

POSITION PAPER

MARINE PLASTICS, SOLID WASTE AND CITIES

TOWARD MORE COMPREHENSIVE AND INCLUSIVE SOLUTIONS



Cities Alliance
Cities Without Slums

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Executive Summary

This paper explores the role that municipal governments and informal waste pickers can play in the fight against Marine Plastic Pollution (MPP). One of the great environmental threats of our time, MPP causes an array of negative environmental impacts that will worsen in the coming years if current trends persist. Cities are key centres of production for both MPP and social inequality, and therefore central to the causes of this crisis and potential solutions.

This dual production of MPP and social inequality suggests a two-pronged approach to solving both problems is needed – one that focuses on inclusive solutions downstream and policy and societal changes upstream. Such an approach can incentivise the social value of economic resources and minimise the long-term negative externalities of diverse modes of production and consumption. Solving the MPP crisis begins with broadening the scope of analysis of the waste and plastics value chain and its impacts to include the informal sector, among other things.

This paper focuses on Global South countries, where solid waste management systems tend to be underfunded and inadequate. They are also where global waste is likely to increase the most. This is not to excuse the Global North from its responsibility in the MPP crisis; these countries developed many of the technologies, materials, and systems involved, and they are among the main drivers of global consumption. In addition, many Global North industries are based in or process goods in the Global South, where they directly impact the environment.

In the cities of the Global South, waste can represent opportunity. A veritable army of informal environmental agents is already actively contributing to reducing plastic waste and pollution. These informal waste pickers represent both a vulnerable and productive group. They play an integral role in de facto recycling systems in many Global South cities and provide a range of social, economic, and environmental services at little or no cost to governments or society. The integration of these informal workers is becoming increasingly mainstreamed among national and municipal governments, but more remains to be done, including overcoming structural barriers to their work.

Informal sector integration can and must be part of a broader set of collaborative arrangements around Municipal Solid Waste Management (MSWM) that also includes inter-municipal cooperation, private sector actors, and even the general public. Other key elements are the use of appropriate technologies, increased access to financing, the creation of positive incentives, capacity strengthening for key system actors, and the fomenting of multi-actor dialogues around waste and recycling. Finally, solving the MPP crisis requires incorporating the upstream phase and policy level as part of a comprehensive programme, with zero waste and a truly circular economy as ultimate goals.

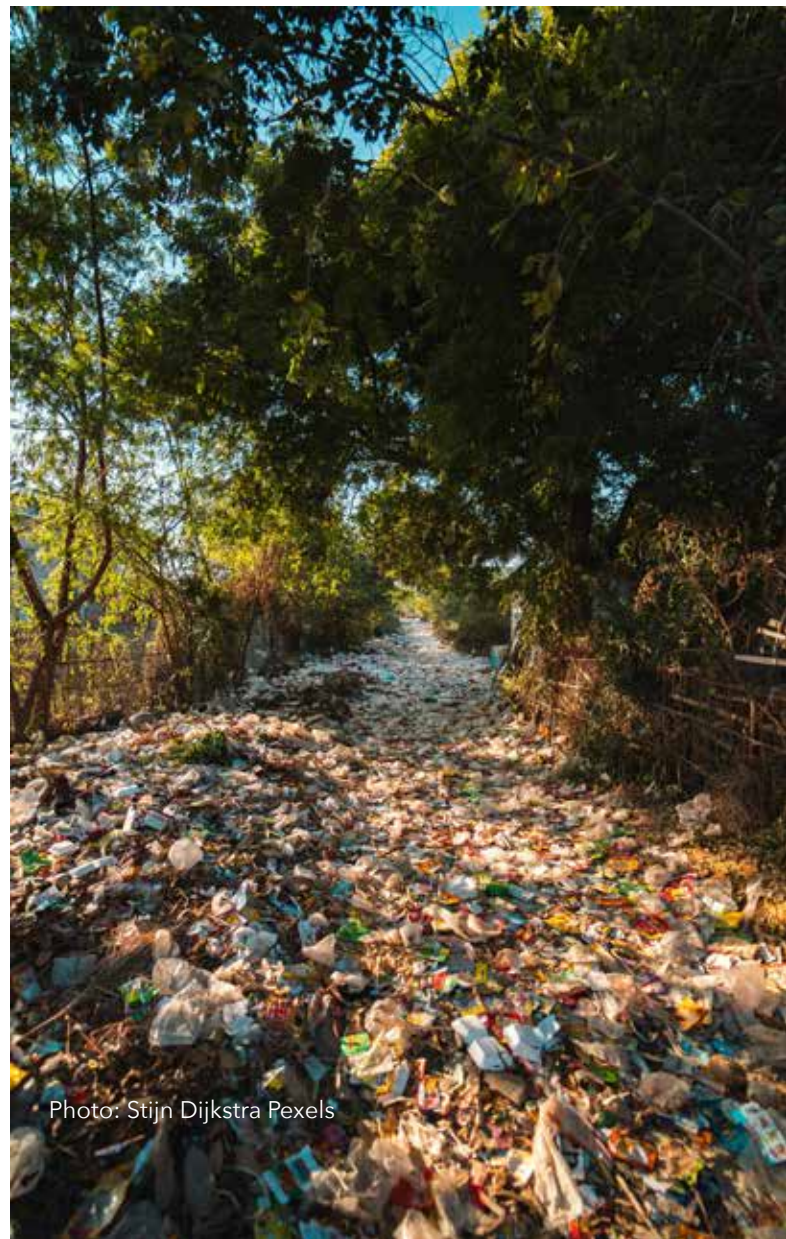


Photo: Stijn Dijkstra Pexels

KEY MESSAGES



Marine Plastic Pollution (MPP) is one of the great environmental threats of our time.

If not contained, the cumulative environmental and health stresses posed by plastic litter threaten all life on earth, making the prevention of plastics from reaching the oceans a global imperative.

Solving the MPP crisis requires a comprehensive approach covering both the downstream and upstream phases.

While the effectiveness of MSWM systems plays a major role in determining how plastic waste will enter the environment, the upstream phases of production and consumption determine the production and dissemination of the materials that will later become plastic waste.

Social inequality is built into the waste and recycling value chain at every stage and level, but cities are where these intrinsic inequalities are most manifest.

Yet, these social dynamics of the broader materials value chain are not always considered in the assessment and design of MSWM systems, which tend to focus on purely technical aspects.

A comprehensive approach to the MPP crisis and its solutions should consider the urban poor as both an affected group and - when properly engaged, supported and integrated - a potential part of the solution.

Local governments are essential to the global effort to end MPP and create more inclusive systems.

Increasing or facilitating their access to funding, specialised knowledge, and appropriate technologies, as well as their inclusion in global and national discussions around SWM issues, can help local governments adopt more comprehensive and cohesive actions to prevent, address, and reduce plastic waste.

The complexity of urban systems demands integrated and collaborative arrangements.

Inadequate practices and behaviours by producers, consumers, and SWM authorities lie at the root of the MPP problem. Changing these will require all system actors - national and local governments, businesses, consumers, and the general public - to change existing attitudes and practices around solid waste in general and plastics in particular.

Positive incentives can be powerful.

Policy and enforcement have key roles to play at every stage and level of the value chain. Punitive measures alone are insufficient to bring about the kind of social transformation needed and should be supported by broad, strategic public education and awareness-raising campaigns and positive incentives.

Technologies should be appropriate to the existing context.

Recognising and integrating local cultural and social norms, skills, capacities, and knowledge - as well as resource constraints on construction, maintenance and repair - can help increase the uptake and sustainability of new SWM practices. The challenges of expanding and upgrading MSWM systems to meet growing demand has led many cities to experiment with community-based schemes and technologies, as opposed to capital-intensive formal sector solutions.



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Photo: Nataliya Vaitkevich, Pexels

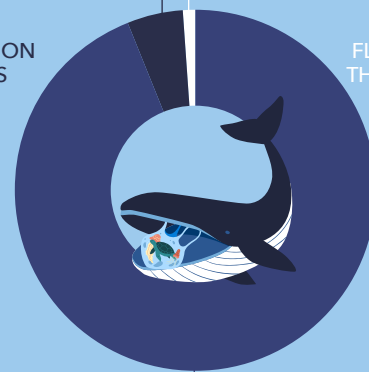
CITIES AND THE GLOBAL PLASTIC WASTE CRISIS

Marine Plastic Pollution (MPP) is one of the great environmental threats of our time. Plastics are now the third-most common man-made material (after concrete and steel). The global production of plastics currently exceeds eight billion tons per year; more plastics have been produced in the last ten years than throughout the 20th century, and production rates are projected to double in the coming decades.¹ An estimated 47 per cent of plastics (60-90 million metric tons) from Municipal Solid Waste (MSW) streams enter the environment each year due to inadequate disposal, with much of this material ending up in the ocean.² The vast majority of plastics that enter the ocean (94 per cent) ultimately settle on the seabed, and 5 per cent settles on beaches. The remaining one per cent floats on the ocean surface, feeding the growth of the now-famous garbage patches.³ Of the 50 to 75 trillion pieces of plastic that fill the world's oceans today, 80 per cent derives from land-based sources, with 11 million tons more entering the oceans each year.⁴ At current rates of accumulation, the total weight of ocean plastics is expected to exceed marine fish by 2050.⁵

47% OF PLASTICS FROM MUNICIPAL SOLID WASTE ENTER THE OCEAN

5% SETTLES ON BEACHES

1% FLOATS ON THE OCEAN SURFACE



94% SETTLES ON THE SEABED

- 1 GRID-Arendal. 2018. Marine Litter Vital Graphics Collection, created by Maphoto/Riccardo Pravettoni. <https://www.grida.no/resources/6923>.
- 2 Lebreton and Andrady, 2019.
- 3 Eunomia. 2016. *Plastics in the Marine Environment*. Eunomia : Bristol, UK. https://safety4sea.com/wp-content/uploads/2016/06/Eunomia-Plastics-in-the-Marine-Environment-2016_06.pdf.
- 4 Jambeck, Jenna R., et al. 2015. "Plastic Waste Inputs from Land into the Ocean." *Science* (347) 6223, pp. 768-771. doi:10.1126/science.1260352.
- 5 Ellen MacArthur Foundation, 2016.

Plastic pollution results in an array of negative impacts. Downstream impacts of the proliferation of plastics range from clogging rivers to growing oceanic garbage patches. Because most plastics take from 500 and 1,000 years to fully degrade, virtually all the plastic that has ever been produced is still present in the environment. Rather than biodegrading into non-toxic materials, most plastics undergo a secondary breakdown into microplastics that can enter the food chain.⁶ Plastic litter is regularly ingested by sea organisms, with impacts on their reproduction and development. This growing health threat comes at a time when marine life is already under multiple stresses, including rising sea temperatures, acidification, coral bleaching, agricultural and livestock runoff resulting in the creation of anoxic “dead zones,” and collapsing fish stocks due to overfishing. These impacts ultimately extend further downstream to humans; the average human being now consumes the equivalent of a credit card of plastic per week⁷. **If not contained, the cumulative environmental and health stresses posed by plastic litter threaten all life on earth, making the prevention of plastics from reaching the oceans a global imperative.**

If current trends continue, the crisis will worsen.

The urban production of plastic waste and its accumulation in water and marine environments is projected to triple by 2060 as populations, rural-urban migration, and income levels in developing countries continue to increase, according to current trends of unplanned urbanisation and per capita consumption. Most of this growth is expected to occur in Sub-Saharan Africa and Asia, with non-OECD countries projected to generate 64 per cent of global plastic waste by 2060.⁸

Rapidly urbanising cities in these regions are already under-served in the Solid Waste Management (SWM) sector and often left with few alternatives to the large-scale dumping of waste in informal or open landfills and water bodies. Without the development of more efficient, effective, and sustainable Municipal Solid Waste Management systems, plastic waste will only continue to pollute water tables, rivers, and the oceans. It is a global imperative that SWM practices include targeted actions to reduce and ultimately eradicate the land-to-water plastic conveyor belt.



Photo: Cuong, Freepik

- 6 Andradý, Anthony L. 2011. “Microplastics in the Marine Environment.” *Marine Pollution Bulletin* (62)8, pp. 1596-1605. <https://doi.org/10.1016/j.marpolbul.2011.05.030>.
- 7 WWF. 2019. *No plastic in nature: assessing plastic ingestion from nature to people*. https://assets.wwf.org.au/image/upload/v1/website-media/resources/pub-no-plastic-in-nature-assessing-plastic-ingestion-from-nature-to-people-jun19?_a=ATO2Ba20
- 8 OECD, 2022.

Cities are central to both the causes of the crisis and to potential solutions. Cities with weak SWM systems are the main points of entry of plastics into the environment, in many cases leading to the sea. Cities can simultaneously be centres of industrial production for these materials and centres of consumption of these materials and products packaged in them. Cities are also targets of urban-rural migration trends that, in turn, feed increases in production and consumption as well as overwhelming basic urban services, including SWM. At the same time, cities are centres of socio-economic inequality. The urban poor are disproportionately affected by poor waste management, through both health and safety risks and the stigmatisation associated with economic and physical proximity to waste. One manifestation of social inequality in the urban waste stream is the millions of people who earn their livelihoods through the informal collection, recovery, and sale of plastics and other recyclable materials (i.e., metals, glass, paper, etc.) in developing cities. Yet these urban poor also represent a key human resource for addressing this problem.

Although they are among the most excluded members of society, the urban poor provide valuable economic, social, and environmental services and benefits for the city. With proper recognition and support, they have the potential to contribute significantly to the growing global fight against MPP.

Solving the MPP crisis begins with a widened scope of analysis. The search for effective, viable, equitable, and sustainable solutions to plastic pollution must begin with an analysis of solid waste as both a part and a result of a broader set of multilevel systems that incentivise or hinder the actions of individuals, organisations, and public institutions. Such an analysis of waste systems in terms of their complex – and often informal – social dynamics in turn highlights the need for a strategic approach that encompasses a broad range of actions, from strengthening local planning, implementation, and accountability mechanisms to national policy change, public engagement, and awareness raising, and the engagement of diverse system stakeholders, including the informal sector. This analysis should encompass both the upstream phase in which these materials are produced and become waste and the downstream phase of waste management.

This paper explores the role that municipal governments and informal waste pickers can play in addressing the MPP crisis. This paper will situate the work of Cities Alliance within growing international efforts to support cities and the urban poor in fighting MPP, building on former knowledge products and programmatic experiences in the Global South. It also briefly reviews relevant aspects of existing knowledge, experiences, key issues, and lessons learned to identify ways in which cities can have a positive impact on reducing, preventing, and transforming MPP; transform it into economic opportunities (e.g., tiles, bricks, and finished consumer goods); and how to support them in these efforts.



Photo: Mumtazina Tami, Pexels



Photo: Aristotlè Guweh Jr, Pexels

FROM CITIES TO THE SEA: THE GENESIS OF MPP

The MPP crisis mainly originates in cities. More than 80 per cent of all MPP comes from land-based sources, and most of this material (approximately nine million tons per year) originates within 50 km of a coastline.⁹ The journey of land-based plastic waste from cities to rivers to the open ocean is a multidimensional, multi-path process. Three main factors largely determine a country's contribution to ocean plastics: (1) the amount of plastic waste it generates via production and/or consumption; (2) how that waste is managed; and (3) the likelihood that it will reach rivers and ultimately the ocean (i.e., according to climate, terrain, land use, and distances within river basins).

Plastics are produced in industrial centres, which are typically found in or near urban centres. Cities are also the main consumers of plastic products and products packaged in plastic. In cities with substandard waste management systems, this waste is further likely to be improperly disposed of, entering the environment via open dumps, storm water discharges, poor sewage systems, industrial facilities, and coastal tourism.¹⁰ The improperly-disposed-of-waste then leaks into the surrounding soil and water to be carried by wind and rainwater - when not directly dumped - into rivers, which ultimately carry it to the sea. Just 1,656 rivers account for 80 per cent of all river-borne plastics.¹¹

⁹ Jambeck et al., 2015.

¹⁰ European Environment Agency, 2023.

¹¹ Meijer, Lourens J.J., et al. 2021. "More than 1,000 Rivers Account for 80% of Global Riverine Plastic Emissions into the Ocean." *Science Advances* (7)18. doi:10.1126/sciadv.aaz5803.



Photo: OSPAN ALI, Pexels

Inadequate MSWM systems are a main cause of

MPP. The largest per capita MPP contributors tend to be middle-income countries, predominantly the rapidly developing countries of Africa and Asia.¹² These countries tend to have both high production and consumption rates of plastics and inadequate waste management. And countries without a diversified economy rely heavily on imports wrapped in plastic packaging. Another factor, the riverine pathways from cities to the sea, further determines which countries contribute most to MPP.

In Global South countries, MSWM tend to be underfunded and deprioritised, resulting in inadequate systems.

Rapid, unplanned urban growth further compounds the problem as these systems are taxed beyond their original design parameters. At least 33 per cent of MSW is improperly managed, and, in low-income countries, over 90 per cent is burned or dumped in open dumps. Less than four per cent is recycled. Global waste is expected to increase by 70 per cent in the next 30 years, doubling in South Asia and tripling in Sub-Saharan Africa by 2050, accounting for more than a third of global waste.¹³

This is of course not to excuse the Global North from its responsibility in this crisis. These countries originally developed many of the technologies, materials, and systems involved, as well as the prevailing global culture of overconsumption. Today, they continue to be among the main drivers of global consumption. **Global North countries often lack policies to control the production and disposal of plastic.** Some even outsource their waste to developing countries that lack proper disposal systems (a practice known as “waste colonialism”), leading to such harmful final disposal practices as burning or uncontrolled dumping. In addition, many Global North industries are based in and/or process goods in the Global South, where they directly impact the environment.

¹² Ibid.

¹³ Kaza et al., 2018.



Photo: Ahmed akacha Pexels

VALUING RECYCLABLES AND INFORMAL SECTOR WORKERS

Cities are centres of production of both waste and social inequality. Cities are the places where the greatest extremes of socio-economic inequality are most manifest, and these extremes extend to the waste sector. In developing countries, informal recycling represents a common survival strategy for the urban poor as well as an important source of raw materials for formal industries. **Social inequality is built into the waste and recycling value chain at every stage and level.** It starts upstream, from who invests in plastics to who consumes and uses the products made from or packaged in them. Then, moving downstream to who introduces them into the waste stream, who handles them once they become waste, and who is affected by them. Inequality and informality are thus intrinsic to the urban recycling value chain. At the same time, the survival strategies adopted by the urban poor to

overcome their social exclusion can provide social benefits, as the case of the urban waste and recycling sector demonstrates. An understanding of the social dimension of the waste and recycling chain, including the informal sector and its interactions with both government and the formal economy, is critical to the development of truly viable and sustainable solutions to waste-related problems such as MPP.

Yet, these social dynamics of the broader materials value chain are not always considered in the assessment and design of MSWM systems, which tend to focus on purely technical aspects.

Waste pickers are both a productive and a vulnerable group. The International Association of Waste Pickers (IAWP) defines waste pickers as:

1. Individuals involved in the collection, segregation, sorting, and sale of recyclables (paper, plastic, metal, glass, etc.) in an informal or semi-formal capacity as own account workers
2. Itinerant waste pickers, informal/semi-formal waste collectors engaged in transporting, sorting, and selling recyclables; informal workers engaged in transporting or sorting within the informal or semi-formal sorting/recovery/recycling sector; or any of the above who are integrated into municipal waste management systems and continue to sort and sell recyclables
3. Former recyclers who occupy new roles in their recycling organisations in environmental promotion, caregiving, health or gender programmes, etc.¹⁴

Waste pickers salvage materials from MSW streams or large generators, such as office buildings or industries. While they may use some of the collected materials themselves, they mainly sell them to other local informal or formal actors, at which point the materials ultimately enter global value chains.¹⁵ These informal workers are a category of social actor expressly defined by their work who play a productive role in the value chain. At the same time, they are a vulnerable category. Waste pickers often live and work in precarious conditions and are subject to safety, security and health risks, as well as hazards, social stigma, economic exclusion, police repression, and general invisibility in public discourse and policy. As a vulnerable group, waste pickers may include migrants, displaced persons, and (when allowed) refugees. Becoming part of a local waste picker collective, such as Ecoplastile, Inc., in Kampala, Uganda (which produces low-cost roofing from

recovered plastics), can help promote social cohesion among host and displaced populations in a context of refugees or internally displaced persons (IDPs).

The informal waste sector has a gender dimension. As in much of the formal sector, the informal waste sector is male dominated, with women mainly involved in the informal collection of waste and recyclables. Women are particularly vulnerable as they generally have less access to higher-value materials (e.g., metals), fewer resources, less decision-making power, and the added risk of gender-based violence. USAID's Women in Waste's Economic Empowerment Activity helps informal women waste pickers establish their own collection and recycling enterprises. ReciVeci (see box below) is a successful women-led enterprise in Ecuador, and WIEGO's work in various countries focuses on initiatives to empower informal woman workers.¹⁶

The informal sector is an integral component of de facto recycling systems in many Global South cities. An estimated 20 million people, most of them in the world's developing cities, earn their livelihoods through the informal collection and sale of recyclable materials (e.g., cardboard, paper, glass, metal and plastic).¹⁷ Many operate at open and controlled dumpsites in precarious health and working conditions, while others can be found at other points in the waste stream, including on city streets. These informal workers account for some 58 per cent of all plastic waste recovery globally. Most of the materials they recover are subsequently recycled and reintroduced into the formal economy rather than being leaked directly into the environment.¹⁸

Informality is not illegality. The "informal economy" covers all economic activities that fall outside the scope of formal arrangements. It can apply to all phases and aspects of the economic process, from production to sale or services, depending on how and where activities are carried out and the incorporation or registration status of the individuals or groups involved. Informality does not, however, include truly

¹⁴ IAWP, 2022.

¹⁵ Dias and Samson, 2016.

¹⁶ USAID, 2023.

¹⁷ Talbott, Taylor Cass. 2022. "Extended Producer Responsibility: Opportunities and Challenges for Waste Pickers." In Alfars, Laura, Martha Chen, and Sophie Plagerson, eds. *Social Contracts and Informal Workers in the Global South*. Edward Elgar Publishing: Cheltenham, UK and Northampton, MA. <https://doi.org/10.4337/9781839108068.00013>.

¹⁸ Reddy and Lau, 2020; O'Hare and Fernandez, 2022.



Photo: Brian Yurasits Unsplash

criminal activities, such as drug dealing or human trafficking.¹⁹ Still, many governments continue to conflate informality with illegality. This characterisation relies on simplistic definitions of illegality as any breach of existing laws or regulations. This definition ignores the nature, degree, and scope of informal work, as well as the socio-economic context of exclusion that can lead productive social actors to exercise what would otherwise be legal activities in ways that go beyond the bounds of existing law. The act of recovering discarded materials from the street or buying or selling recyclables without a license may thus be considered “illegal,” despite the fact that it harms no one and provides social, economic, and environmental benefits. A deeper analysis of the activities, goods, services, actors – and the legal, political, and socio-economic context in which these activities are exercised – can help distinguish illicit activities from activities that would otherwise be legitimate but are exercised in ways that are out of compliance with the law.²⁰

Waste pickers are productive actors who provide social, economic, and environmental services and benefits.

Waste with economic value is not waste. Waste pickers are both productive agents and independent entrepreneurs who harness the intrinsic value of these lost materials and return them to the economy. They are the “other private sector.”²¹ Municipal service gaps and inefficiencies create business and livelihood opportunities for informal sector actors who are able to fill service deficits left by governments and exploit business opportunities that the formal sector cannot. Like their formal sector counterparts, they are driven by economic concerns. The materials they collect are determined by the needs and capacity of local recycling industries, fluctuating global and local prices, the scarcity and costs of new materials and products, and changing cultural norms.²² Informality itself is further in part a business decision:

The costs of operating in the formal sector (due to bureaucratic procedures, legal requirements, extensive forms to fill out, taxes and red tape) are higher than the costs of operating in the informal sector. Lower costs and flexibility are the reasons why informal sector entrepreneurs continue to work and thrive in urban areas.²³

¹⁹ ILO, 2015.

²⁰ WIEGO, 2015.

²¹ Solo, 2003.

²² Dias and Samson, 2016.

²³ De Soto, 2000; WIEGO website (<https://www.wiego.org/>).

Waste pickers produce social and environmental goods and services. They create value. They provide environmental services and productive inputs to the global economy and contribute to the development of a circular economy by keeping discarded goods and materials in the active economy through reuse, remanufacturing, repurposing, and recycling, via the informal reuse or resale of recovered goods and the sale of recovered materials to formal industry.

Waste pickers also contribute to reductions of greenhouse gas (GHG) emissions. In Bogotá, Colombia, the Colombia Association of Recyclers (ANC) prevents the emission of 208,641 tons of CO² equivalent per year by preventing materials from decomposing in landfills.²⁴ The NGO WIEGO has developed a tool for measuring GHG emissions for waste picker organisations and their supporters that includes measurements for diversion of waste from decay in landfills and dumps, recycling, manual sorting and transportation, and diversion of materials from open burning.

Overcoming structural barriers is a key to unleashing the power of the informal sector. Failure to recognise the contributions of the informal waste pickers to basic urban service provision risks further excluding them, pushing their families deeper into poverty and widening existing inequalities.

In order to realise their full potential, enhance their contribution, and allow for their integration into formal SWM systems - where they already play an integral yet under-acknowledged role - it is necessary to address the structural barriers to such recognition. These include:

1. A lack of awareness on the part of public authorities, often coupled with a lack of open bilateral communication channels;
2. Hostility on the part of police and municipal officials;
3. A lack of explicit policies or inadequate implicit policies that increase collection delivery costs;
4. Overly stringent standards, complex, costly bureaucratic procedures, and excessive paperwork;
5. A lack of secure tenure for infrastructure (e.g., warehouses in unrecognised slum areas, public lands, and rights-of-way); and
6. A lack of access to capital via credit, grants, or loans from credit unions, banks, and international development agencies.²⁵

²⁴ WIEGO, 2021.

²⁵ Linares, 2003.





Photo: OCG Saving The Ocean, Unsplash

Informal waste sector integration is becoming increasingly mainstreamed. The integration of waste pickers into formal MWSM systems has gained growing recognition and support by governments, international organisations, and private sector business in recent decades. Public awareness that waste with economic value is not waste is also growing, thanks to educational and recycling programmes. Diverse cultural phenomena – from award-winning films such as *Waste Land*, *Garbage Dreams*, and *Slum Dog Millionaire*, to the presence of waste pickers in high-profile events such as the 2014 Olympics – have helped them gain public visibility. Support from civil society and international organisations has also grown, through NGOs such as WIEGO and AVINA and donor programmes including the multi-donor Regional Initiative for Inclusive Recycling (IRR), the ongoing work of GTZ/GIZ, and USAID’s Municipal Waste Recycling Program (MWRP) all provide varied forms of support to waste pickers across multiple countries.²⁶ In 2013, the IRR published *Preparing Informal Recycler Inclusion Plans: An Operational Guide*,²⁷ the first practical manual for waste picker integration in cases of dump closure. The Guide was applied in projects financed by the Inter-American Development Bank (IDB) across the region, and in 2018 it served as the basis for a national Guide elaborated by the Ecuadorian Ministry of Environment (see Box 3).²⁸ The growing organisation of waste pickers themselves has further contributed to this trend, allowing their views and demands to be heard, including what they consider to be their barriers and how to integrate their challenges and improve working conditions.²⁹

²⁶ USAID, 2020.

²⁷ Cohen et al., 2013.

²⁸ Cohen et al., 2018.

²⁹ Dias, Sonia. 2024. “Supporting Waste Pickers in Brazil’s Cities: What’s Needed and What Needs to Change?” IIED Insight, 18 January. <https://www.iied.org/supporting-waste-pickers-brazils-cities-whats-needed-what-needs-change>.

Box 1: Studying the Recycling Market in San Salvador, El Salvador

A study conducted in San Salvador, El Salvador revealed that its informal sector recycling market is multi-layered, involving diverse actors at various levels (scavengers working for bosses at the landfill, street collectors purchasing recyclables directly from households via pushcart, intermediaries buying those materials from street collectors, small intermediaries accumulating cleaned and packed products and storing them in warehouses, and final intermediaries selling in bulk to industries and local businesses). The study demonstrated in detail the level of sophistication within the informal recycling sector.

The study also found that five local formal-sector industries purchased 854 tons of paper, 20 tons of aluminum cans, 58 tons of plastic, and 88,000 glass bottles monthly from informal sector actors at a total cost of US\$100,000 per month. This represents a significant profit for the informal entrepreneurs, who operate with a low overhead, with informal sector businesses exporting recyclables (plastics, glass, aluminum, paper, etc.) on to developed countries, depending on international market prices.³⁰



Photo: Jon Moore, Unsplash

³⁰ Linares, Carlos, 1994. "Urban Environmental Challenges: New Directions for Technical Assistance to Cities in Developing Countries." World Resources Institute, WRI Issues in Development. Washington, DC.



Photo: Fernando Makers, Pexels

LEVERAGING LOCAL KNOWLEDGE AND INNOVATION

Technologies should be appropriate to the existing context. New SWM-related technologies are being developed and adopted, from Smart Waste Technology³¹ to Waste-to-Energy. While technology transfers can in some cases improve SWM systems in developing countries, such endeavours should be approached with caution. Introducing new technologies without due consideration of the economic, social, environmental, and political context can result in failures and negative impacts. While governments may be attracted to high-tech solutions from more economically advanced countries, experience shows that low-tech, low-cost systems are often cheaper and easier to build, operate, and

maintain and overall, better suited to the local waste stream composition and value chain. **Recognising and integrating local cultural and social norms, skills, capacities, and knowledge - as well as resource constraints on construction, maintenance and repair - can help increase the uptake and sustainability of new SWM practices.**

In Diadema, Brazil, the local sorting facility does not use a conveyor belt, which requires fuel and is prone to wear and breakdown. Instead, it uses a non-mechanical system in which trucks dump sorted recyclables into a cage, from which they descend in a controlled manner to sorting agents below. Such

³¹ Guerra, 2023.

technologies are relatively easy and inexpensive to install, operate, and maintain. Other cities are developing solutions that involve more sophisticated technologies yet are easily accessible to the public and waste pickers. ReciVeci, in Quito, Ecuador (see Box 3), has developed an innovative and accessible mobile app to support its doorstep collection programme, coupled with the cultivation of the personal relationship between the collectors (who are all women) and participating households. USAID-supported waste collectors in Denpasar, Bali, use a mobile phone app to track daily prices of recyclables purchased by local traders and consolidators to get the best financial arrangements in the plastic waste marketplace, resulting in a more than 30 per cent increase in their incomes.

It is also crucial that technologies are right sized. The Parañaque Materials Recovery Facility (MRF), part of USAID's Clean Cities, Blue Ocean (CCBO) initiative,³² focuses on right-sized sorting line equipment,³³ and Aling Tindera, another CCBO project in the Philippines, leverages neighbourhood sari-sari stores as hubs to monetise and reduce plastic waste.³⁴ A final element to consider is timing. In the Belize Solid Waste Management Project, supported by IDB, the inclusion of waste pickers at the MRF was only considered after the design phase, resulting in a design that was not optimised for their inclusion and required eventual retrofitting. Including waste pickers in the design phase would have led to more efficient results.

Box 2: Supporting Waste Picker Small and Medium Enterprises (SMEs) in Uganda

In Jinja, Uganda, Cities Alliance is partnering with a social enterprise to pilot an innovative digital waste management approach. Grassroots recyclers and waste agents receive training and the technical and financial resources to run recycling businesses, including access to a “waste insure wallet system” that allows them to redeem points for cash, school fees, and micro insurance. A digital platform will connect 9,000 households, 3,000 waste pickers, 300 waste agents, and the large-scale plastics recycling sector. The aim is to integrate waste pickers into the formal plastics recycling value chain. The project is expected to collect over 1,200 metric tons of waste – equivalent to over 10 million plastic water bottles – and save more than 2,450 tons of CO² emissions.



Photo: Olanma Etigwe-uwa, Pexels

³² The CCBO programme is part of USAID's Save Our Seas Initiative <https://www.usaid.gov/urban/save-our-seas>.

³³ Romanik and Ilunga, 2022.

³⁴ Donnelly and Hartman, 2021.



Photo: Mumtahina Tanni, Unsplash

STRENGTHENING MSWM SYSTEMS

Local governments are essential to the global effort to end MPP. Local governments, in alignment with the principle of subsidiarity, generally carry the legal mandate to collect, process, treat, and dispose of solid waste. They are responsible for providing adequate SWM services and for formulating and enforcing regulations that set SWM, environmental, and labour standards. Local governments are usually able to contract cooperatives and other workers' organisations as service providers in source-segregated collection. **Increasing or facilitating their access to funding, specialised knowledge, and appropriate technologies, as well as their inclusion in global and national discussions around SWM issues, can help local governments adopt more comprehensive and cohesive actions to prevent, address, and reduce plastic waste.** It can also facilitate the integration of the urban poor into their SWM systems more generally.

The city of **Belo Horizonte**, Brazil,³⁵ has formally recognised waste picker coops as service providers in their municipal recycling since 1993. Other cities, such as Bogotá, Colombia and Pune, India, have also successfully **integrated waste picker organisations into their SWM systems.**³⁶ Strengthening local government awareness of these inclusive approaches and capacity is critical to improving the growth, management, and inclusivity of SWM systems. USAID's CCBO Learning Hub has developed multiple tools - such as the Solid Waste Capacity Index for Local Governments (SCIL) toolkit and Cost of Service Analyses (COSA) - to help local governments from more than 100 countries make SWM decisions.³⁷ Another national capacity strengthening effort in Ecuador is described in Box 3.

³⁵ <https://www.wiego.org/publications/recycling-belo-horizonte-brazil-%E2%80%93-overview-inclusive-programming>.

³⁶ <https://www.wiego.org/publications/waste-pickers-cities>.

³⁷ <https://gateway.on24.com/wcc/eh/3570340/USAID+Clean+Cities%2C+Blue+Ocean+Engagement+Hub>.

Box 3: Strengthening Local Government MSWM Capacity in Ecuador

In Ecuador, municipalities hold the legal mandate for SWM. However, inadequate institutional arrangements, low management capacity, and lack of resources in most municipal waste management units have traditionally hindered the development of truly integrated and sustainable MSWM systems in the country.

In 2010, the Ecuadorian Ministry of Environment launched the National Programme for Integrated Solid Waste Management (PNGIDS) with the goal of designing and implementing an Integrated Solid Waste Management (ISWM) policy and model. The programme also sought to promote recycling and energy recovery via the provision of adequate infrastructure and technical assistance to municipal governments. It incorporated a specific waste picker integration methodology adapted from the 2013 IRR Guide (discussed above).

The programme has since supported capacity strengthening of various municipal governments in numerous areas, including: the assessment of the local context and needs, categorisation of solid waste, creation of adapted tariff models, preparation of local SWM plans, facilitation of the development of inter-municipal SWM cooperative arrangements, and informal waste sector integration.³⁸

Local governments are increasingly recognising and partnering with informal waste pickers. The challenges of expanding and upgrading MSWM systems to meet growing demand has led many cities to experiment with community-based schemes and technologies, as opposed to capital-intensive formal sector solutions.³⁹ Successful integration of informal waste pickers into formal systems requires local governments to:

1. Recognise waste pickers as legitimate actors in the waste system and urban economy;
2. Improve communication with them (via support to their organisational capacity, collective voice, representation, and agency);
3. Develop more flexible and inclusive policies to reduce bureaucratic procedures and excessive paperwork that can hinder their participation in their formal system (for instance, in the creation and formalisation of cooperatives and associations, participating in bidding and contracting processes, etc.);
4. Develop more efficient and appropriate standards and less onerous regulations where there are bottlenecks;



Photo: Anas Jawed, Unsplash

³⁸ Ecuadorian Ministry of Environment, 2020.

³⁹ Kaza et al., 2018.

5. Protect informal sector actors from harassment, threats, health, safety and security risks and lack of social protection; and
6. Facilitate their access to financial resources.

Many cities currently participate in global networks, such as C40, that connect them around SWM-related issues.⁴⁰

The complexity of urban systems demands integrated and collaborative arrangements. Local and central governments acting alone are not always able to meet their growing SWM challenges. Local government authorities have therefore increasingly requested inclusion in national and international discussions around municipal service delivery and urban governance. There is also a growing recognition of the knowledge and experience of grassroots groups and “the other private sector,”



as well as their relevance to reaching the SDGs and related targets. Solutions arrived at through inclusive urban development planning processes that engage the private sector, civil society, and local, national, and international stakeholders around locally driven decision-making and implementation tend to yield more viable, sustainable, and cost-effective results.

Inter-municipal partnerships can leverage and strengthen local government capacity, especially in small- and medium-size cities, to provide adequate and accessible SWM services and infrastructure. Inter-municipal cooperation can increase the efficiency of the entire value chain and reduce service costs via economies of scale. Several types of arrangements can be developed, depending on the local context and common goals. One common approach involves regionalising SWM services by creating multi-city consortia around a shared regional sanitary landfill. It is also important to engage private sector actors where possible, such as through extended producer responsibility (EPR) policies, to strengthen, support, and complement local SWM systems.

A final element to consider in redesigning or upgrading MSWM systems concerns the presence of illicit actors in existing waste and recycling systems that may exert a negative influence over the waste and recycling economy. Solutions to such challenges ultimately depend on context, but diverse approaches have been employed that can be learned from.

Strengthening SWM systems requires adequate access to financing. Sustainable urban growth requires the commensurate expansion and improvement of systems to manage growing waste streams, which in turn demand appropriate financial mechanisms to cover increasing service costs. Most Global South cities, however, lack the financial means to meet their SWM needs, and developing and implementing appropriate funding models remains a challenge. National and municipal budgets do not always prioritise SWM. Municipalities generally seek to provide the highest quality utility services at the lowest possible rates for customers while enhancing tariff collection rates. Rate increases are unpopular but necessary to ensure that water, sanitation, and SWM service charges allow governments to recover current and projected operational and maintenance

40 <https://www.c40.org/what-we-do/scaling-up-climate-action/waste-management/>.

costs and to finance the repair, upgrading, and eventual replacement of aging or outdated systems. Local governments need to maintain the operational and financial stability of their utilities and avoid operational deficits and depletion of reserves. The bundling of service tariffs, particularly in low-income contexts, can help reduce deficits and the number of households in arrears.⁴¹ **Cities can increase the efficiency of existing systems, commercialise waste-related products (e.g., recyclables and gas), and enter into partnerships with businesses, cooperatives, informal waste collectors, and international organisations to help finance their systems, reduce development and maintenance costs, and generate additional revenue.**⁴²

In several LAC countries, MSWM costs are directly financed by municipalities, with an average cost recovery of 51.6 per cent. The main municipal revenue collection mechanisms are property taxes (52.1 per cent), direct billing to users (20.2 per cent), electricity bills (15.3 per cent), and water and sanitation bills (12.4 per cent).⁴³ Prior to the World Bank-financed Integrated Solid Waste Management Project, Argentine municipalities had low awareness of real SWM costs, lacked standard methodologies and accounting system for estimating them, often failed to charge SWM service fees, and tended to under-budget SWM. Through the project, the Secretariat of Environment and Sustainable Development developed the Integrated Urban Solid Waste Management Economic and Financial Matrix as a tool to help municipalities understand real service costs and the value of investments by analysing each stage of the SWM value chain, identifying the proportion of costs recovered by fees, and proposing options for reallocating resources to improve financial sustainability.⁴⁴

⁴¹ Ontario Municipal Cities Company, 2023.

⁴² USAID, 2022.

⁴³ IDB, 2015.

⁴⁴ The World Bank, 2018.

⁴⁵ GRID-Arendal, 2022.

A key part of informal sector integration is the payment of waste pickers for the public services they provide. The suite of social, economic and environmental services performed by informal waste pickers would, if performed by formal private sector actors, be paid for by municipalities and/or residents. In this sense, waste pickers effectively subsidise the collection of urban recyclables at little to no cost to the local governments responsible for providing these services. Recognition of this fact has nevertheless been a sensitive topic with governments. For example, in Koboko, Uganda, the municipality bought tricycles to rent to communities engaged in waste picking. The waste pickers reimbursed the cost of the tricycles via rental fees and took the surplus income from the sale of recyclables as profit. The waste pickers were thus essentially paying for the free collection service they provided to the municipality. In other countries, such as Colombia, waste pickers have made the issue of payment for collection, sorting, and recycling services a political demand of governments and a core component of informal sector recognition and integration.⁴⁵

MSWM AVERAGE COST RECOVERY

51.6%

MSWM costs are directly financed by municipalities

MAIN MUNICIPAL REVENUE COLLECTION MECHANISMS

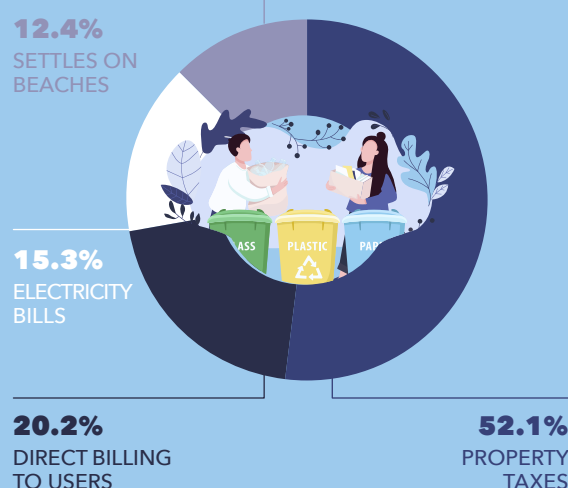




Photo: Ron Lach, Unsplash

RAISING AWARENESS AND SUPPORTING ATTITUDINAL CHANGE

Creating a public dialogue around waste and recycling is a multidimensional process involving multiple actors. Inadequate practices and behaviours by producers, consumers, and SWM authorities lie at the root of the MPP problem.

Changing these will require all system actors – national and local governments, businesses, consumers, and the general public – to change existing attitudes and practices around solid waste in general and plastics in particular. Experience shows that achieving lasting results requires considering the broader social dimension, formative research, and true behavioral change.⁴⁶ Many local and national governments have incorporated campaigns aimed

at broad public engagement, awareness raising, and societal change, and as a result, public awareness of the value of materials once seen as “trash” and recognition of the broader waste and recycling economy is growing. This work can extend from the individual user level, as in the ReciVeci example discussed in Box 3, to the national level, as in the several national public awareness programmes launched in Brazil. One example of a public awareness campaign that had a discernible impact on local and national perceptions toward recycling and waste pickers is the Georgetown, Guyana case described in Box 4.

⁴⁶ <https://urban-links.org/insight/from-the-field-reducing-single-use-plastics-through-social-and-behavior-change-research/>.

Box 4: Changing Public Perceptions Around Waste Pickers and Waste in Georgetown, Guyana

When the Le Repentir dumpsite in Georgetown, Guyana, closed in January 2010, the IDB-financed Georgetown Solid Waste Management Programme (GSWMP) allowed 86 registered informal recyclers (then commonly known as “pickers”) to continue work at the new sanitary landfill, thus maintaining their livelihoods in improved conditions.

A screening of the film *Waste Land* was held at the site, followed by a two-day workshop with the film’s star, Brazilian waste picker leader Sebastiao (“Tiao”) dos Santos, on the benefits of collective organisation. The workshop ended with a collective pledge to form a cooperative (the GT Recyclers) and the initial goal of presenting a float in the upcoming Mashramani carnival. The “pickers” were now “recyclers.”

With support from IDB and the World Health Organization (WHO) / Pan American Health Organization (PAHO), the Ministry of Local Government and Regional Development offered to include the group in its SWM-themed float, and two local hauling companies served as sponsors. The float was built of 80 per cent recovered materials and featured a 12-ft “Moongazer Recycler,” based on a Guyanese folklore figure, who encouraged people to properly dispose of their waste. The recyclers’ uniforms were made of CDs, plastic bottles, and bottle caps. Recyclers carried a large banner reading “GT Recyclers: Recycling is Everybody’s Business” while others collected bottles and cans from the street with plastic bags. Children rode on top of the sound truck throughout the parade. Bystanders spoke, danced, and posed for photos with the recyclers. The singer of the record used as the float’s theme song spontaneously appeared and danced with the recyclers.

The next day, the leading national newspaper featured a full-page cover photo of the float with the headline “Timely.” The following day, GT Recyclers were announced as the second prize winners in the Small Float category. Several months later, three ministers attended the ceremony at the landfill marking the cooperative’s formalisation. The event had a major impact on changing public and government attitudes toward the recyclers and promoting solid waste and recycling in Guyana.

Positive incentives can be powerful. Policy and enforcement have key roles to play at every stage and level of the value chain. **Punitive measures alone are insufficient to bring about the kind of social transformation needed and should be supported by broad, strategic public education and awareness-raising campaigns and positive incentives.** Reinforcing the circular potential of specific materials, for example, can increase public awareness of their economic value and reduce the amount of material going into the waste stream. In developing countries, maximisation of uses and benefits is already a key strategy of poor households with scarce resources.

There are opportunities for these actors to harness the intrinsic value of materials and the opportunity costs of improper waste management. In Port-au-Prince, Haiti, the World Bank in cooperation

with UNOPS and other actors financed a project to clean the city’s canals after the 2010 earthquake. There was so much accumulation of plastic bottles in the canals of the Lower City that it posed a grave flooding risk to the population. The project included a dredging operation and cleaning campaign engaging local communities. It also supported the creation of a series of “Eco Points” where residents could bring plastics for a small payment. Both the paid cleanup campaign and the Eco Points were welcome opportunities for a population faced with chronic unemployment, and the formerly ubiquitous plastic pollution in the canals was virtually eradicated.

Box 5: Inclusive Citizen Engagement Around SWM in Brazil

One country that has succeeded in developing inclusive multi-stakeholder dialogues is Brazil. In 1998, building on the success of a pilot initiative in Belo Horizonte, Brazil created the National Waste and Citizenship Forum (FNLC), which was essentially the world's first multi-stakeholder platform around the issue of SWM. Launched with support from UNICEF, the Forum's goals were to: (1) eradicate child labour in the waste sector; (2) replace dumps with sanitary landfills; (3) integrate waste pickers as service providers; and (4) develop a model for a participatory approach to MSWM.⁴⁷

The National Movement of Waste Pickers (MNCR) was formed in 2001 by organised waste pickers in multiple cities to seek a direct role in shaping national policy and public attitudes around SWM. The MNCR benefitted from broad support among civil society and international organisations. It was directly championed by President Luiz Inácio Lula da Silva, who regularly spoke at its annual events and presided over major national legislative reforms to recognise and support the role of waste pickers in the SWM sector.

In 2010, the award-winning documentary film *Waste Land*, starring future MNCR President Sebastião ("Tião") dos Santos, helped bring the plight and potential of waste pickers to both the national and global public. (Another of Tiao's initiatives to raise public awareness on recycling and waste picker inclusion is described in Box 4.)

This process of organisation, stakeholder engagement, and public awareness-raising has been accompanied by a series of innovative national and municipal laws and interventions that have made Brazil a showcase for cutting-edge approaches to inclusive SWM.



Photo: Jon Tyson, Unsplash

⁴⁷ Dias, S.M., 2006; Dias, S., 2020.



Photo: Leonid Danilov, Pexels

INCORPORATING THE UPSTREAM DIMENSION

Solving the MPP crisis requires a comprehensive approach covering both the downstream and upstream phases. While the effectiveness of MSWM systems plays a major role in determining how plastic waste will enter the environment, the upstream phases of production and consumption determine the production and dissemination of the materials that will later become plastic waste. Thus, **the problem must ultimately be addressed at its source, before materials become waste or even segregated recyclables.** Such a broader scope of analysis

suggests a new paradigm in the global resource economy that requires specific types of intervention. **Reducing - and eventually eliminating - the flow of urban waste into the sea ultimately requires all countries to both improve their SMW legislation and reduce the amount of plastic they generate.**

National-level legal and policy frameworks are therefore critical to enacting and enforcing the necessary commercial, behavioural, and governance changes, including a phased reduction of plastics in

both the phasing-down and phasing-out processes. Countries can set limits on the amount of plastic in the packaging of imported goods or require the use of more environmentally friendly packaging alternatives. Japan, South Korea, the Netherlands, and Singapore have already begun enacting policies to address MPP. Guatemala and Mexico recently launched action plans to prevent marine debris and plastic pollution and to strengthen related public policy. Kenya and Rwanda have banned the use of plastic bags, and Ecuador has passed a law regulating plastic production and scaling down its use. Such positive examples, however, remain more the exception than the norm, especially in low-income countries.

The adoption of strong MPP policies further requires corresponding implementation and enforcement capacity, including the ability of municipalities to collect taxes and maintain transparency in central-to-local transfers.⁴⁸ The EPR policies promote a circular economy and provide opportunities for the private sector to be responsible for the end-of-life phase of packaging they produce. In Sri Lanka, USAID and the Ceylon Chamber of Commerce are partnering through the CCBO programme to pilot a voluntary EPR scheme, with plans to incorporate its lessons into a future nationwide mandatory collection and reporting system.⁴⁹ The informal sector should also be considered as part of the ongoing negotiations on the International Plastic Agreement.

A global consensus is coalescing on the outlines of a strategic approach to addressing MPP.

The need to incorporate upstream actions into a comprehensive programme to address MPP is increasingly acknowledged, and the roles of different actors in this process are becoming more clearly defined, as expressed in diverse strategic plans proposed in recent years by diverse actors. The 2019 UNEP report *Addressing Marine Plastics: A Systemic Approach - Recommendations for Action* proposes a series of systemic actions across the entire plastics value chain, from material engineering to product design, business models, changes in consumer behaviour, and cross-cutting actions in the areas

of knowledge, policy, financing, and coordination. The report also suggests waste management improvements (i.e., in collection, sorting, recycling and disposal) and promoting reuse, remanufacturing, increased public demand for recycled content, and improvements in SWM systems.⁵⁰

A 2019 brief by Cities Alliance, *Solid Waste Management in the Global South*, provides more detailed recommendations for practical measures that municipal authorities should consider when improving MSWM systems. These measures cover all of the various phases and aspects of the MPP process, via:

1. Data collection on the types of waste generated how much and where it is generated;
2. Tax credits and tax relief, allowances on property taxes, customs duties, or sales taxes to motivate investments in waste management improvements;
3. Environmental improvement funds to support pollution reduction and resource protection;
4. Research grants to support the development of new technologies;
5. Product lifecycle assessments to predict the overall environmental burden of products to be used in certification programmes;
6. Bans on materials/wastes with disposal issues (e.g., mercury batteries and plastic bags);
7. Environmental rating of industries, with published lists for consumers (e.g., Indonesia's PROPER programme);
8. Liability legislation to define environmental restoration settlements; and
9. Clean city competitions to reward neighbourhoods and cities with SWM good practices.⁵¹

⁴⁸ UNEP, 2014.

⁴⁹ <https://urban-links.org/insight/from-the-field-reducing-single-use-plastics-through-social-and-behavior-change-research/>.

⁵⁰ UNEP, 2019.

⁵¹ Cities Alliance, 2019.

The 2023 World Bank report *People and Plastics: The Profile, Vulnerabilities, and Role of Informal Waste Workers in Addressing Marine Plastics Pollution* sets out a multi-pronged MPP reduction strategy focused on the need for public awareness raising and policy change. The strategy comprises:

1. Promoting the recognition of waste work, including informal waste work, through awareness-raising and communication actions;
2. Collecting data, stakeholder mapping, and consultation with informal waste workers and their representatives on new policies and regulations;
3. Harmonising policies and regulations with regard to the informal waste sector;
4. Innovative investing in waste pickers and other informal waste workers and their representatives and enterprises; and
5. Promoting equitable working conditions for men and women and preventing child labour.⁵²

These and other proposals share common features that form the outlines of the emerging strategic consensus on a global MPP action plan.

Combining these various existing proposals with the key points mentioned in this paper looks something like this:



Data collection (waste stream characterisation studies, value chain analyses that include the informal sector, stakeholder mapping, product life cycle assessments);



Consultation (at both the national and local system levels, with waste pickers and their representatives, on new policies and regulations);



Policy (harmonising policies and regulations related to the informal sector, bans on non-biodegradable materials and toxic waste, tax credits and relief, allowances on property taxes, customs duties and sales taxes to finance SWM investments, liability legislation to define environmental restoration settlements, and creation of positive legal incentives);



Regulation (environmental rating of industries, with published lists for consumers (e.g., Indonesia's PROPER programme);



System strengthening (strengthening waste collection and recycling capacity and supporting informal sector integration, including the use of appropriate technologies);



Development of collaborative arrangements (e.g., cooperation among municipalities, private sector actors, and the general public; establishing multi-actor forums and dialogues around waste and recycling);



Financing (environmental improvement funds to support pollution reduction and resource protection, investments in waste picker integration, facilitating access to financing and credit, research grants to support development of new technologies in materials engineering, product design and business models, and financing positive incentives);



Capacity strengthening (training, awareness raising and horizontal knowledge exchanges with key system actors);



Behavioral change (public awareness campaigns to promote recycling, reuse, remanufacturing, public demand for recycled goods, SWM system improvements, waste picker recognition, prevention of child labour, and changes in consumer behavior; and creating positive incentives, such as clean city competitions to reward good practices).

The final goal of this upstream dimension is a shift toward a circular economy and zero waste.

A circular economy redefines waste streams as new sources of materials – via recovery, reuse and recycling – with the aim of reducing the environmental impacts of the consumer economy to the greatest possible extent. The circular economy model is based on three design-driven principles: (1) elimination of waste and pollution; (2) circulation of products and materials at their highest value; and (3) regeneration of nature.

Efforts to move toward a circular economy are gaining momentum. The 2019 International Resource Panel (IRP) First Global Resource Outlook calls for a fundamental change in the global resource economy, including a shift to a resilient system of sustainable consumption and production aligned with circular economic principles that benefits businesses, people, and the environment. It does this through the global implementation of:

1. Reducing the growth of plastic production and consumption (including via market-based instruments);
2. Substituting plastic with paper and compostable materials;
3. Designing products and packaging for recycling to expand the share of economically recyclable plastic from some 21 per cent to 54 per cent;
4. Expanding waste collection rates in middle- and low-income countries to 90 per cent in all urban areas and 50 per cent in rural areas, including support for the informal collection sector;
5. Doubling the global mechanical recycling capacity (to 86 million tons per year); and
6. Reducing plastic waste exports to countries with low collection rates by 90 per cent.

IRP estimates that implementing these interventions could lead to an 82 per cent reduction in MPPs by 2040, compared to business as usual.⁵³ The Ellen MacArthur Foundation also provides an excellent conceptual framework for implementing policies and actions toward a truly circular economy.⁵⁴

Box 6: Supporting Legislative Reforms on MPP in Vietnam

A new Cities Alliance initiative is focusing on both upstream and downstream solutions to address trans-boundary MPP along the Mekong River. The Mekong is the third-longest trans-boundary river in Asia and critical to transport, energy, biodiversity, aquaculture, and agriculture in the region. It is also one of the most polluted rivers in the world, transporting tens of thousands of tons of plastic to waters and coastal areas across ASEAN countries, and one of 10 rivers that produce 90 per cent of all MPPs globally. The problem is expected to increase, as the Lower Mekong Basin's population of approximately 70 million heads toward 110 million in the next 25 years.

As the UN Global Plastics Treaty strengthens relevant legislation, towns and cities along the corridor will receive technical and financial support under the project to help enforce the treaty and apply innovative approaches to SWM and related behavioural change.

⁵³ <https://www.resourcepanel.org/reports/global-resources-outlook-2019>.

⁵⁴ World Economic Forum, Ellen MacArthur Foundation and McKinsey & Company, 2016.

Conclusion

Cities are key centres of production of both MPPs and social exclusion. Social exclusion not only coexists with waste, but itself leads to the creation of an informal waste sector that suffers additional forms of exclusion, even as it contributes to the local (and ultimately, the global) economy and environment.

Cities are where the intrinsic inequalities of the waste value chain are most manifest, and they reflect the challenges of a broader chain that extends beyond the cities themselves. A comprehensive approach to the MPP crisis and its solutions should consider the urban poor as both an affected group and - when properly engaged, supported and integrated - a potential part of the solution.

The waste and plastics value chain and its impacts on both the environment and the most vulnerable members of society demand a comprehensive and holistic analysis. The MPP crisis has traditionally been approached as a solid waste problem, with a focus on the downstream segment of the value chain, or on what happens to plastics once they become defined as “waste.”

An understanding of the true dimensions of the problem, however, requires a holistic approach that takes into account the entire value chain in all its phases and aspects, from the upstream (where and how the plastics are produced, their specific nature and quality, where, how and to whom they are sold, and where, how and by whom they are used) to the downstream (their treatment, handling, and destination once redefined as waste).

The dual production of MPPs and social inequality lends itself to a two-pronged approach. Considering the plastics value chain in its entirety lends itself to a two-tiered focus: on inclusive solutions downstream to harness and leverage the strengths of the existing informal sector (e.g., doorstep collection, improved sorting, and upcycling); and support for longer-term policy and societal changes upstream (e.g., avoidance,

minimisation, and the development and mainstreaming of viable biodegradable plastic substitutes). Such a dual approach seeks to maximise the social value of economic resources while minimising the negative externalities of existing modes of production and consumption. This upstream work would focus on the private sector (e.g., via the creation of green job and income opportunities for vulnerable urban residents), local governments (e.g., in the provision of land), and national governments (e.g., via providing incentives to businesses to compensate costs in the initial stages and additional funding sources to strengthen incentives). At the same time, it would engage diverse system actors, such as civil society, waste pickers, and the general public. This approach would ultimately have two goals: To reduce and ultimately halt the flow of plastic waste and other harmful waste, with a circular economy as the final goal; and to strengthen integration of the informal sector and urban poor.



Photo: Hashtag Melvin, Unsplash

Bibliography

- ABRELPE (Associação Brasileira de Empresas de Limpeza Pública e Resíduos Especiais). 2015. *Overview of Solid Waste in Brazil*. São Paulo.
- Chen, Martha with Jenna Harvey, Caroline Wanjiku Kihato and Caroline Skinner. 2018. *Inclusive Public Spaces for Informal Livelihoods: A Discussion Paper for Urban Planners and Policy Makers*. Prepared by WIEGO for the Cities Alliance Joint Work Programme for Equitable Economic Growth in Cities. Manchester, UK: WIEGO. <https://www.wiego.org/sites/default/files/publications/files/Public%20Space%20Discussion%20Paper.pdf>
- Cities Alliance. 2016. *Equitable Economic Growth in Your Town or City. A Diagnostic Toolkit*. Prepared for Cities Alliance and UNOPS by IPE Triple Line. Brussels. <https://www.citiesalliance.org/sites/default/files/Toolkit%20manual%20FINAL%2029.06.2016.pdf>.
- Cities Alliance. 2019a. *Seizing the Opportunity: Rapid Urbanisation and the Circular Economy*. Brussels. <https://www.citiesalliance.org/resources/publications/cities-alliance-knowledge/seizing-opportunity-rapid-urbanisation-and>.
- Cities Alliance. 2019b. *Issue Brief: Solid Waste Management in the Global South*. Brussels. https://www.citiesalliance.org/sites/default/files/2020-06/JWP-EEG%20Issue%20Brief%2003%20-%20Solid%20Waste%20Management_0.pdf.
- Cohen, Peter F., Jeroen Ijgosse, and German Sturzenegger. 2013. *Preparing Informal Recycler Inclusion Plans: An Operational Guide*. IDB: Washington, DC. <https://publications.iadb.org/en/preparing-informal-recycler-inclusion-plans-operational-guide>.
- Cohen, Peter F. 2014. "Resettlement and the Human Dimension: Lessons from an Informal Recycler Inclusion Project." Paper presented at the 34th Annual Conference of the International Association for Impact Assessment (IAIA). <https://conferences.iaia.org/2014/IAIA14-final-papers/Cohen,%20Peter.%20%20Resettlement%20and%20the%20human%20dimension.pdf>.
- Cohen, Peter, Paula Guerra, and Claudia Andrade. 2018. *Guía Operativa para Elaboración de Planes de Reciclaje Inclusivo en Ecuador*. Iniciativa Regional para el Reciclaje Inclusivo (IRR). <https://www.ambiente.gob.ec/wp-content/uploads/downloads/2023/07/10.pdf>.
- De Soto, Hernando. 2000. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. Basic Books: New York City.
- Dias, Sonia Maria. 2011. "Integrating Informal Workers into Selective Waste Collection: The Case of Belo Horizonte, Brazil." WIEGO Urban Policies Briefing Note, No. 6. https://www.wiego.org/sites/default/files/migrated/publications/files/Dias_WIEGO_PB4.pdf.
- Dias S.M. and M. Samson. 2016. *Informal Economy Monitoring Study Sector Report: Waste Pickers*. WIEGO: Cambridge, MA. <https://www.wiego.org/publications/informal-economy-monitoring-study-sector-report-waste-pickers>.
- Dias, Sonia Maria. 2016. "Waste Pickers and Cities." *Environment and Urbanization*. 28(2), pp. 375-390. <https://doi.org/10.1177/0956247816657302>.

- Dias, Sonia Maria, and A.C. Ogando. 2019. *Waste Cooperatives in Brazil: Exploring Links Between Cooperative Ideals and Raising Gender Awareness*. in: Roelants, B., E. Hyungsik, S. Esim, and S. Novkovic, S., eds.. 2019. *Cooperatives and the World of Work*. Routledge: London, pp.115-129.
- Donnelly, Melinda, and Georgia Hartman. 2022. "Eco-Warriors: From Waste Collectors to Community Leaders." USAID UrbanLinks, 8 March. <https://urban-links.org/insight/eco-warriors-from-waste-collectors-to-community-leaders/>.
- EEA (European Environment Agency). 2023. "Human Needs: The Drivers of Marine Litter." <https://www.eea.europa.eu/publications/european-marine-litter-assessment/human-needs-the-drivers-of>.
- Fair Circularity Initiative, Systemiq. 2024. *A Living Income for the Informal Waste Sector: A Methodology to Assess the Living Income of Waste Workers in the Context of the Global Plastics Treaty*. https://faircircularity.org/app/uploads/2024/05/Systemiq-A_Living_Income_for_the_Informal_Waste_Sector_EN.pdf.
- Georgieva, Sophia V., Maria Manuela Faria, Nina Bhatt, Hannah Zoe Fay Rosenthal, and Tuan Anh Le. 2023. *People and Plastics - The Profile, Vulnerabilities, and Role of Informal Waste Workers in Addressing Marine Plastics Pollution*. Synthesis report from country studies in Indonesia, the Philippines, and Viet Nam (English). World Bank Group: Washington, D.C. <http://documents.worldbank.org/curated/en/099030724102533579/P1772251e7542e04319cf71929a5508ac9e>.
- Government of Ecuador Ministry of Environment. 2020. National Programme for Integrated Solid Waste Management (Programa Nacional para Gestión Integral de Residuos Sólidos). <https://www.ambiente.gob.ec/wp-content/uploads/downloads/2020/07/5.PROYECTO-PNGIDS.pdf>.
- Government of Ecuador, National Assembly. 2020. Ley Orgánica para la Racionalización, Reutilización y Reducción de Plásticos de un Solo Uso. <https://www.produccion.gob.ec/wp-content/uploads/downloads/2023/02/1.-Ley-de-plasticos-R.Oficial.-21.12.2020-Comprimido.pdf>.
- Grau, Xavier. 2014. "Belize Shows the Caribbean How to Better Manage Waste Products." IDB, 11 April. <https://blogs.iadb.org/caribbean-dev-trends/en/belize-shows-caribbean-better-manage-waste-products/>.
- GRID-Arendal. 2022. *A Seat at the Table - The Role of the Informal Recycling Sector in Plastic Pollution Reduction, and Recommended Policy Changes*. GRID-Arendal. <https://www.grida.no/publications/863>.
- Guerra, Paula. 2023. "Technological Innovation in Solid Waste Management: The Digital Revolution is Transforming the Way We See and Handle Our Waste." IDB, 27 February. <https://blogs.iadb.org/agua/en/technological-innovation-in-solid-waste-management-the-digital-revolution-is-transforming-the-way-we-see-and-handle-our-waste/>.
- Hartman, Georgia and Melinda Donnelly. 2021. "Women in the Waste Sector: Unlocking Global Climate Gains through Local Action." Climate Links. 19 August. <https://www.climatelinks.org/blog/women-waste-sector-unlocking-global-climate-gains-through-local-action>.
- Hydroconseil. 2018. Haiti: Élaboration d'un plan de gestion et de valorisation des déchets pour la ville des Cayes. Hydroconseil Project Profile. <https://hydroconseil.com/gestion-des-dechets-haiti-661/>.
- IDB (Inter-American Development Bank). 2015. Solid Waste Management and Urban Improvement in Northern Haiti. IDB Project Profile. <https://www.iadb.org/en/project/HA-L1106>.
- IAWP (International Alliance Of Waste Pickers). 2022. Constitution of the International Alliance of Waste Pickers. <https://globalrec.org/constitution/>.

- ILO (International Labour Organization). 2015. Transition from the Informal to the Formal Economy Recommendation (No. 204). https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:R204.
- IRP (International Resource Panel). 2021. Policy Options to Eliminate Additional Marine Plastic Litter by 2050 Under the G20 Osaka Blue Ocean Vision. Fletcher, S., K.P. Roberts, Y. Shiran, J. Virdin, C. Brown, E. Buzzi, I.C. Alcolea, L. Henderson, F. Laubinger, L. Milà i Canals, S. Salam, S.A. Schmuck, J.M. Veiga, S. Winton, and K.M.Youngblood. Report of the International Resource Panel. UNEP: Nairobi, Kenya.
- Kaza, Silpa, Lisa Yao, Perinaz Bhada-Tata, and Frank Van Woerden. 2018. *What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050*. Urban Development Series. The World Bank: Washington, DC.
- Lebreton, Laurent and Anthony L Andrady. 2019. "Future Scenarios of Global Plastic Waste Generation and Disposal." *Palgrave Communications*, 5(6).
- Linares, Carlos. 2003. *Institutions, and the Urban Environment in Developing Countries: Challenges, Trends and Transitions*. Hixon Center for Urban Ecology, Yale University.
- Mathieu, Mickens, Pierre Faubert Lubin, and Antoine Pierre. 2020. *La gestion des déchets solides en Haïti: une analyse exploratoire*. UNDP . https://www.undp.org/sites/g/files/zskgke326/files/2022-06/undp-ht-La%20gestion%20des%20dechets%20solides%20en%20Haiti_une%20analyse%20exploratoire.pdf.
- National Geographic Society. 2023. Great Pacific Garbage Patch, Online Research.
- Núñez, Anamaría, and Onyemauchekwu Osuji, eds. 2015. IDB. *Solid Waste Management in Latin America and The Caribbean*. <https://publications.iadb.org/en/solid-waste-management-latin-america-and-caribbean>.
- Ocean Conservancy. Fighting for Trash Free Seas. <https://oceanconservancy.org/trash-free-seas/>.
- OECD. 2021. *Public Governance Reviews: Haiti: Strengthening Public Administration for Resilient and Sustainable Governance*. OECD Publishing: Paris. https://www.oecd.org/en/publications/oecd-public-governance-reviews-haiti_dfd5f806-en.html.
- OECD. 2022. *Global Plastics Outlook: Policy Scenarios to 2060*. OECD Publishing: Paris. <https://doi.org/10.1787/aa1edf33-en>.
- O'Hare, Patrick and L. Fernandez. 2022. "Waste Pickers Risk Their Lives to Stop Plastic Pollution – Now They Could Help Shape Global Recycling Policies." *The Conversation*, 29 November. <https://theconversation.com/waste-pickers-risk-their-lives-to-stop-plastic-pollution-now-they-could-help-shape-global-recycling-policies-195311>.
- Ontario Municipal Cities Company. 2023. Concerning Proposed Rate Increases for Water, Sewer and Solid Waste Service Charges.
- PADF (Pan-American Development Foundation), IDB, ECSSA. 2022. Ayiti Blue Ocean Plastics Solution. <https://www.padf.org/oceans/>.
- Parra, Federico and Olga Abizaid. 2021. *Formalization as Public Service Providers: Achievements and Obstacles for Colombia's Waste Pickers*. <https://www.wiego.org/formalization-waste-picker-sector-columbia>.
- Petterd, Adele, Amardeep Wander, and Helen Cooney. 2019. *Belize: Waste Data Report*. Prepared by Asia Pacific Waste Consultants (APWC) for the Commonwealth Litter Programme (CLiP), the Centre for Environment Fisheries and Aquaculture Science (Cefas). <https://apwc.com.au/wp/reports/>.

- Reddy, Simon and Winnie Lau. 2020. Breaking the Plastic Wave: Top Findings for Preventing Plastic Pollution. The Pew Charitable Trusts and SYSTEMIQ. <https://www.pewtrusts.org/en/research-and-analysis/articles/2020/07/23/breaking-the-plastic-wave-top-findings>.
- Romanik, Clare and Nadia Ilunga. 2022. Stopping Ocean Plastic Pollution from Cities: A USAID Case Study of Parañaque City, Philippines. USAID. <https://urban-links.org/wp-content/uploads/Full-Paranaque-Case-Study.pdf>.
- Scheinberg, Anne, Rachel Savain, Aziz Alaoui, Ilyès Abdeljaoud, Abdelhamid Ghribi, Yasser Dweik. 2015. *Valuing Informal Integration, Inclusive Recycling in North Africa and the Middle East*. GIZ: Eschborn. https://www.retech-germany.net/fileadmin/retech/05_mediathek/laenderinformationen/Tunesien_Valuing_Informal_Integration_en.pdf.
- Solo, Tova Maria. 2003. *Independent Water Entrepreneurs in Latin America: The Other Private Sector in Water Services*. The World Bank, Washington, DC. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/786541468012040884/independent-water-entrepreneurs-in-latin-america-the-other-private-sector-in-water-services>.
- Sotomayor, Damián Burneo, Paola Pila Guzmán, Erika Rea Rubio. 2014. Cuenca: "Recycling and Decarbonisation Through a Gender Lens." IIED, 14 February. <https://www.iied.org/cuenca-recycling-decarbonisation-through-gender-lens>.
- The Economist Intelligence Unit. 2017. Progress and Challenges for Inclusive Recycling: An Assessment of 12 Latin American and Caribbean Cities. EIU: New York, NY.
- The Ocean Cleanup. <https://theoceancleanup.com>.
- The Pew Charitable Trust and SYSTEMIQ. 2020. *Breaking the Plastic Wave: A Comprehensive Assessment of Pathways Towards Stopping Ocean Plastic Pollution*. https://www.pewtrusts.org/-/media/assets/2020/07/breakingtheplasticwave_report.pdf.
- Trulli E, N. Ferronato, V. Torretta, M. Piscitelli, S. Masi, and I. Mancini. 2018. "Sustainable Mechanical Biological Treatment of Solid Waste in Urbanized Areas With Low Recycling Rates." *Waste Management* (71), Jan. 2018 (pp.556-564). doi: 10.1016/j.wasman.2017.10.018.
- UNDRR. Marine Debris. www.undrr.org/quick/78678. Accessed 18 September 2024.
- UNEP. 2019. *Addressing Marine Plastics: A Systemic Approach - Recommendations for Action*. UNEP: Nairobi, Kenya. <https://www.unep.org/resources/report/addressing-marine-plastics-systemic-approach-recommendations-actions>.
- UNEP. 2021a. *From Pollution to Solution: A Global Assessment of Marine Litter and Plastic Pollution*. <https://www.unep.org/resources/pollution-solution-global-assessment-marine-litter-and-plastic-pollution>.
- UNEP. 2021b. *Roadmap for the Progressive Closure of Dumpsites in Latin America and the Caribbean*. ISWA. <https://wedocs.unep.org/handle/20.500.11822/34919>.
- USAID. 2020. "Honoring Unsung Heroes in the Fight Against Ocean Plastic Pollution." USAID Urban Links, 5 June. <https://urban-links.org/insight/honoring-unsung-heroes-in-the-fight-against-ocean-plastic-pollution/>.
- USAID. 2022a. *Clean Cities, Blue Ocean: Funding Options for Solid Waste Systems in Developing Countries*. Produced by Tetra Tech for review by USAID, Clean Cities, Blue Ocean Programme. https://urban-links.org/wp-content/uploads/2022_USAID_CCBO-Funding-Options-Report-for-Solid-Waste-Systems_final2.pdf.

- USAID. 2022b. "Outfitting Waste Workers: Testimonies of a Safer, More Equitable Waste Sector in the Philippines." USAID UrbanLinks, 11 August. <https://urban-links.org/insight/outfitting-waste-workers-testimonies-of-a-safer-more-equitable-waste-sector-in-the-philippines/>.
- USAID. 2023a. *Women in Waste's Economic Empowerment Activity: Empowering Women to Reduce Ocean Plastics*. https://urban-links.org/wp-content/uploads/2024.03_USAID_CCBO_WWEE_508_v2.pdf.
- USAID. 2023b. "From the Field: Reducing Single-Use Plastics Through Social and Behavior Change Research." USAID UrbanLinks, 23 May. <https://urban-links.org/insight/from-the-field-reducing-single-use-plastics-through-social-and-behavior-change-research/>.
- USAID. Clean Cities, Blue Ocean Virtual Event and Training Hub. <https://gateway.on24.com/wcc/eh/3570340/USAID+Clean+Cities+per+cent2C+Blue+Ocean+Engagement+Hub>.
- Viva Rio. 2012. *Les marchés du centre de Port-au-Prince : Morphologie, circuits, agents, gouvernance*. Groupe de Recherche sur l'Economie et la Culture (NuCEC/UFRJ). http://www.nucec.net/uploads/2/7/2/8/27281669/les_marches_du_centre_de_port_au_prince.pdf.
- WIEGO. 2015. *Informality and Illegality: Unpacking the Relationship*. <https://www.wiego.org/sites/default/files/resources/files/WIEGO-Informality-and-Illegality.pdf>.
- WIEGO. 2017. Gender and Waste Project. <https://www.wiego.org/gender-waste-project>.
- WIEGO. 2018. *Street Vendors and Public Space: Essential Insights on Key Trends and Solutions*. <https://www.wiego.org/sites/default/files/resources/file/Street%20Vendors%20and%20Public%20Space%20-%20An%20EBook.pdf>.
- WIEGO. 2021. Reducing Greenhouse Gas Emissions through Inclusive Recycling: Methodology and Calculator Tool. <https://www.wiego.org/ghg>.
- WIEGO. 2023. Child Care in Markets. <https://www.wiego.org/child-care-markets>.
- World Economic Forum, Ellen MacArthur Foundation and McKinsey & Company. 2016. *The New Plastics Economy: Rethinking the Future of Plastics*. <https://www.ellenmacarthurfoundation.org/the-new-plastics-economy-rethinking-the-future-of-plastics>.
- WWF. 2019. *No plastic in nature: assessing plastic ingestion from nature to people*. https://assets.wwf.org.au/image/upload/v1/website-media/resources/pub-no-plastic-in-nature-assessing-plastic-ingestion-from-nature-to-people-jun19?_a=ATO2Ba20

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