation of informal recyclers in the value chain. Finally, perhaps the biggest challenge is to establish funding in line with the challenge posed by the new National Strategy for Waste Separation, Collection and Valorisation. It is striking that this strategy does not have resources, but rather aims to "redirect" existing resources. This could be an obstacle to the progress of what is planned.

Santa Cruz, Bolivia

Definition of the city (unit of analysis):
The city of Santa Cruz comprises 12 urban districts (where all the information is based) and 4 rural districts, which are: Piraí; Norte interno; Estación Argentina; El Pai; Norte; Carretera a Cotoca; Villa 1º de Mayo; Plan 3.000; Palmasola; El Bajío; Central; Nuevo Palmar; Viru; El Dorado; Guapilo; Palmar del Oratorio.
SOURCES: http://www.concejomunicipalscz.gob.bo/portal/index.php/participa/mapas-importantes/mapas-de-los-distritos http://www.ine.gob.bo/indice/atlasmunicipal.aspx

Indicators	Santa Cruz, Bolivia
Town, city[1]	2.184.403
GDP (PPP) per capita, city[1]	US$8,092
Percentage of population below the poverty line, (%), city[1]	68,3%
Minimum monthly wage (US$), national[2]	US$261
Gini coefficient, city[3]	N/A
Unemployment rate (%), national[4]	3,9%
Share of informal employment (%), national[4]	75,1%
Percentage of urban dwellings in deprived neighbourhoods (%), national[3]	43,5%

1. Canback.
2. ILO and The Economist Intelligence Unit.
3. UN-Habitat and national sources.
4. ILO.

Brief description of the city's GIRS system

The collection of solid waste in the city of Santa Cruz is the responsibility of the decentralised municipal company EMACRUZ. In 2013, EMACRUZ decided to launch an international tender, and a Brazilian company was contracted for a period of five years. The tender specifications included a number of conditions regarding recycling management. Thus, a series of infrastructures had to be created to facilitate recycling for citizens.

The company has both regular collection trucks and trucks for differentiated collection. Ordinary collection covers practically the entire city and is carried out at different collection frequencies depending on population density (between 1 and 4 days a week), while differentiated collection has now been introduced in 5 of the 12 urban districts of the city and is carried out one or two neighbourhoods a week.

is per week with 12 transport units and 3 persons in each.

Waste from differentiated collection enters the Normandy plant, where it is sorted by a group of 50 informal waste pickers who work there.

To support the implementation of the service, awareness-raising and training campaigns are carried out for citizens and public officials. These campaigns are carried out by both the concessionary company and EMACRUZ, and in both cases volunteers from universities are often involved. The collected waste is deposited in the Normandía landfill, which is owned by the municipality and managed by the concessionary company.

A new tender is planned for 2018, with the possibility of incorporating informal waste pickers' associations into the municipal system, as national companies are to be invited to participate in this tender.

A brief characterisation of grassroots waste pickers

The vast majority (80%) of waste pickers are women. Waste pickers come from the poorest districts of the city or from more rural populations in the surrounding areas, and are generally women fleeing domestic violence and with dependent children. These people find in the collection of materials a source of income that does not require too many requirements for them to be able to do so.

They work at night, when the neighbours have deposited the bags with their waste in the street or in the containers and before the municipal truck arrives to collect everything. They are subjected to insults and harassment from neighbours who see them, saying that when they open the bags they leave the waste scattered on the ground.

Over time, women waste pickers have organised themselves into small associations without legal status, seeking understanding and fellowship rather than any real benefit. But evolution led them to create associations with minimal management structures. In 2011, thanks to a MIF project, the Santa Cruz Collectors' Network association obtained legal status and some negotiation capacity, which has been improving over time, although they would need support to be able to fully develop their capacities as an association.

Major challenges in the city in terms of inclusive recycling

The municipality could implement door-to-door selective (or differentiated) collection, which would improve collection rates of recyclables, and this service could be provided by recycling associations. At the same time, data collection and information systems should be improved so that they can monitor what is happening and implement variations in their plans according to the results obtained.

Waste pickers' associations should improve their training and increase the number of formalised associations with legal status, which would give them much more power in the eyes of administrations, intermediaries and recycling companies. This would also enable them to offer environmental services.

Citizens have little knowledge of the reality of informal waste pickers, who are doing a very hard job, and should support them in their work by sorting their waste to make their work easier.

Santiago de Chile (Commune), Chile

Definition of the city (unit of analysis):

For the present analysis, the Commune of Santiago was used as the main focus and the findings were compared with the normative dimensions of four other communes: Las Condes, Providencia, Maipú and La Pintana.

The Commune of Santiago is the capital municipality of the Province of Santiago, which has 31 other municipalities. The Province of Santiago is one of the 6 provinces that make up the Metropolitan Region.

SOURCES:

Intendencia de Santiago. 2012. Geographic Information http://www.intendenciametropolitana.gov.cl/informacion_geografica_2.html

Municipality of Santiago. National Population and Housing Census and the Social Characterisation Survey. http://www.observatoriosantiago.cl/estadisticas-comunales/

Indicators	Santiago de Chile, Chile
Population, Commune of Santiago[5]	372.330
Population, Santiago city (32 communes)[1]	6.548.982
GDP (PPP) per capita, city[1]	US$25,267
Percentage of population below the poverty line (%), city[1]	27,7%
Minimum monthly wage (US$), national[2]	US$299
Gini coefficient, city[3]	0,56
Unemployment rate (%), national[4]	7,0%
Share of informal employment (%), national[4]	35,8%
Percentage of urban dwellings in deprived neighbourhoods (%), national[3]	9,0%

1. Canback.
2. ILO and The Economist Intelligence Unit.
3. UN-Habitat and national sources.
4. ILO.
5. National Institute of Statistics.

Brief description of the city's GIRS system

Waste management is carried out by each municipality and there is no administrative body at regional (Metropolitan Region) or provincial (Province of Santiago) level. There are associations of municipalities that provide some services in partnership. In general, the vast majority of municipalities in the metropolitan region manage their waste from a collection and final disposal logic, and communal recycling programmes are an annex to waste management. According to figures from the Regional Ministry of the Environment, in 2012, 2.9 million tonnes of waste generated in the city of Santiago were disposed of in authorised sites in the Metropolitan Region.

The Commune of Santiago produces 184,706 tonnes of waste annually and the trend is increasing, as a result of the high densification of the city's waste streams.

cation of the commune in the last decade. Unlike the vast majority of municipalities in the Metropolitan Region, which have outsourced their service, the Municipality of San- tiago uses its own trucks and personnel, directly controlling the entire waste collection operation, which then goes to final disposal: this waste disposal component is outsourced to the company KDM, which operates the Quilicura Waste Collection Centre and the Loma Los Colorados Landfill. The Dirección de Aseo y Ornato is the unit in charge of collection and transport, which operates in 100% of the communal territory, divided into 4 zones: East, West, Central East, Central West. Depending on the characteristics of each zone, the frequency and schedule of collection is determined.

Due to the strong growth of the residential sector in the last decade and the historical presence of the commercial and service sector in the region, the

Analysis of the communes of Las Condes, Providencia, Maipú and La Pintana

Although Santiago de Chile is generally referred to as a single city, in reality the city does not constitute, for all intents and purposes, a single political-administrative entity, but is made up of 37 communes in the Metropolitan Region of Santiago, 32 of which are in the Province of Santiago. For the present analysis, the Commune of Santiago was used as the main focus and the findings were compared with the normative dimensions of four other communes: Las Condes, Provi- dencia, Maipú and La Pintana.

In order to understand the differences and similarities between the Santiago Commune and the other communes, we compared findings on the normative dimension based on secondary sources and data on waste pickers provided by waste picker leaders at the national level for the communes of Las Condes, Providencia, Maipú and La Pintana.

The current legal frameworks of none of these municipalities mention the inclusion of informal waste pickers. La Pintana makes the most explicit mention of waste pickers in its municipal global change strategy by establishing the incorporation of waste pickers into differentiated waste collection systems. La Pintana's municipal plan dictates that neighbours must hand in paper, cardboard and metals to the recyclers who pass by the waste collection truck. However, there is no information that such a system is formally operating in the commune.

The Commune of Maipú has 4

Waste picker organisations have been in existence for almost 10 years and have an approximate number of 400 waste pickers, of which around 200 are registered with the municipality and are authorised to work independently in the commune. Over the years they have been able to raise their profile and develop collaborative relationships with the municipality. However, they have not been able to establish a collection system for recyclables at the commune level, as the vast majority of waste pickers in this commune are dedicated to reuse rather than recycling, which they consider more profitable.

The municipality of Las Condes maintains a functional, though not formal, relationship with waste pickers working in this commune. They estimate that 500 families are engaged in this activity and that 80% of the waste pickers working in the commune come from other communes.

The Commune of Providencia, although it has a system of "clean points" (containers for separating recyclables in public spaces such as squares) and separate collection, does not consider the inclusion of grassroots recyclers, who work informally in the commune.

No formal census of waste pickers was found in any of these four communes.

On transparency and inclusiveness in tendering practices, Chilean municipalities are obliged to use the Mercadopublico.cl portal to report tenders, purchases and high value public contracts. In this way, there is a level of transparency and inclusiveness in tendering.

The system does not have specific clauses for the inclusion of grassroots recyclers, however.

No evidence was found that solid waste management strategies have been developed using participatory methodologies, although the existence of the community councils ensures that civil society groups have a say in such policies. The Com- munity of Providencia is currently developing a new Environmental Ordinance that does follow a participatory methodology.

The municipalities analysed have workshops on environmental education and recycling, but only Maipú carried out workshops and communication efforts to highlight the importance of the inclusion of informal waste pickers specifically.

No specific budgets for inclusive recycling, no concrete incentives for grassroots recyclers, and no information collection systems for inclusive recycling were found. Only Providencia offers positive incentives for recycling to users, to whom it gave 300 composting kits. The rest of the municipalities only incentivise recycling through mandatory regulations and possible fines.

With regard to the regulation of sorting and handling of hazardous waste, the regulations have been set by the national government and the different municipalities vary only in their level of implementation.

In the years of a "capital commune", the collection system has been adapted according to the demands of the various users.

In 2014, based on the Communal Development Plan 2014-2020 (PLADECO), the Municipality implemented a recycling programme with the following components:

1. Door-to-Door Programme: Recyclables collection service, implemented with informal recyclers, which operates as a pilot programme in 2 neighbourhoods of the city. This programme is supported by the municipality with personnel, vehicles, infrastructure and equipment for collection, transport, separation and sale to recycling companies.
2. Recycling Point Network: points for the collection of recyclables on public roads. Although there have been education campaigns for the proper use of these points, they have not been efficient. In the future, it is proposed to abolish the street recycling points and build a large recycling centre of 1,000 m^2, for which the municipality has already approved public funds.
3. Environmental Education Centres: educational spaces open to the community, which are also used as a centre for the collection and sorting of recyclables from the Door to Door programme and organic waste for composting.
4. Recycle Made Easy" programme, which operates in 80 buildings and is fully outsourced to Empresa Metropolitana de Residuos (EMERES).

Brief characterisation of the grassroots waste pickers

Although there are no censuses, according to estimates by the National Movement of Waste Pickers of Chile (MNRCH), there are approximately 6,000 grassroots waste pickers in the Metropolitan Region, a percentage of whom are organised. According to the MNRCH, there are at least 15 organisations that maintain contact with them in the communes of Quilicura, Cerrillos, Maipú, Estación Central, Quinta Normal, Santiago, Recoleta, Peñalolén, Puente Alto, San Bernardo and El Monte.

Informal recycling in the Metropolitan Region operates along routes that recyclers follow from lower-income residential neighbourhoods - where they generally live - to higher-income commercial or residential areas, seeking quality and quantity of recyclable and reusable waste. It is important to note that most of the grassroots waste pickers in the Metropolitan Region are engaged in recovering recyclable and reusable materials, e.g. discarded household appliances or clothing. This reusable material is either repaired or sold directly at fairs or through intermediaries.

Since recycling is sustained solely by the market, waste pickers must make a selective effort when collecting recyclable or reusable materials, favouring those that offer the best cost/benefit ratio. With regard to recyclables, the materials that recyclers collect most are paper, cardboard, cans and scrap metal.

The Santiago Commune, due to its commercial and office character, is a highly attractive area for the collection of recyclable waste. Historically, there have been informal recycling systems that support a significant number of waste pickers and middlemen who collect recyclable waste directly from the streets, especially in commercial and service areas. The National Movement of Waste Pickers of Chile estimates that between 200 and 300 waste pickers work in the Santiago area, especially in areas with the highest generation and quality of recyclables. Informal recycling works by integrating waste pickers, intermediaries, traders and users, especially offices or commerce, who in some cases sell the material directly. Informal recyclers and users separate recyclable material on the street to sell it without going through temporary collection, since the vast majority of recyclers do not have space to collect and sort the material better.

Since 2014, the Municipality of Santiago (Commune) has been implementing the Municipal Recycling Programme, which considers the inclusion of

informal recyclers. This programme involves 7 registered waste pickers in the municipality and provides for the differentiated collection of recyclable waste through door-to-door collection, collection of bulky waste for reuse or recycling, programmed collection from fixed sources, timely collection and collection from clean points in community buildings. This programme is still in its infancy, but is seeking to establish itself as a municipal waste recycling alternative, along with other alternatives that operate within the programme, but do not consider the inclusion of recyclers. The system operates on a pi- lot basis, with a truck that carries out differentiated collection routes according to a schedule agreed with the users of the system. This truck drops off the waste at the Recycling and Transitory Collection Point in Quinta Normal Park, where it is collected, sorted and prepared for sale by two recyclers in charge of the recycling point. Once the material is separated and prepared, it is taken by the same truck to be sold. The company Reciclados Industriales (www.recicladosindustriales.cl) has an agreement to purchase all the materials recovered by the system: paper, cardboard, cans, PET and tetra pack. Through this agreement, informal recyclers can access better prices, especially small recyclers who are unable to access recycling companies directly due to the quantity of materials they recycle.

According to the Social and Labour Cadastre of Waste Pickers in the Metropolitan Region prepared by the Fundación Casa de La Paz and the National Movement of Waste Pickers of Chile in 2015, based on a sample of 84 waste pickers in the commune of Santiago, the waste pickers working in this commune are on average 49 years old and have been working in waste picking for 16 years. Some 82.1% are not organised, 85.7% feel that they receive very little help from institutions and individuals, and 95.6% say they are affiliated to a public or private health system.

To work, 70.3% use human-powered vehicles, 51.8% collect recyclable material at home and 48.2% do not collect, but sell directly; 77.4% collect the material from their own homes and 48.2% do not collect, but sell directly; 77.4% collect the material from their own homes. recyclable material from the street, recovering mainly cardboard, paper, scrap metal, aluminium and 'cachureos' (disused items with potential for repair, reuse or re-cycling of their components). According to the same study, on average, waste pickers in the Santiago Commune earn CL$192,667 per month (US$287.18) and 73.2% see themselves doing the same activity in the future.

Major challenges in the city in terms of inclusive recycling

In the City of Santiago the most important challenge is to start implementing the necessary infrastructure for a metropolitan-wide recycling system and to encourage the development of communal recycling systems in the municipalities. A small number of communes (Vitacura, Las Condes) have recycling point systems for the disposal of recyclables with considerable coverage, another small number of communes have recycling systems operating in pilot phase, with low coverage. A majority of municipalities do not have recycling collection systems. On the other hand, the recycling systems that are in operation do not always consider the inclusion of recyclers, but most of the services are provided by companies.

In this sense, the work of grassroots waste pickers is largely informal. A second challenge at the regional level is the organisation of waste pickers, who until now have worked as individuals or families, but who will soon be affected by the change in recycling legislation. The Law on the Promotion of Recycling includes grassroots recyclers as recycling managers, which provides recognition and also an opportunity for waste pickers. In order to take advantage of this opportunity, waste pickers must meet certain requirements such as labour certification, legal status and sanitary permits, among others.

On the other hand, the Commune of Santiago faces important challenges for inclusive recycling. First of all, it is necessary to increase the

The pilot programme has not been attractive to a significant number of informal waste pickers in the commune, which means that the benefit of the programme is not attractive to them. This pilot programme has not been attractive to a significant number of informal waste pickers, implying that the benefit offered by the programme is not attractive to them.

Secondly, the infrastructure and equipment available for recycling in the commune needs to be improved and increased. There is already an project to build a larger capacity recycling centre, which will improve the operation of the service and allow it to expand.

Finally, progress must be made towards a greater formalisation of the Municipal Recycling Programme and its inclusive recycling component, reaching a higher degree of institutionalisation: tenders with inclusive recycling, calculation of service fees for informal recyclers and municipal decrees regulating inclusive recycling, among other instruments.

São Paulo, Brazil

Definition of the city (unit of analysis):

São Paulo, capital of the State of São Paulo, is the most important state in Brazil, as it is home to the largest industrial park and the most dynamic financial centre in the country and one of the most important in Latin America. The city is divided into 31 sub-districts grouped into 9 regions.

SOURCES:
Prefeitura de São Paulo - Secretaria de Serviços Públicos. http://www.prefeitura.sp.gov.br/cidade/secretarias/upload/servicos/arquivos/PGIRS-2014.pdf

Indicators	São Paulo, Brazil
Population, city met[1]	21.308.378
Town, city[5]	12.038.175
GDP (PPP) per capita, city met[1]	US$20,940
Percentage of population below the poverty line, (%), city[1]	42,2%
Minimum monthly wage (US$), national[2]	US$188
Gini coefficient, city[3]	0,55
Unemployment rate (%), national[4]	7,7%
Share of informal employment (%), national[4]	36,8%
Percentage of urban dwellings in deprived neighbourhoods (%), national[3]	22,3%

1. Canback.
2. ILO and The Economist Intelligence Unit.
3. UN-Habitat and national sources.
4. ILO.
5. Instituto Brasileiro de Geografia e Estatística, 2016.

Brief description of the city's GIRS system

In Brazil, solid waste management is considered a public service for which municipalities are responsible, while recycling processes are considered industrial activities. São Paulo has a system of selective waste collection with the participation of waste pickers' co-operatives in 93 of the 96 districts. The materials recovered by them are transferred to sorting plants in which former independent recyclers have been linked, and the materials are then marketed to intermediaries or industry. Ordinary waste is collected by two private companies, under concession to collect from clusters of about 2 million households each, which direct the solid waste to transfer stations where it is transported for disposal in two landfills located in the municipalities of São Ma- teus and Vizinho de Caeiras.

There are multiple actors involved in solid waste management: the grassroots recyclers - both independent and organised - who collect separated recyclables or recover them from waste that arrives mixed by citizens or who are linked to a waste separation plant; the companies that collect, transport and dispose of unusable waste; the traders of recyclables (better known as middlemen) who collect the separated materials and have additional infrastructure for weighing, packaging, packing, packaging, sorting and recycling; the traders of recyclable materials (better known as intermediaries) who collect the separated materials and have additional infrastructure for weighing, packaging, shredding, collection and transport; the industry that makes use of the recyclable materials; and the State that defines the scheme and policies and carries out the collection.

Since 1989, solutions have been implemented that help to reduce the amount of waste disposed of in landfills and contribute to reducing the vulnerability of the waste picker population. However, in spite of the efforts made by the

The municipal government and the recycling co-operatives, 95% of the waste produced in the municipality is disposed of in the sanitary landfill due to the lack of separation at source by the users. The municipality has 22 registered waste pickers' co-operatives; however, when waste volumes increase, they are supported by 48 others. The waste collected by the co-operatives is taken to recycling centres where other associated waste pickers separate, sort and package the waste for subsequent sale to industries or intermediaries.

A brief characterisation of grassroots waste pickers

In São Paulo, it is estimated that there are 10,000 recipients, of whom approximately 1,100 are associated with an organisation registered by the Prefecture. There are no political waste picker organisations in São Paulo. However, there are 22 registered waste picker co-operatives (and 48 unregistered ones), including COOPERE and COOPERCAPS, whose members work in São Paulo's mechanised recycling centres.

Waste pickers working in organisations are involved in collection, transport, sorting and sorting of materials. Those who work in collection most of the time carry out their activities in the streets receiving separated waste door-to-door, which they accumulate at some point for collection by truck. In this collection activity, most of the personnel wear uniforms and in some cases gloves; however, they lack personal protective equipment and do not have sanitary facilities nearby. Those working in separation are located in covered facilities with conveyor belts where they separate the waste. Unlike waste pickers working in collection, they are not subjected to weather and vehicular hazards, and have sanitation facilities nearby. In some of the co-operatives, there is equipment for packaging. Associations trade with industry and sometimes with middlemen. Informal waste pickers, on the other hand, mainly collect waste on public roads and sell to intermediaries.

With respect to their socio-economic characterisation, waste pickers work long hours of more than 8 hours and for which they receive relatively low remuneration. According to the census, in terms of network organisation, only 19% of respondents said that they participate in a network, which are mostly marketing networks. As for the equipment used in the work, 53% said that they owned it, while 39% used a rented or borrowed place. Only 8% of the respondents had received any type of financing in the 12 months prior to the survey.

Major challenges in the city in terms of inclusive recycling

In general, Brazil has made great strides in the integration of information actors in solid waste management. Specifically in São Paulo, the interaction and roles of users, recyclers and private waste management companies have been perfected, thanks to the experience of more than 20 years in the implementation of selective collection routes with the participation of co-operatives. Brazil is currently one of the pioneering countries in inclusive recycling in Latin America, in terms of legislation and the adoption of technologies for the collection, transport, separation, sorting and packaging processes, due to the support provided by the government and partnerships with private actors.

However, 90% of the recycling population has not been integrated into training programmes, and continues to carry out the activity in precarious conditions, mainly subject to the imposition of prices and quantities by informal intermediaries. For this reason, the government should implement measures to improve information on cooperative membership and to establish incentives for the cooperative sector.

The government has also failed to provide adequate incentives for informal recyclers to join an organisation. In addition, users do not separate recyclable materials correctly and continuously, which is why government invest in sorting campaigns and provide incentives and penalties for waste pickers to obtain more and better quality recyclables.

Credits: Matias Recart

VI. Methodology

Cities covered by the study

Twelve cities were selected for the study, based on a combination of criteria. The selection was balanced on the basis of population size and GDP per capita: large, medium and small cities. In addition, 4 cities are included in the IDB's Emerging and Sustainable Cities Initiative (ICES) programme. For each city, the geographical/legal unit of analysis was defined and can be found in the city profiles. It should be clarified that this is a retrospective sample.

The study is therefore limited in terms of the number of cities in Latin America and the Caribbean.

Indicators and scoring

The assessment framework comprises 10 qualitative indicators, with 37 sub-indicators (associated questions). A further 20 quantitative data on city characteristics and waste management were also collected (see section "Quantitative indicators" below). The qualitative indicators are classified into three broad dimensions: 1) regulatory, 2) organisational and 3) market.

Cities covered by the study

No.	City	Country
1	Asunción *	Paraguay
2	Bogotá	Colombia
3	Belize City *	Belize
4	City of Buenos Aires	Argentina
5	Mexico City	Mexico
6	Lima	Peru
7	Montevideo *	Uruguay
8	Quito	Ecuador
9	San José * San José * San José * San José * San José * San José * San José * San José * San José	Costa Rica
10	Santa Cruz	Bolivia
11	Santiago de Chile (Commune)	Chile
12	São Paulo	Brazil

* City included in the ICES programme.

1) REGULATIONS
1.1) Waste management legislation
1.2) Integration of the basic recycler
1.3) Information generation
1.4) Public health and the environment
2) ORGANISATIONAL
2.1) Associativity
2.2) Commercial organisations
3) MARKET
3.1) Conditions for access and storage of waste
3.2) Conditions for placing recyclable material on the market
3.3) Income of basic recyclers
3.4) Working conditions of grassroots waste pickers

The indicator framework presented in this study reflects the idea of greater inclusion and measures the status of inclusive recycling in the twelve (12) cities of the region with reference to this ideal scenario. It is not intended to be an integrated solid waste management framework because it is specifically designed to focus on the issue of inclusion of informal recyclers.

The methodology for this study was created by the research team of The Econo- mist Intelligence Unit (EIU) in consultation with the Inclusive Recycling Regional Initiative (IRR). The indicator framework has been developed from many sources. First, in 2013, the IRR published the results of an initial study and comparative analysis of the informal recycling sector in 15 countries in the Latin American and Caribbean region (see Accenture, 2013). This initial assessment considered 17 qualitative and quantitative indicators in three main dimensions: 1) regulation;
2) organisational and 3) market. The framework is structured around these initial dimensions.

Secondly, various approaches and analytical frameworks for characterising inclusive recycling and waste management were also consulted, e.g. the studies by Velis et al. (2012), UN-Habitat (2010) and Wilson et al. (2015a, 2015b).

Finally, in May 2016, the list of indicators and the research focus were presented at a workshop attended by international and regional experts and practitioners.

Score

Several sources were used to assess the indicators, including secondary information (reports, and articles published in the press) and primary sources (official databases, laws and regulations, and expert interviews). Ninety in-depth interviews were conducted with municipal authorities, waste picker associations, recycling companies, NGO representatives and specialists in the field. On average, 8 interviews were conducted per city. A list of the experts interviewed can be found in the Bibliography section.

All qualitative indicator scores are ordered on an integer scale. The scale ranges from 0-1, 0-2, or 0-3, and scores depend on the definitions and scoring method formulated for each indicator. A scoring guide was developed for researchers. Scores are assigned by the Economist Intelligence Unit's research team according to the scoring criteria. The integer scores are then "normalised", i.e. transformed into a composite score between 0 and 100 for comparison.

Standardisation

Indicator scores are normalised and summed across dimensions to facilitate comparison of the broader concepts across cities. Normalisation establishes a new basis for the indicator scores and converts them into a common unit so that they can be aggregated.

The indicators were normalised in two ways:

a) If the data already fall within a fixed range, e.g. 0-100 or 0-4, they are trans- formed using the minimum and maximum values of the range. So if the indicator is in a range 0-100, a value 0 of raw data would give a score of 0, and a value 100 of raw data would give a score of 100. If the indicator is in a range 0-4, a value 0 of raw data would give a score of 0, and a value 4 of raw data would give a score of 100.

b) If the data are taken from a set of economic or demographic data (GDP, population, birth rate, etc.), the minimum and maximum values of the sample, i.e. the set of cities we are analysing, are used.

$$x= (x - Min(x)) / (Max(x) - Min(x))$$

Where Min(x) and Max(x) are, respectively, the minimum and maximum values in the 12 cities for any given indicator. The normalised value is then transformed into a score between 0 and 100 to make it directly comparable with other indicators. This, in effect, means that the ci-

The city with the highest value of unprocessed data will have a score of 100, while the city with the lowest value will have a score of 0.

Weighting

Once the scoring and normalisation of the indicators had been completed, the EIU chose a specific weighting: it weighted the indicators and sub-indicators equally. The user can adjust the weightings as desired in the Excel template that accompanies this report if he/she prefers to give more weight in the scoring to specific indicators. At the same time, the user has the possibility to add 10 more cities with their score as a self-assessment tool.

Equal weighting in indicators

For each dimension all indicators and sub-indicators receive equal weighting within their level. That is, the following weightings were used:

INDICATORS	Weight
1) REGULATIONS	
1.1) Waste management legislation	25,0%
1.2) Integration of the basic recycler	25,0%
1.3) Information generation	25,0%
1.4) Public health and the environment	25,0%
2) ORGANISATIONAL	
2.1) Partnership	50,0%
2.2) Commercial organisations	50,0%
3) MARKET	
3.1) Conditions for access and storage of waste	25,0%
3.2) Conditions for the marketing of recyclable material	25,0%
3.3) Income of grassroots waste pickers	25,0%
3.4) Working conditions of grassroots waste pickers	25,0%

SUB-INDICATORS	Weight
1.1.1) 1. Is there a national legal framework for recycling-oriented waste management that includes informal actors?	25,0%
1.1.2) 2. Is there a municipal legal framework for waste management geared towards recycling and the inclusion of informal actors?	25,0%
1.1.3) 3. Are municipal policies sufficiently stable to ensure continuity i n inclusive recycling policies?	25,0%
1.1.4) 4. Is there a municipal budget (or funding mechanism) allocated for inclusive recycling?	
1.2) Integration of the basic recycler	25,0%
1.2.1) 5. Is there legal recognition of the occupation of grassroots waste picker?	
1.2.2) 6. Are grassroots waste pickers recognised as service providers in waste management?	12,5%
1.2.3) 7. Has the population of grassroots waste pickers a	12,5%
	12,5%
through a census?	
1.2.4) 8. What is the degree of transparency and inclusiveness in tendering processes for recycling?	12,5%
1.2.5) 9. Was the municipal solid waste policy/strategy: developed in a participatory manner?	12,5%
1.2.6) 10. Are there training/capacity building programmes at the municipal level?	12,5%
1.2.7) 11. Are there incentives, programmes and/or concrete actions to strengthen the occupation of grassroots waste pickers?	12,5%
1.2.8) 12. Are there incentives to recycling for users?	12,5%
1.3) Information generation	
1.3.1) 13. Is there an inclusive municipal recycling data collection system?	50,0%
1.3.2) 14. Are there communication campaigns to promote inclusive recycling with dissemination in the municipality?	50,0%
1.4) Public health and the environment	
1.4.1) 15. Is there adequate regulation and control on sorting and handling of special and/or hazardous waste and on street sorting?	100,0%

2) ORGANISATIONAL	
2.1) Associativity	
2.1.1) 16. How dynamic are the partnerships?	20,0%
2.1.2) 17. What is the level of inclusiveness of these partnerships?	20,0%
2.1.3) 18. Are the associations involved in dialogue or dialogue with peers?	20,0%
2.1.4) 19. Are there spaces for dialogue and coordination between different actors in the recycling value chain?	20,0%
2.1.5) 20. What is the level of representation of women in associations?	20,0%
2.2) Commercial organisations	
2.2.1) 21. Are there organisations of commercially active waste pickers in the municipality (co-operatives and/or micro-enterprises)?	33,3%
2.2.2) 22. What is the level of participation of waste picker organisations in the recycling value chain?	33,3%
2.2.3) 23. Do commercial waste picker organisations have access to financing mechanisms?	33,3%
3) MARKET	
3.1) Conditions for access and storage of waste	
3.1.1) 24. What is the accessibility of recyclable material?	25,0%
3.1.2) 25. Are there formal differentiated collection schemes for recyclable waste in the municipality that involve grassroots waste pickers?	25,0%
3.1.3) 26. Do waste pickers have access to facilities for storage and sorting of materials?	25,0%
3.1.4) 27. What is the level of technical development achieved in the sorting (or pre-processing) of recyclables by waste picker groups?	25,0%
3.2) Conditions for placing recyclable material on the market	
3.2.1) 28. What is the difference in value of the material in the different links of the recycling chain?	50,0%
3.2.2) 29. What is the level of development of the processing industry at national level?	50,0%
3.3) Income of basic recyclers	
3.3.1) 30. Is contracting with groups of grassroots waste pickers allowed in the municipality's waste management system?	25,0%
3.3.2) 31. Are there fixed periodic payment mechanisms for grassroots waste pickers for services rendered?	25,0%
3.3.3) 32. Are there programmes for diversification of services provided by waste pickers?	25,0%
3.3.4) 33. Average income of waste pickers in relation to the national minimum wage	25,0%
3.4) Working conditions of grassroots waste pickers	
3.4.1) 34. Is there child labour in the waste management chain?	25,0%
3.4.2) 35. What is the level of gender focus in working conditions?	25,0%
3.4.3) 36. Are there inclusive plans for the closure of open dumps?	25,0%
3.4.4) 37. Do waste pickers have access to adequate working tools?	25,0%

List of indicators qualitative[10]

DIMENSION 1: REGULATION

1.1) Waste management legislation

1. Is there a national legal framework for recycling-oriented waste management with the inclusion of informal actors?
Score:
0= No national legal framework exists, or there is a national legal framework for ISWM but it does not provide for recycling and/or does not provide for inclusion.
1= An inclusive national legal framework exists, but has not yet been implemented.
2= There is an inclusive national legal framework that has been implemented.

2. Is there a municipal legal framework for waste management geared towards recycling and the inclusion of informal actors?
Score:
0= There is no municipal legal framework, or there is a legal framework for ISWM but it does not include recycling or inclusion.
1= Inclusive legal framework exists and has not been implemented.
2= There is an articulated inclusive legal framework that has been implemented.

3. Are municipal policies sufficiently stable to ensure continuity in inclusive recycling policies? Score:
0 = Low (1 term of administration) or no inclusive legal framework exists
1 = Median (2 periods of continuous municipal government)
2 = High (more than 2 periods of continuous municipal administration)

4. Is there a municipal budget (or funding mechanism) allocated for inclusive recycling?
Score:
0= No budget (or funding mechanism) exists, or an ISWM budget exists but does not provide for recycling or inclusion 1= Budget (or funding mechanism) exists and has not been implemented
2= There is a budget (or mechanism for funding) that has been implemented

1.2) Integration of the basic recycler

5. Is there legal recognition of the occupation o f grassroots waste picker?
Score:
0= No legal recognition of the occupation of grassroots waste picker
1= Legal recognition of the occupation exists of the basic recycler

6. Are grassroots waste pickers recognised as service providers in waste management? Scoring:
0= There is no recognition of grassroots waste pickers at the municipal level.
1= There is recognition of grassroots waste pickers, but no promotion of linkages to the waste management system.
service providers in waste management

7. Has the grassroots waste picker population been identified through a census? Scoring:
0= No census of the waste picker population has been conducted.
1= A census of the waste picker population has been carried out.

8. What is the degree of transparency and inclusiveness in recycling tendering processes?
Score:
0= There are no tendering processes for recycling or they exist with low transparency (0 criteria).
1= Exist with medium transparency (1-2 criteria)
2= Exist with high transparency (all 3-4 criteria)

9. Was the municipal solid waste policy/strategy developed in a participatory manner?
Score:
0= The process did not involve grassroots waste pickers.
1= It was a participatory process that involved grassroots recyclers
2= It was a participatory process and the proposals were reflected in the policy/strategy.

10. Are there training/capacity building programmes at the municipal level?
Score:
0= No training programmes/ training
1= There are training programmes for municipal officials or for users (citizens).
2= Training programmes for municipal officials and/or grassroots waste pickers are in place.
3= There are training programmes for all ISWM actors (including private sector companies, for example).

10 The EIU has prepared a scoring methodology guide with criteria for each question. This can be downloaded from the Excel template.

11. Are there incentives, programmes and/or concrete actions to strengthen the occupation of grassroots waste pickers?
Score:
0= Not existent
1= Incentives, programmes and/or actions exist punctual
2= Incentives, programmes and/or actions exist systematic and institutionalised

12. Are there recycling incentives for users?
Score:
0=Does not exist
1= Exist with low participation 2= Exist with broad participation

1.3) Information generation

13. Is there an inclusive municipal recycling data collection system?
Score:
0= Yes to 0 or 1 question
1= Yes to 2 or 3 questions
2= Yes to 4 or 5 questions

14. Are there communication campaigns to promote inclusive recycling with dissemination in the municipality?
Score:
0= No
1= Yes, but sporadically 2= Yes, and continuous

1.4) Public health and the environment

15. Is there adequate regulation and control over sorting and handling of special and/or hazardous waste and street sorting? Scoring:
0= No regulation
1= Regulation exists and does not apply 2= Regulation exists and applies

DIMENSION 2: ORGANISATIONAL

2.1) Associativity

16. How dynamic are the partnerships?
Score:
0= Partnerships do not exist or are very difficult to establish
1= At least one partnership exists, but with a difficult admission process
2= At least one association exists and admits new members

17. How inclusive are these partnerships?
Score:
0= Low inclusion (0 or 1 criterion)
1= Medium Inclusion (2 or 3 criteria) 2= High Inclusion (4 or more criteria)

18. Associations: Do they participate in spaces for interlocution or dialogue with peers?
Score:
0= Not participating
1= Participate at the municipal and/or national level 2= Participate at the municipal, national and international level

19. Are there spaces for dialogue and coordination between different actors in the recycling value chain?
Score:
0= No coordination spaces exist
1= There are spaces at the national or municipal level 2= There are spaces at the municipal and national level

20. What is the level of women's representation in associations?
Score:
0= There is a low level of representation (no criterion)
1= There is a medium level of representation (1-2 criteria)
2= There is a higher level of representation (3 or more criteria).

21. Are there organisations of commercially active waste pickers in the municipality (co-operatives and/or micro-enterprises)?
Score:
0= Not existent
1= exist
2= They exist and operate in coordination or in conjunction with each other.

22. What is the level of participation of waste picker organisations in the recycling value chain?
Score:
0= Low (no criteria) or these organisations do not exist
1= Medium (1 or 2 criteria)
2= High (3 or 4 criteria)

2.2) Commercial organisations

23. Do commercial waste picker organisations have access to funding mechanisms?
Score:
0= Do not have access to or do not exist these organisations
1= Microcredit
2= Traditional or public banking
3= Supplier support programme

DIMENSION 3: MARKET

3.1) Conditions for access and storage of waste

24. What is the accessibility of recyclable material?
Score:
0= Total ban
1= Informal (landfill or street) 2=
Source recovery
3= Contracts with municipality to provide the service

25. Are there formal differentiated collection schemes for recyclable waste in the municipality that involve grassroots waste pickers?
Score:
0= No separate collection
1= Differentiated collection exists but does not involve grassroots waste pickers.
2= Differentiated collection exists and involves grassroots waste pickers.

26. Do waste pickers have access to facilities for storage and sorting of materials?
Score:
0= No, or waste pickers are not involved in these processes.
1= Yes

27. What is the level of technical development achieved in the sorting (or pre-processing) of recyclables by waste picker groups? Scoring:
0= Low, or waste pickers are not involved in these processes.
1= Medium
2= High

3.2) Conditions for placing recyclable material on the market

28. What is the difference in value of the material in the different links of the recycling chain?
Score:
Ratio of the purchase value of a unit (1 kg) of PET, paper, cardboard or aluminium at collection-sorting centres/purchase value of the same unit at a pre-processing facility*.

29. What is the level of development of the processing industry at the national level?
Score:
0= There are no industrial processing plants in the country.
1= There are industrial plants for 1 or 2 materials.
2= There are industrial plants for 3 materials 3=
There are industrial plants for all materials

3.3) Income of basic recyclers

30. Is contracting with grassroots waste picker groups allowed in the municipality's waste management system?
Score:
0= No
1= Yes but not applicable
2= Yes and evidenced by contracts with waste picker organisations in place.

31. Are there fixed periodic payment mechanisms for grassroots waste pickers for services rendered?
Score:
0= No
1= Yes

32. Are there any diversification programmes in place for the
services provided by waste pickers?
Score:
0= No
1= Yes

33. Average income of waste pickers in relation to the national minimum wage
Score:
% between average income / minimum wage national

3.4) Working conditions of grassroots waste pickers

34. Is there child labour in the waste management chain?
Score:
0= Yes
1= Yes, but there are programmes to address the situation.
2= No

35. What is the level of gender mainstreaming in working conditions?
Score:
0= Low (0 criteria)
1= Medium (1-2)
2= High (3 or more)

36. Are there inclusive plans for the closure of open dumps?
Score:
0= No
1= Yes or no open dump sites

37. Do waste pickers have access to adequate working tools? Score:
0= No criteria are met. 1= 1 to 3 criteria are met.
2= 4 or more criteria are met

List of quantitative indicators

In addition, a number of quantitative data were collected, those available from official sources or existing reports. These indicators can be found in the interactive Excel model, which accompanies this report:

1. Number of grassroots waste pickers in the municipality
2. Number of grassroots political waste pickers' associations
3. Number of grassroots economic waste pickers' associations
4. Number of grassroots waste picker organisations contracting with the municipal waste management system
5. Annual generation of solid waste
6. Percentage of the city's population with regular municipal solid waste collection
7. Percentage of city population with separate collection of municipal solid waste
8. Number of landfills
9. Percentage of the city's municipal solid waste disposed of in landfills
10. Remaining life of the land on which the landfill site is located
11. Percentage of the city's solid waste disposed of in open dumps, controlled dumps, water bodies and burned.
12. Percentage of the city's solid waste that is composted
13. Percentage of the city's municipal solid waste that is separated and sorted for recycling.
14. Percentage of municipal solid waste from t h e city that is used as an energy resource.
15. Percentage of municipal solid waste that is recycled

Indicators in city profiles

The city profiles contain boxes with demographic and socio-economic data. This information was compiled using the same sources for each indicator, in order to achieve as much comparability as possible. Definitions, sources and years can be found in this box:

Indicator	Unit	Level geographic	Source	Year	Definition
Population	Number of persons	City	Canback. Calculation of the EIU https://www.cgidd.com	2016	Number of people living in the geographical unit.
GDP (PPP) per per capita (US$)	Constant 2005 dollars in purchasing power parity (PPP) per capita terms (US$)	City, (except Belize City which is at the national level)	Canback. Calculation of the EIU https://www.cgidd.com	2016	Calculated using constant 2005 dollars in purchasing power parity (PPP) terms divided by the city's population.
Percentage of population below the poverty line	Percentage (%)	City (except Belize City which is at national level)	Canback. EIU calculation https://www.cgidd.com/socioeconomic_definition.pdf?_ga=1.132105734.820260841.1469718687	2016	Percentage of the population in classes D and E, defined as those in households earning less than US$6,799.00 per year (less than US$4.66 per day for each person in a family of four). Class D (lower class) is defined as those earning a minimum of $2,700.00 per year and a maximum of $6,799.00 per year. Class E (underclass) is defined as those earning a minimum of $0.00 per year and a maximum of $2,699.00 per year.
Minimum monthly wage (US$)	Current dollars (US$)	National	ILO http://www.ilo.org/ilostat	Last year available	Monthly legal minimum wage; without taking into account other statutory mandatory benefits. Taken from ILO in local currency and converted to current dollars at the EIU average nominal exchange rate.
Gini	Coefficient (0-1)	City	UN-Habitat and national sources http://unhabitat.org/wp-content/uploads/2014/03/Table-3.1-Gini-Coefficient-for-Selected-Cities- and-Provinces.pdf	Last year available	The Gini coefficient is a number between 0 and 1, where 0 corresponds to perfect income equality and 1 corresponds to perfect inequality.
Unemployment rate	Percentage (%)	National	ILO http://www.ilo.org/ilostat	2016	Percentage of the economically active population aged 15 and over who have looked for work in the last four weeks without success.

Indicator	Unit	Level geographic	Source	Year	Definition
Percentage of informal employment	Percentage (%)	National	ILO http://www.ilo.org/ilostat	Last year available	Share of informal employment in total employment. Informal employment includes persons whose main or secondary jobs were characterised by the production of goods exclusively for their own household end-use (e.g. subsistence farming or building their own houses). The informal character of their jobs is due to the fact that family workers usually do not have explicit written contracts of employment, and that their employment i s generally not subject to labour legislation, social security regulations, collective agreements, etc. It is considered informal employment if their employment relationship, in law or in p r a c t i c e , is not subject to national l a b o u r legislation, income taxes, social protection or certain employment-related benefits (paid sick or annual leave, etc.).
Percentage of urban housing in deprived neighbourhoods	Percentage (%)	National	UN-Habitat http://unhabitat.org/wp-content/uploads/2014/03/Table-2.3- Proportion-of- urban-population-living-in-slums- and-urban-slum-population-by-country-1990-2014.pdf	2014	Proportion of urban dwellings that are in deprived neighbourhoods. Calculated from national household data using the four components of deprived neighbourhoods: lack of access to safe drinking water, acceptable standards of sanitation, durable housing and sufficient space. to live.

Glossary[11]

Sorting: Separation of mixed waste by material, mechanically or manually, either at source or after the collection process.

Composition (or characterisation): Quantitative description of the materials found within a waste stream, in particular in the form of a list of materials and their absolute quantities, per day or per year, or as a percentage of the total materials.

Composting: The decomposition of materials by organisms living under controlled conditions and in the presence of oxygen.

Community container: Container to contain waste, usually larger than one cubic metre and used for more than one household.

Service contract: A process, usually through tendering, whereby a municipality grants a company (usually for a period of time sufficient to amortise at least the initial investment incurred) the exclusive right to plan and provide waste management services, in all or some of their stages. The service contract may also include both direct billing and collection from the user and the financing of investments.

Cooperative: An organised enterprise with several owners participating in the activities. In some Latin American countries, cooperatives have a special tax regime and are therefore a preferred way to establish a business.

Final disposal: The act of depositing or permanently confining waste in various types of sites. and facilities.

Distributor (or broker): An individual or business that purchases quantified (weighed or measured) materials for recycling or composting, storage, upgrading or processing, and then resells them in the recycling value chain. A dealer usually has its own facilities and some form of dedicated storage site.

Personal Protective Equipment (PPE): Equipment used to minimise exposure to a variety of hazards. Examples of PPE include items such as gloves, eye and foot protection, ear protection devices (earplugs, muffs), hard hats, respirators and full body s u i t s .

Transfer station: The set of equipment and facilities where the transfer and sometimes the compaction of waste from collection or loading vehicles to heavy haulage vehicles is carried out, in order to move it to disposal sites.

Waste generator: Source of waste, i.e. the first point at which it is discarded as a useful object and redefined by its owner as waste.

Integrated Solid Waste Management (ISWM): A systems approach to waste management that recognises 3 important dimensions of waste management: 1) stakeholders, 2) elements of the waste system and 3) sustainability aspects.

Recyclable materials: Materials that, after serving their original purpose, have physical properties by which they can be reused or transformed into new products.

Micro and small enterprises (MSEs): Enterprises that are smaller than SMEs, and usually have less than 10 workers.

Municipality (or local government, mayoralty, city, town, village, municipality): A unit of local government with its own level of governance, accountability and representation; combines elected and appointed officials.

Waste picker organisations

A waste picker organisation can take many forms:

- *Informal group.* Waste pickers may have meetings, recognised leaders, etc., without having a legally constituted entity, or they may be in the process of formalisation.
- *Formal association.* The formation of a formal legal entity with a name, statute, defined organisational structure, elected officials, membership fee, etc., structured in various ways (the specifics can be developed through workshops and training sessions where waste pickers are informed, enter into dialogue and choose from various options). The association may be legally recognised, but its character is not yet defined, making it difficult to classify more narrowly.

11 The terms were drawn from the following sources: PAHO, AIDIS and IDB (2010), OSHA (2004), UN-Habitat (2010) and IDB/IRR (2013).

- *Cooperative*. A cooperative involves a collective form of work, with shared management and benefits and a focus on work organisation. It can be particularly useful when sorting activities are collectivised, as in the mechanical sorter/conveyor model.
- *Selling co-operative*. An alternative to the full collectivisation of waste picker labour, this arrangement allows for the aggregation and wholesale of collected recyclables, while maintaining waste pickers' independence in terms of recovery. Such solutions can help waste pickers access a larger pool of buyers (as a collective has a greater capacity to contact, attract and negotiate with new buyers) and therefore increase their profit margins. It can legally allow for the gradual purchase of new equipment by charging membership fees. The risk of this option is that it requires strong organisation and transparency to avoid misunderstandings and conflicts, as waste pickers would give up their materials to a chosen subset of individuals in exchange for a receipt and each waste picker would pay for their share of the materials for sale. All records would have to be publicly reviewed to ensure transparency and credibility, with the introduction of additional monitoring methods if necessary.
- *Trade union/union*. Association with an emphasis on achieving, maintaining or defending workers' rights. Its usefulness depends largely on the national legal framework and the comparative benefits it offers.
- *SMEs*. Small enterprises with non-cooperative work and payment methods, whether in waste and recycling or other sectors. Such arrangements require careful study of capacity and demand, as well as strong support and follow-up over an appropriate period of time.

Pre-processing: Preparation of recoverable materials from the waste stream to be used for further processing without adding significant value.

Processing (or upgrading, updating): Manual or mechanical operations to preserve or restore added value in materials. Usually involves densification, size reduction, sorting and packaging or transport.

Recycling: Activity by which certain solid waste from urban waste services is separated, collected, sorted and processed to be reincorporated into a domestic, commercial or industrial cycle, either formally or informally.

Formal recycling: Recycling process carried out directly by the municipal waste management agency and/or by a company or institution authorised by the waste management authorities.

Inclusive recycling: Waste management systems that prioritise recovery and recycling, recognising and formalising the role of waste pickers as key actors in such systems. These systems are built through regulations and public policies, initiatives, programmes and actions of the public and private sectors. Recycling with Inclusion represents a new paradigm in the sustainable management of solid waste, which incorporates the concept of the "3 R's" environmental (Reduce, Reuse and Recycle), other "3 R's socio-economic", namely: i) Differentiated waste collection, ii) Recognition of the role of recyclers and iii) Remuneration for the service they provide.

Rank and file recycler: A worker, mostly unrecognised as such, who performs the recovery of materials in the waste stream. Other terms used in the region include: *ciruja, recuperador, cartonero and excavador* (Argentina)*; catador and chepeiro* (Brazil)*; cartonero, cachurero, chatarrero and recolector* (Chile)*; basuriego, costalero, zorrego, botellero (* Colombia)*; buzo (* Costa Rica, Cuba, Honduras and Dominican Republic)*; minador and chambero* (Ecuador)*; pepenador (* El Salvador, Mexico)*; guajero and pepenador (* Guatemala)*; pepenador and churequero* (Nicaragua)*; metalero and pepenador (* Panama)*; ganchero and pepenador (* Paraguay)*; segregador and cachinero (* Peru)*; hurgador and clasificador* (Uruguay)*; and excavador and zamuro* (Venezuela). *In English: waste picker,* scavenger*, reclaimer,* rag *picker,* canner*, informal resource recoverer, binner, recycler, poacher* and salvager. "Chiffonier" is the common term in French.

Informal recycling: The recovery, segregation, cleaning, cleaning, transport, transformation and/or sale of recyclable materials in the solid waste stream, carried out informally, usually by excluded and low-class social actors.

Separate collection (or collection of recyclables): Collection of specific types of materials in a container or vehicle, or otherwise, in order to maintain the separation potential of the recycled material and maximise recovery.

Waste reduction (or waste minimisation): Strategies or activities undertaken by individuals, companies or institutions to reduce the volume and toxicity of discarded material.

Sanitary landfill: Engineering technique for the confinement of municipal solid waste, comprising its spreading, arrangement and compaction on an impermeable bed, and its covering with soil or other inert material at least daily, to control the proliferation of vectors and the adequate management of gases and leachates, in order to avoid environmental contamination and protect the health of the population. The landfill has engineering design, gate entry control, weighing and generally the exclusion of informal recyclers from the site.

Construction waste: Waste produced in the course of the construction or demolition of dwellings, offices, dams, industrial plants, schools and other structures (usually consisting of used wood, miscellaneous metal parts, packaging materials, cans, boxes, wire, metal plates, leftover concrete and/or broken bricks) and of a different character and treatment than household or mixed municipal waste.

Special waste: Waste generated in production processes, which does not qualify as hazardous or municipal solid waste, or which is produced by large generators of municipal solid waste. They include non-hazardous sludge and bulky or heavy waste (furniture, mattresses, household appliances, abandoned cars, concrete, asphalt, tyres, etc.).

Organic waste: Degradable fraction of household and commercial waste, including those originating in household kitchens and gardens and sometimes products of animal origin.

Hazardous waste: Materials that pose a substantial or potential threat to public health or the environment and generally exhibit one or more of the following characteristics: flammable, oxidising, corrosive, radioactive, explosive, toxic, carcinogenic, pathogenic.

Household solid waste (HWW): Solid or semi-solid waste of exclusively residential origin, generated by human activity within the dwelling.

Urban or municipal solid waste (USW): Solid or semi-solid waste from the activities of the population centres in general, including household, commercial, service, institutional, market, common or non-hazardous hospital waste, waste generated in the offices of industries, sweeping and cleaning of streets and public areas, pruning of street plants, squares and public gardens.

Reuse: The use of a previously used material or waste, without any transformation process.

Sanitation: Urban environmental activities, including wastewater and solid waste management.

Formal solid waste management sector: Solid waste management activities planned, sponsored, financed, carried out, regulated and/or recognised by formal local authorities or their agents, usually through contracts, licences or concessions.

Source separation (or separation or segregation at source): Actions taken to keep and store certain materials separately from mixed (commingled) waste at the point of generation.

Tariff: Value to be paid for the unit of service provided, which is established based on the cost of the service with or without municipal subsidy.

Recycling rate (recovery rate, percentage recycled, diversion rate): Percentage ratio between the amount of recoverable materials reaching recycling, composting or energy recovery and the total amount of waste generated.

Transfer: Movement of waste from its first point of discharge to its final disposal, usually involving some very basic processing (e.g. compaction, pre-sorting or size reduction).

Treatment: Mechanical or manual methods to reduce the risk of exposure or to reduce the impacts on the environment of toxic or hazardous materials associated with the waste stream (in some cases, while at the same time potentially capturing and increasing the economic value of specific waste stream components).

Valorisation (or recycling, recovery): Any process of extracting, storing, collecting, collecting, processing or materials from the waste stream in order to extract value and direct the material into a value-added stream.

Open dump (or dump site, landfill, etc.): A place where waste is dumped in the open in an uncontrolled manner without any sanitary treatment.

Controlled landfill: A site for the final disposal of solid waste that is not equipped with the landfill infrastructure, but with some control measures.

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