



Women in Informal Employment:
Globalizing and Organizing

Extended Producer Responsibility (EPR) and Waste Pickers

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WIEGO Technical Briefs provide guides for both specialized and non-specialized audiences. These are designed to strengthen understanding and analysis of the situation of those working in the informal economy as well as of the policy environment and policy options.

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Abbreviations

ACC	American Chemistry Council	MNRCH	"El movimiento nacional de recicladores de Chile" or National Movement of Recyclers of Chile (MNRCH) or Chilean Recyclers Movement
ANARCH	National Association of Waste Pickers of Chile; Asociación Nacional de Recicladores de Chile		
ANCAT	Associação Nacional de Catadores e Catadoras de Materiais Recicláveis	NAMA	Nationally Appropriate Mitigation Action
BFFP	Break Free from Plastics	NERC	Northeast Recycling Council
COVID-19	Coronavirus Disease	NEWMOA	Northeast Waste Management Officials' Association
ECOCE	Ecology and Corporate	NGO	Non-Governmental Organization
EPR	Extended Producers Responsibility	NGT	National Green Tribunal
FACCyR	Federación Argentina de Cartoneros, Carreros y Recicladores	PET	Polyethylene terephthalate
		PETCO	Pet Recycling Trading Company
FMCG	Fast Moving Consumer Good	PRO	Producer Responsibility Organization
GAIA	Global Alliance for Incinerator Alternatives	PSI	Product Stewardship Institute
GRC	Glass Recovery Company	SDG	Sustainable Development Goals
GTZ	German Technical Cooperation	StEP	Solving the E-waste problem.
ILO	International Labour Organization	RDF	Refuse Derived Fuel
ILSR	Institute for Local Self-Reliance	UNDP	United Nations Development Programme
ISWA	International Solid Waste Association	UN HABITAT	United Nations Human Settlements Programme
ITC	India Tobacco Company	WOW	Wealth out of Waste
OECD	Organisation for Economic Co-operation and Development	WEF	World Economic Forum
MLP	Multi Layer Packaging	WIEGO	Women in Informal Employment: Globalizing and Organizing
		WTE	Waste to Energy
		WWF	World Wide Fund for Nature

Key Findings

- Extended Producer Responsibility (EPR) extends the responsibilities of the manufacturer of a product to its entire life cycle including the take-back, recycling and final disposal, arguing that if producers have to pay for the environmental costs of their products, they will redesign products and packaging to minimize disposable content and make them easily recyclable.
- EPR poses unique opportunities as well as threats to the waste picking community. The Global Alliance of Waste Pickers, representing 20 million waste pickers, collectively deliberated over two years and articulated a nuanced position on inclusive Extended Producer Responsibility.
- The occupational expertise of waste pickers, due to their historical contribution to waste management and their significant vulnerability in the context of the dynamic landscape of EPR policy and systems, makes them crucial stakeholders to engage with.
- A review of EPR policies attempting inclusion of waste pickers in places like Brazil, Chile, India and South Africa reveals that inclusive EPR policies and schemes are largely aspirational and fall short of the expectations and demands of the Global Alliance of Waste Pickers.
- A combination of legislative, facilitative and governance actions constitute the preconditions for inclusive EPR.
- The fundamental principles of fair EPR entail comprehensive research and mapping of stakeholders; their direct engagement in formulating policy and determining details of implementation; and a commitment by producers to improve packaging and the management of materials.
- Inclusive EPR needs to be mandatory and government led; ensure integration of the informal sector; ascribe comprehensive financial responsibility and risk protection squarely on producers; be transparent with robust oversight mechanisms; proffer clear communication and training on EPR systems; and engage waste pickers as equal partners giving them due credit.
- A “just transition” underscores the recognition, participation and contribution of waste pickers in both the design and implementation of alternative paradigms of material handling.

1. Background

1.1 The need for this position paper

Around the world, growing plastic consumption and mismanagement of plastic waste has increased pressure to improve waste management and material production processes. Circular economy strategies and actions such as those to reduce, reuse and recycle materials are gaining momentum, with the intention to reduce plastic pollution. This is also resulting in rising investment and policy implementation in waste systems around the world. Extended Producer Responsibility (EPR), has gained popularity as a policy or voluntary practice¹ that seeks to reduce waste in the environment by holding producers (companies) financially, and sometimes also operationally, responsible for recovering their products and packaging for recycling or disposal. The rationale is that EPR systems can incentivize companies to improve the packaging and products they generate.

Industry response to plastic pollution has emphasized voluntary plastic waste collection projects, sometimes in partnership with local non-governmental organizations (NGOs) or waste picker groups. When these initiatives focus on low-value material, they frequently promote problematic incineration technologies like chemical recycling, plastics-to-fuel and co-processing in cement kilns as end of life treatment. In this way, multinational corporations

are co-opting the demand for producer responsibility to advance corporate-led and incineration-focused EPR systems. (America's Plastic Makers and American Chemistry Council, 2021; Down to Earth, 2022; GAIA, 2020).

EPR, which can be to the benefit or detriment of existing waste actors, is disrupting waste systems around the world, depending on the system design. For informal waste pickers, who are the most precarious actors in waste systems, EPR could generate socially inclusive² opportunities for integration in formal waste management by introducing new investment and resources into waste systems. In practice, however, most EPR systems overlook waste pickers and other informal waste workers, and introduce competition and barriers that threaten their livelihoods.

EPR is often cited among policies and practices to promote a Circular Economy, a production and consumption model that aims to reduce disposal through the reuse, repair and recycling of materials. Circular Economy proponents face increasing pressure to account for a “just transition” for workers who have come to rely on labour opportunities within linear production models, as well as for workers who support existing circular approaches but who may not be included in new circularity efforts and investments (Schröder, 2020). As Circular Economy policies and investments gain steam, it is largely unclear to what degree waste pickers and other informal workers are benefiting from or harmed by these

¹ While EPR traditionally describes a policy framework, this paper reflects the common usage of the concept around the world, which often includes voluntary practices in which producers take some degree of end-of-life responsibility for packaging and products.

² “Waste management with social inclusion means fairly remunerating and improving infrastructure and administrative support for waste pickers and other informal waste workers that are already organized, as well as funding pathways for unaffiliated informal waste workers to improve their work through access to infrastructure and occupational safety as well as the formation of cooperatives and other types of organizations” (Global Alliance of Waste Pickers 2021).

changes, suggesting that no clear strategy exists for a “just transition” towards circularity. Waste picker experiences with EPR indicate that circular economy approaches are not yet addressing the need for a “just transition” for workers like them.

While there is an increasing amount of literature analyzing EPR, there is little analysis on the impacts of these schemes on the informal sector or how they can be designed to integrate it. This policy paper intends to help fill this gap, drawing on learnings from the Global Alliance of Waste Pickers through their investigation into EPR.

1.2 The Global Alliance of Waste Pickers and EPR

The Global Alliance of Waste Pickers is a network of waste picker groups constituting more than 100 organizations across 34 countries representing over 300,000 workers (Global Alliance of Waste Pickers, 2021).

In 2018, waste pickers and organizers from around the world met in Argentina as part of an exchange facilitated by Women in Informal Employment: Globalizing and Organizing (WIEGO) and the Global Alliance of Waste Pickers. During this exchange, participants expressed an urgent need to understand and better respond to EPR, as new EPR for packaging proposals are being implemented in countries around the world, including some countries where Alliance members are active, such as South Africa, Ghana, Ecuador, Chile, the United States, India, Argentina, France, Senegal, and Colombia. Many waste picker organizations struggle to respond effectively to EPR proposals because of their technical nature, and because governments and companies are not making adequate efforts to include waste pickers in planning and implementation.

The Global Alliance of Waste Pickers and WIEGO established a working group to better understand and respond to the impact of EPR on waste pickers and their organizations. The working group consisted of waste pickers, organizers and technical support people within waste picker organizations. The members of the working group shared their experiences with EPR practices and legislation. The group conducted a literature review and developed case studies based on their experiences with EPR. The group also developed worker education materials to build a baseline understanding of EPR and solicit waste picker recommendations. More than twenty local, regional and global workshops were conducted, engaging over 260 waste pickers across five continents (South America, North America, Africa, Europe, and Asia). The feedback from these engagements fed into a collective position on EPR (see Annexure 1), the details and background to which are explored in this paper.

1.3 Intended Audience and Objectives

This document is intended for those within waste picker organizations, civil society, government or the private sector interested in or working on EPR policies. This document is meant to help fill gaps in EPR analysis to better address the question of waste picker integration into EPR, and spark deeper debate on the subject, as well as to inform the design of EPR systems that are more equitable, just and inclusive. To achieve this, the paper identifies potential benefits, challenges and enabling conditions for waste pickers' inclusion in EPR schemes, based on an analysis of existing mandatory and voluntary systems, and legislation. It is beyond the scope of this paper to propose a model for inclusive EPR, because a one-size-fits-all recipe for this does not exist.

Rather, this paper sets the context against which the Global Alliance of Waste Pickers developed its official position on EPR, which identifies enabling factors for more inclusive EPR.

2. What is EPR and why is it growing in popularity?

2.1 Definition and Concept

In the words of Thomas Lindhqvist, who first introduced the concept, EPR is “a policy principle to promote total life cycle environmental improvements of product systems by extending the responsibilities of the manufacturer of the product to various parts of the entire life cycle of the product, and especially to the take-back, recycling and final disposal of the product” (Lindhqvist, 2000).

The rationale behind EPR is that traditional environmental policy can no longer affect the changes required to manage growing post-consumer waste, and that requiring producers to pay for the environmental costs of their products (including recycling and disposal) will incentivize them to reduce those impacts by redesigning products and packaging to minimize disposable content to begin with, and to make products and packaging easily recyclable in the long run.

2.2 Responsibilities within an EPR system

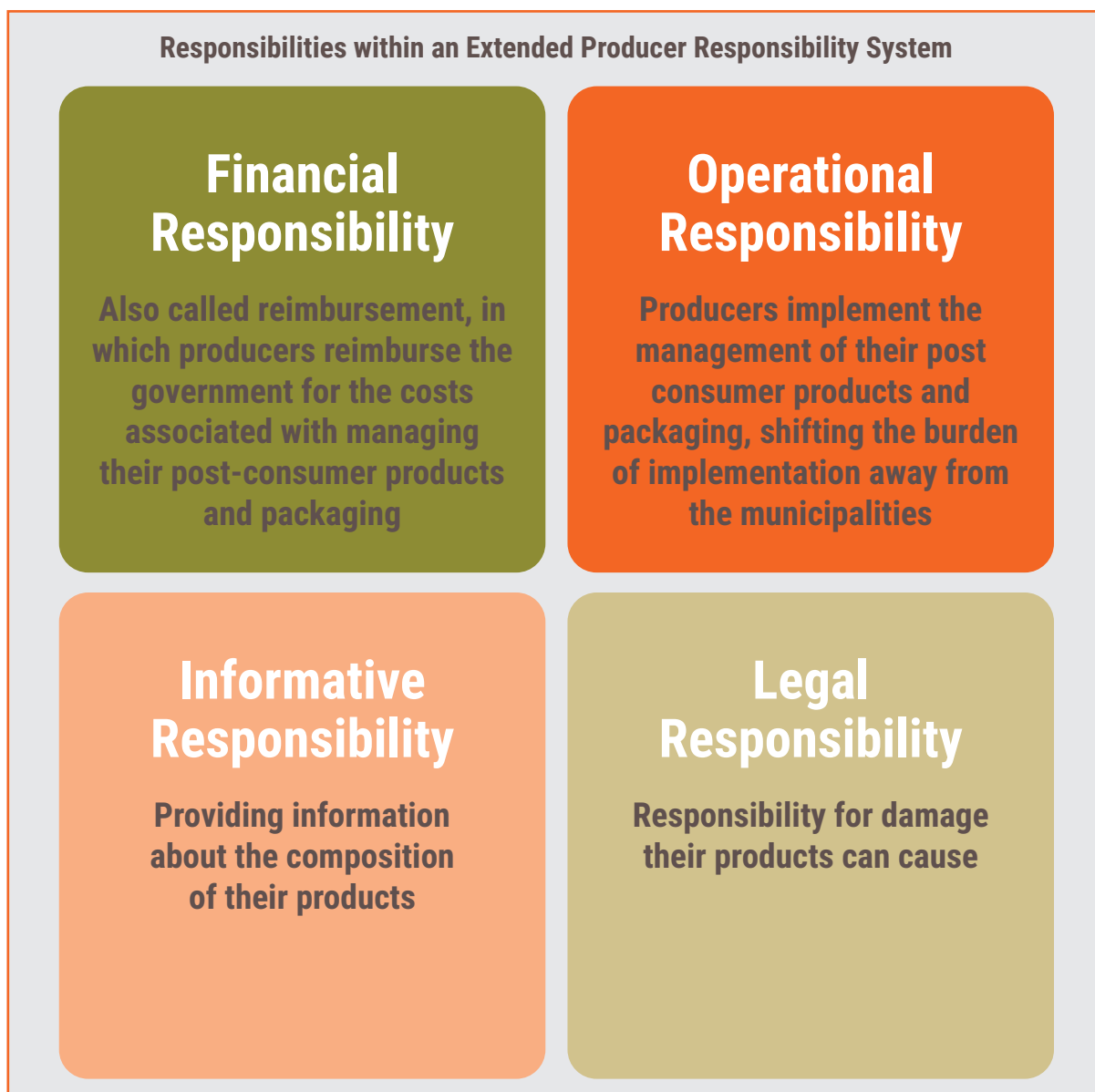
EPR is a policy principle or framework that is translated into practice through a mix of instruments. EPR can be conceptualized under two primary forms: financial, sometimes also called reimbursement, in which producers reimburse the government for the costs of managing their post-consumer products and packaging in the form of taxes, fees,

or deposits; and operational, in which producers finance as well as implement the management of their post-consumer products and packaging, including addressing the physical requirements of take-back systems, thereby shifting the role of implementation away from municipalities.

EPR systems can be a hybrid of financial and operational, as seen in models like Oregon, USA's, new EPR law for packaging, the “Plastic Pollution and Recycling Modernization Act, 2021” (Oregon Legislative Information, 2021), where consumer brand owners are to pay fees to support the improvement and expansion of recycling programs and infrastructure (PSI, 2021). Regardless of who operates the system, EPR financing can originate from a combination of producers, government and consumers. In many cases, the costs to consumers, which can be significant, are somewhat hidden and people sometimes end up paying twice, both as consumers and as taxpayers. Low-income consumers can be disproportionately impacted when costs are placed on them (Miller, 2019).

There are two additional forms of responsibility within EPR, typically embedded in the first two: *informative responsibility*, or providing information about the composition of their products; and *legal responsibility*, which includes performance standards such as requirements for minimum recycled content, responsibility for the damage their products can cause (Watkins and Bell, 2020) and prohibitions on certain waste treatment methods such as incineration.

Implementing these policy instruments collectively (rather than separately) provides the lifecycle perspective and drives structural change in how products are designed and manufactured (Lindhqvist, 2000).



Producers can comply with EPR requirements, individually or collectively, as Producer Responsibility Organizations (PROs). PROs can give companies power to influence EPR policy, as well as establish control over terms and players of the waste system.

Though EPR is typically used to refer to mandatory systems, which are authorized through policy, it often also describes systems in which companies voluntarily invest in either the take-back of their own products and packaging, or in the recovery of the types of materials used for their products or packaging.

2.3 The Expansion of EPR

In recent years, EPR has gained increased worldwide attention in response to growing plastic pollution, driven by packaging and single-use plastics in particular. Population growth and rapid urbanization, alongside a consistent increase in consumption and use of disposable products has, since the 1950s, dramatically increased waste generation around the world, straining the capacity of governments to effectively manage it. The belief that recycling alone could adequately address the growing use of single-use plastics was key to the expansion of a material culture rooted

in disposability, which, with plastic as a key driver, has spread from Western cultures across the world (Heinrich Böll Foundation and Break Free From Plastic, 2019). By 2050, global waste generation is projected to increase by 70% (Kaza et al., 2018). This puts pressure on local governments to build or expand waste management infrastructure to absorb increasing amounts of waste and finance material recovery through EPR schemes (Heinrich Böll Foundation and Break Free From Plastic, 2019). The fragility of natural recycling markets was exposed in 2017 when China, the world's primary importer of plastic scrap at the time, began restricting scrap imports, advancing the argument that much of those imports were not recyclable and were ending up in the environment (Katz, 2019; Brooks et al., 2018). Meanwhile, research revealed that only 9% of all plastics ever produced had actually been recycled (Geyer et al., 2017). The ubiquitous presence of plastic waste, especially as marine litter, has gained major global attention, with several reports and a growing number of environmental and governmental advocates asserting the need for Fast Moving Consumer Goods (FMCG) corporations to assume increased responsibility (World Economic Forum, Ellen MacArthur Foundation and McKinsey and Company, 2016; Break Free From Plastic (BFFP), 2018).

In the 1980s, the Organisation for Economic Co-operation and Development (OECD), was one of the early promoters of EPR with models influenced within the economic framework of the most developed countries (OECD, 2011; Stephenson and Faucher, 2018) where economic concerns have been the main drivers of waste recycling policy (Rogoff and Ross, 2016). By the 1980s, most informal waste workers in OECD member countries had already been displaced by or absorbed into formal

waste management through processes of municipalization and privatization (OECD, 2016). Hence EPR has focused largely on economic and environmental aspects, but not on social aspects (Woggsborg and Schröder, 2018). Since then, the OECD has been one of the major promoters of EPR among both its members and prospective members (Testa, 2017; Duque Daza, Forthcoming). More recent flagship EPR partnerships between the United Nations Development Programme (UNDP) and private sector producers are yet to create robust, sustainable, inclusive, transparent models for countries to adopt and waste picker groups to emulate and implement. (UNDP)

In the OECD's (2016) Updated Guidance for Efficient Waste Management for Extended Producer Responsibility, the authors advocate that a social bottom line be prioritized alongside economic and environmental considerations. The document also advocates for waste picker integration within EPR, which would mean that EPR would generate resources to improve and formalize the role of waste pickers in waste management service provision. To date, however, waste picker integration into mandatory EPR is largely aspirational, and it is usually they who continue to internalize and subsidize the producers' and polluters' costs of material handling, recovery and recycling.

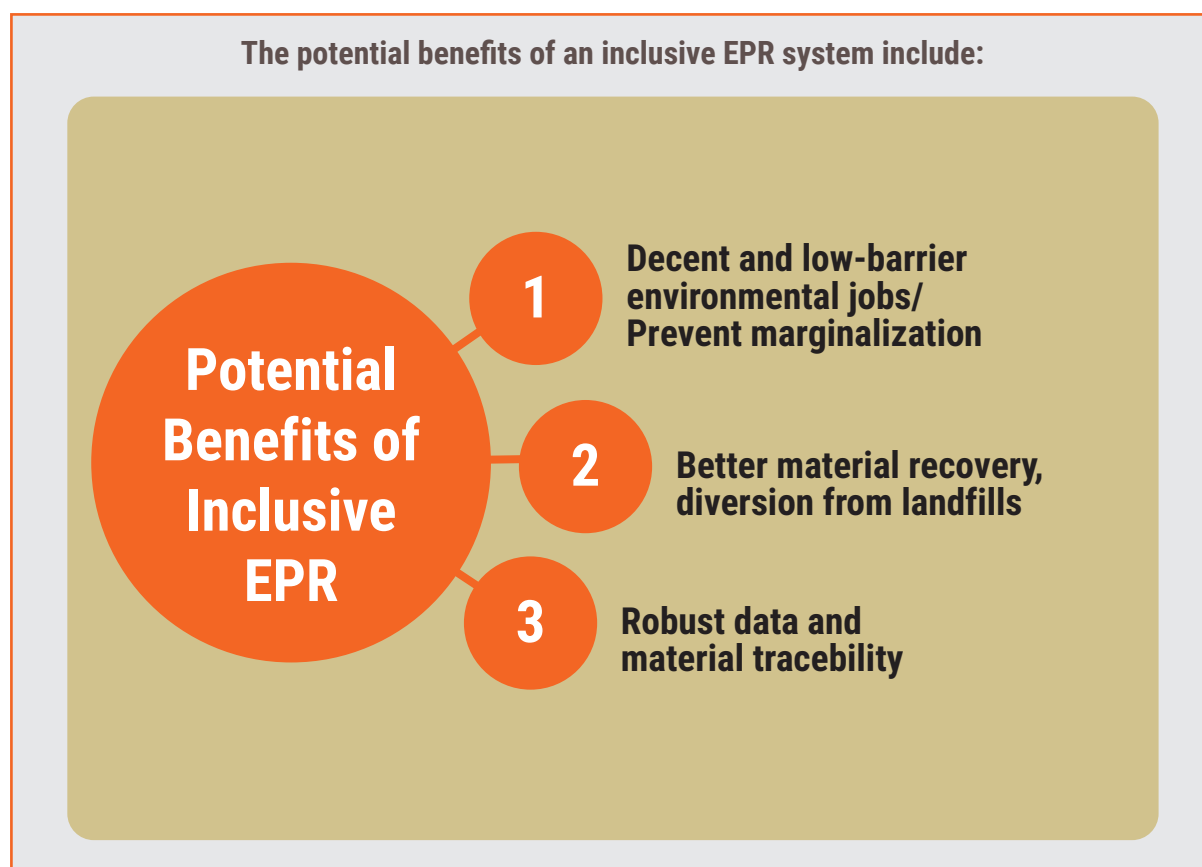
3. Potential benefits of inclusive EPR

Waste picking is a complex economic and social phenomenon shaped by a range of local cultural, political and economic factors. As a result, waste picking varies quite significantly between countries, cities and even within the same city (Dias and Samson, 2016). A number of studies have documented the range of activities



involved in the informal recycling value chain and their contribution to local development and economies, public health and environmental sustainability (Chintan Environment Research and Action Group and Hazards Center, 2003; (Medina, 2007; Scheinberg, 2012; Chikarmane, 2014; Chandran et al., 2014; Dias and Samson, 2016; Godfrey, 2021). Various reports have also detailed their integration into the city's formal solid waste management system (Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH, 2010; OECD, 2016).

The success of an EPR system depends on an effective collection mechanism, and waste pickers can be key to the attainment of material recovery targets (Scheinberg et al., 2016; OECD, 2016). Evidence shows that, in places where the informal workforce has not been accounted for in the design of the EPR system, the attainment of EPR targets is generally poor, given that these systems lack the on-ground knowledge, skills and networks or due to competition with the informal sector (Gupt and Sahay, 2015; Scheinberg et al., 2016; Henzler et al., 2018; Bünemann et al., 2020).



An inclusive EPR system is one that recognizes waste pickers and the other actors in the informal recycling value chain as partners and legitimate actors in its design and implementation; respects traditional knowledge, innovation and skills; creates opportunities to sustain and improve existing systems and actors; and upholds dignity and creates pathways that institutionalize decent work conditions and opportunities for advancement of historically marginalized actors.

Decent and low-barrier environmental jobs and preventing marginalization:

Inclusion of informal workers in EPR upholds the human right to work, just transition, circular economy and the sustainable development goals (SDGs) (Schröder et al., 2019; Chandran, Hasiru Dala 2021).

EPR can generate revenue and other forms of support for low-barrier environmental jobs (Rutkowski, 2020)

and prevent further marginalization of workers who often lack alternative sources of income generation (Hinchliffe et al., 2020). EPR can help validate the role of waste pickers in waste management systems (Rutkowski, 2020; Rutkowski, 2021) and companies can in some places gain credibility and increase the likelihood of having EPR plans approved if they have a developed approach to including the informal sector (Henzler et al., 2018).

Better material recovery, diversion from landfills, and enhanced traceability:

EPR systems that are inclusive can strengthen existing markets for materials and establish new markets to retrieve low value materials, thus allowing for a range of materials to be recovered and significantly diverting materials otherwise destined for the landfill, while also reducing the operational costs of waste management services (Anantakrishnan, 2021;

Rutkowski, 2020). Experiences from countries that have a long history of informal sector involvement in waste management show that the economic impact of the informal sector is much larger than previously believed (Medina, 2007; Earthscan and UN-HABITAT, 2010; Swachh Bharat Mission, Government of India, 2017; Chandran et al., 2018), and this framework can be successfully adopted for inclusive EPR.

Robust Data and material traceability

are an inherent component of EPR systems. As organized waste picker groups tend to be highly motivated to collect and share data to help demonstrate their impact, they make strong partners in an EPR system and strengthen material traceability and data collection (Rutkowski, 2021). Waste pickers who collect, sort, grade, process and sell materials are in a good position to comply with and build on EPR-mandated traceability and data collection requirements, especially if they are supported with resources

and technology transfer to facilitate data collection and analysis. Material collection data can additionally help waste picker organizations estimate the cost savings of their work to demonstrate their impact and strengthen waste management planning. As J. E Rutkowski (2021) points out, in her paper tracing Brazilian Packaging Extended Producer Responsibility, *the ANCAT database records that, from 2017 to 2019, waste picker co-ops diverted 168,101 tons of recyclables from waste, yielding a cumulative cost savings of more than US\$ 4.0 million to municipalities and providing additional services worth another US\$ 20.3 million* (ANCAT, 2020, as cited in Rutkowski, 2021). Increasingly, waste picker groups are also able to translate their materials impact into greenhouse gas emissions savings figures (WIEGO, 2021), potentially encouraging new funding sources for waste management in places where waste pickers are organized (Green Partners Ltd, Resources and Waste Advisory Group, WIEGO and The Global Alliance of Waste Pickers, 2019).



4. Challenges for waste pickers in EPR systems

Despite the opportunities that EPR can bring for waste pickers and other informal, grassroots actors in waste management, the introduction of EPR has historically proven more likely to disadvantage existing informal collectors (OECD, 2016). This is not surprising, since waste pickers tend not to be consulted in the design of EPR systems (Chandran, 2021). Though the impact of EPR on informal workers and their organizations varies from system to system, there are several common challenges that EPR presents in places where they are active.

Producers rarely accept full responsibility for the products and materials they put into the market, externalizing the hidden costs in handling and recycling them, a cost that is ultimately absorbed by the informal sector. Further, producers advocate for the continued production of these materials, arguing that the informal sector depends on them for its survival. This untenable position results in EPR models that assume the preexistence of a low-cost, informal economy to sustain their operations, further burdening an already fragile ecosystem.

4.1 Lack of research and data

Globally, the waste industry is characterized by inconsistent, incomplete, often unreliable and contradictory data, despite the fact that waste data is critical to planning and policy development (Kaza et al., 2018). Waste data gaps when viewed within the EPR framework are further compounded as most countries do not have accurate estimates or national level databases on waste pickers and other informal waste workers. International Solid Waste Association (ISWA, 2014) estimated that globally

about 20 million people, plus their family members, work in the informal recycling sector (Anne Scheinberg and OECD Secretariat, 2015). Without proper estimates, the contributions made by the informal recycling sector – in terms of reduction of waste management costs for the municipality and the waste diverted from landfills – are largely unaccounted for (Scheinberg, 2012) and planning for their integration tends to underestimate the scale of need, proposing solutions that do not match existing workers' capacities.

Data availability on the recycling landscape (including formal and informal systems, enterprise structures, labour relationships and challenges), especially in developing countries, is limited. EPR frameworks recommend establishing recycling infrastructure or collection points, without mapping existing recycling infrastructure in formal, informal or private spaces, resulting in poor investment planning (Chandran, Waste Frames, 2021). EPR systems are often hailed as pathways to formalization of the informal sector (Hinchliffe et al., 2020). However, lack of data and shallow understanding of the impact of EPR on formalization (formalization of enterprises versus employment) has been problematic, as it fails to implement policy instruments effectively and criminalizes the sector. A case in point is the E-Waste Management Rules in India. In 2016, the Government of India announced the new rules, repealing the former E-Waste Management and Handling Rules 2011 (Government of India, 2011). EPR has been a significant feature in both the rules for streamlining management of e-waste vis-à-vis EPR collection targets and/or take-back systems. However the rules have been completely silent on the informal waste sector, which plays an important role in the collection of e-waste. Various reports estimate that 90-95% of e-waste in

India is handled by the informal waste sector (Rajya Sabha Secretariat, 2011; Wankhede, 2020). The over emphasis on authorized recyclers, failing to account for the logistics of collection through the informal and unorganized sector, has in essence resulted in ineffective implementation (Krishnan, 2021).

Although EPR is often conceptualized as a policy that helps formalize the waste system, requiring enterprise registration and operational standards, employment realities within EPR are not required to be analyzed or documented as part of most EPR policies. Employment formalization includes social and labour protection, contracts and other benefits that may improve livelihoods. But informal work is on the rise around the world, including within formal enterprises, through the rise in gig and independent contract labour (Agarwala, 2020). It is unclear whether EPR is generating more decent employment, including accessible pathways from informal to formal employment.

Formal or informal, the question remains whether the jobs being created within EPR systems are to the benefit or detriment of existing informal workers and their organizations. Data is not forthcoming because proper scoping and tracking of labour and opportunity distribution is not mandated within most EPR systems. This is an injustice to waste pickers, who are frequently displaced before even having appeared in research and documentation. Bottle Bills³ in the United States, for example, benefit considerably from waste pickers who collect beverage cans and bottles and redeem the cash deposit placed on them. During the COVID-19 pandemic, states across the US

suspended the enforcement of the Bottle Bill, leaving waste pickers with few to no places to redeem containers for money (Cass Talbott, 2021). The impact of this change has gone largely undocumented, in part because no data ever existed on the numbers, impact or challenges of waste pickers within this system. This lack of data has also hindered advocacy efforts to recognize the role and impact of waste pickers, as well as to re-open redemption centers and ensure that any future closures include safeguards allowing them to maintain their income stream.

4.2 Barriers to Entry and Promotion of a Parallel Recycling Economy

EPR policies and practices can finance new opportunities in the collection and processing of materials by establishing new or improved markets for materials, by investing in new systems or infrastructure, and by establishing systems or rules that give certain actors exclusive access to materials. Unfortunately for waste pickers, all of these factors can usher in challenges and barriers to their work, unless the system is designed with their integration in mind.

When waste pickers and their organizations are not trained in EPR, or included in its design and implementation, they are likely to suffer under a new EPR scheme. Furthermore, when governments and other stakeholders are not sufficiently informed about or sensitive to EPR and its implications for waste pickers and other marginalized actors, they may be unable to support the design of a system that adequately addresses issues of equity and inclusion.

³ Bottle Bills are EPR Deposit Return Systems on beverage containers in some states of the United States. Consumers pay a deposit on each beverage container (can or bottle) purchased, and can then redeem that deposit by returning the container to designated sites.

Robust EPR policy needs to ensure not only that all materials are recyclable, but that they are actually recycled. This is only possible if it is in the economic interest of all players along the value chain to handle and recycle all scrap materials. While producers of all material, including high value recyclables, may need to absorb the enhanced costs that a regulated and compliant recycling sector incurs, producers of low value recyclables will need to put in additional viability gap funding required to ensure their materials get recycled.

Some of the key barriers to entry that waste pickers face in EPR include:

Excessive or costly registration requirements:

EPR can create barriers to participation through excessive or expensive registration or infrastructure requirements (Woggsborg and Schröder, 2018; Duque Daza, Forthcoming). In Ecuador, for example, organized waste pickers have been unable to advance into material aggregation within the country's Deposit Return System for beverage containers because of the complicated registration processes and costly infrastructure required to qualify as certified aggregators allowed to redeem beverage containers through the formal EPR system (Viteri, Forthcoming). Similarly in Chile, for waste pickers to gain access to materials through the country's new expansive EPR system, they must undergo costly registration, without incentives beyond maintaining access to waste, and without organizational or infrastructural support (Mena and Mella, 2021).

Restricted access to waste: To ensure increased efficiency and cut costs for producers, some EPR systems restrict access to recyclable materials in order to secure them for designated service providers. This can also include barring informal waste workers from collection points, as in the case of Tunisia's ECO-LEF system,⁴ which barred informal workers from collection and storage points, forcing them to sell to intermediaries for lower prices than they would have otherwise received (Bünemann et al., 2020). This can also be institutionalized as waste collection systems, like formalized commercial or residential recyclables collection, without integrating any or all of those people who had previously been collecting those materials informally.

Increased competition: One possible benefit of EPR is that it can strengthen existing markets for materials, and create markets for materials that previously lacked one. While this can benefit waste pickers, it can also attract new competition in the sector that is difficult for them to compete with. India's EPR policy for packaging, for example, is creating new markets for multi-layer packaging in the form of co-processing, attracting new actors to the sector who are now competing with waste pickers for other materials as well.⁵ Increasingly, producers, through PROs, are opting to manage their own EPR systems, which can eliminate opportunities for other actors (Cass Talbott, 2021). In places like South Africa and Mexico, with the Petco and Petstar systems (respectively), for example, producers have entered into the role of buying materials from waste pickers and consumers, giving producers

⁴ ECO-LEF is a public system for the recovery and recycling of packaging waste, delivered in partnership with local authorities.

⁵ India's new Guidelines on Extended Producers Responsibility 2022 under the Plastic Waste Management (Amended) Rules 2022, states that producers, importers, and brand owners (PIBOs) should set up their own collection systems and, in places where waste pickers or urban local bodies collect, they must hand over the collection to the PIBOs. There is no mention of any financial reimbursement for the efforts in collection.

little incentive to support waste pickers to advance in value chains into scrap buying, which would put waste pickers and producers in direct competition. Furthermore, some EPR laws create a broad category of service providers, in which they include companies and waste pickers, pushing waste pickers to compete for service contracts in the market, with companies or with cooperatives promoted by these companies, as is being proposed in Colombia and implemented in Chile (Duque Daza, Forthcoming; Mena and Mella, 2021). In cases in which producers collectively operate an EPR system, PROs can enter in competition with existing recyclers, as will likely be seen under Chile's new EPR law (Mena and Mella, 2021). Targeting valuable materials within EPR can exacerbate competition, as in the waste pickers' project under Colombia's impending EPR law (Duque Daza, Forthcoming).

Market distortion: Some EPR systems attach an artificially high price to materials to incentivize their recovery, especially through modalities such as Deposit Return Systems. This can benefit waste pickers, but it can also inhibit their advancement into aggregation and buying if they remain outside of the EPR system, where it may be impossible to compete with EPR's artificially high prices for materials (Cass Talbott, 2021; Chandran, 2021). Producers are also known to lightweight their materials for reducing their weight-based financial requirements in an EPR system, rather than promoting the recyclability of materials (Changing Markets Foundation and Break Free From Plastics, 2021). In Ecuador's bottle return system, producers are lightweighting their materials, yet a false normative standard

has been set for the number of bottles per kilo that does not reflect the reality, making waste pickers collect more and more bottles for increasingly smaller returns (Viteri, Forthcoming).

Incomplete systems and barter-based trading:

As a way of saving costs for producers, many EPR systems are established in ways that rely on voluntary labour or non-financial trade rather than payment for materials. In many cases, consumers are encouraged to act as model citizens by voluntarily taking their old products to designated collection points, as with e-waste EPR systems across the United States (PSI, 2014), for example, or to trade their packaging discards for discounts or products. Spain's voluntary Reciclos system⁶, for example, exchanges recyclable materials for basic goods like transportation tickets (The Circular Lab, nd; Changing Markets Foundation and Break Free From Plastics, 2021). This presents an effective optics opportunity for companies, but undermines the establishment of a more robust recyclables collection system and reduces the number of service provision opportunities available to stakeholders in the system.

4.3 Lack of Transparency

Municipal expenditure on solid waste management in developing economies often encompasses hidden costs, and is opaque, inaccessible, and treacherously difficult to track across the stages of collection, transportation, processing and disposal, and virtually impossible to calculate for specific material streams. The informal recycling economy running parallel to municipal systems is no more transparent, in large part due

⁶ RECICLOS is the return and reward system that, through mobile technology, offers sustainable and social incentives to reward the environmental commitment of citizens who, both in their homes and outside, deposit cans and plastic bottles in bins or yellow containers.

to the unwillingness of players along the value chain to reveal information, and the internalization of costs by workers compromising their own health and safety. EPR models sometimes run as yet another parallel track with dedicated material recovery facilities or collection chains for specific materials or geographies.

EPR has the potential to improve transparency within waste management systems by mandating traceability and data collection through requirements that producers track material generation and recovery. But lack of material, financial and organizational transparency remains a challenge in EPR systems (Rutkowski, 2020; Miller, 2019; Bünemann et al., 2020). Material transparency is critical to assessing the financial responsibility of producers. Financial transparency better enables marginalized stakeholders to strategize different opportunities within the system, and sheds light on who is gaining and losing from EPR. Organizational transparency, including who implements the system and who sits in leadership positions within implementing entities, helps to tell an honest story of who is in charge of EPR systems and whether or not they represent or support marginalized groups.

Many governments around the world are subject to transparency measures like freedom of information laws mandating them to publicly release certain types of information, especially related to financial accountability. PROs, despite operating in many cases as quasi-governmental utilities providing essential services, are not typically subject to the same transparency requirements (Miller, 2019).

In Oregon USA, for example, the government is subject to more stringent transparency regulations than the producer-run private cooperative that

manages the state's Bottle Bill EPR system (Cass Talbott, 2021). While producers now voluntarily release some financial information that is not required of them, such as earnings from unredeemed can and bottle deposits, they are not yet required to report on earnings from the sale of recyclable materials, on who sits on their board of directors, or on other details to give a full financial picture of income versus expenditure. Similarly, British Columbia's packaging EPR PRO is not required to report earnings from recycled content sales (Miller, 2019). And often, as with Brazil's Reverse Logistics system, producers are not required to report on the quantities of material that they are putting into the market, which inhibits pathways toward full financial accountability (Rutkowski, 2021).

Even where systems are transparent about material and financial flows, they may lack educational materials and engagement opportunities explaining how the system works in lay terms. Waste pickers and other actors, including governments, may be invited to the table in the design of EPR systems, but without a deep enough understanding of EPR to contribute towards the design of equitable systems.

4.4 Excessive Producer Power

A key challenge to waste picker empowerment within EPR systems can be the disproportionate power held by producers in many instances. Global producers have sophisticated lobbying networks and experience in influencing policy, tending towards policies and arrangements that give them greater control over systems and that enable them to influence broader waste policy and minimize their financial responsibility (NEWMOA and NERC, 2020; Changing Markets Foundation and Break Free From Plastics, 2021). For example, in California,

Paintcare, the PRO for the state's EPR for paint system, used EPR fees charged to retailers (and passed along to consumers) to sue the state over program regulations (Nemo, 2021; Weiss, 2019). As waste and recycling industries grow more consolidated around the world, EPR has facilitated collusion among producers to promote anti-competitive behavior within the sector (OECD, 2016). Many EPR for packaging proposals, like some of those cropping up across the United States, include exemptions for PROs from antitrust laws designed to prevent monopolies (Miller, 2019).

EPR can enable producers and their collective PROs to establish monopolistic control over the terms and players of waste (Miller, 2019), including the beneficiaries of charity elements that may exist within EPR. This can also put producers in competition with other stakeholders in the sector, like waste pickers, scrap dealers, recyclers, haulers and aggregators, especially when companies move into operationalizing their system of collection, either independent of EPR or as a strategy under Corporate Social Responsibility (Mena and Mella, 2021). One example is ITC's "Wealth out of Waste (WOW) initiative in India (The Hindu Business Line, 2013; Deccan Herald, 2017), now called Wellbeing out of Waste (WOW).⁷ Often these systems also lack negotiation or dispute resolution mechanisms (Seldman, 2020). British Columbia Bottle Depot and Recycling Association board member Mary Lou Van Deventer asserts that the contracts held by Association members with the EPR system's monopoly PRO

include gag orders to prevent members from publicly voicing concerns about the system (ILSR, 2021).

Producers, particularly Fast Moving Consumer Goods Companies (FMCGs), are increasingly well versed in EPR as their operations face a growing number of EPR policy proposals around the world. Producers are known for lobbying to prevent mandatory EPR (Corkery, 2019), especially through PROs or trade associations that can help shield them from public backlash (Changing Markets Foundation and Break Free From Plastics, 2021).

Increasingly, producers are establishing voluntary EPR schemes, often in an effort to undermine, or pre-empt, mandatory policies to influence their design (Changing Markets Foundation and Break Free From Plastics, 2021). Voluntary systems are usually initiated by a single producer, and often target a single, usually valuable, material, and are typically small in scale when compared to the overall material impact of producers. For this reason, voluntary systems are weak in improving environmental outcomes (Arnold, 2019; Bünemann et al., 2020). Most of the more inclusive EPR schemes around the world are currently voluntary.

While waste pickers and waste picker organizations typically collaborate with Industry on voluntary models, the Global Alliance of Waste Pickers unequivocally asserts the need for EPR to be mandatory, recognizing that collective bargaining with industry, by informal albeit organized workers, is insufficient leverage in

⁷ In Bangalore, in 2008, ITC started collecting dry recyclable waste from households after conducting awareness programs on segregation of waste (see <https://www.cfo-india.in/cmsarticle/itc-to-turn-waste-into-wealth-across-india/>). The program has since then evolved in keeping with rules prevalent in each state. In Bangalore, ITC had access to Dry Waste Collection Centers (DWCC) set up by the local ULB. It was only after the regulations mandating that DWCC be run by waste pickers or scrap dealers that ITC partnered with a local NGO who in turn registered the waste pickers to run operations (see https://www.itcportal.com/world-environment-day/pdf/WOW_Brochure_Text%20PDF_%20June%202018.pdf).

the absence of strong, enforceable legislation. Voluntary models serve as useful blueprints allowing for systematic, sustained interaction with the informal sector, experimentation and innovation with market forces, comprehensive study and enhancement of the logistics of collection and handling, value chain and cash flow. They can help allay informal sector concerns over the centralized pooling of resources in opaque, inaccessible government coffers and offer alternative resource distribution models. They can also enable the delineation of the regulatory, oversight and governance roles of the different players, in ways that are easy to enforce and hold accountable. Nonetheless, without a legal mandate, there is no assurance that industry will continue to provide the resources to sustain voluntary models, nor that industry will scale its voluntary interventions to cover all of the materials it places into the market.

Producer-led efforts to subvert mandatory EPR can have lasting effects on the efficacy and labour structure of the waste management industry. For example, the famed anti-litter organization Keep America Beautiful, established by producers in the 1950s to prevent the passage of an EPR Deposit Return System for beverage containers in the US State of Vermont (Rogers, 2005), set a standard for mobilizing volunteers rather than paid labour in litter collection. Twenty years later producers in Oregon attempted to avoid mandatory EPR on beverage containers by funding a volunteer-led anti-litter organization (Tucker, 2018) that remains central to litter control in the state. US states have also come to rely on underpaid prison labour (Corkery, 2019), perhaps because labour for litter collection has long been given freely. The

funding of voluntary and underpaid litter collection efforts gives the appearance of producer responsibility, but inadequately addresses the issue and usually lacks data transparency (Brock et al., 2021), while also averting the creation of paid jobs in litter collection (Cass Talbott, 2021). During the COVID-19 pandemic, volunteers and prisoners were difficult to mobilize, undermining sanitation as litter accumulated around homeless camps, and further incentivizing the open burning of waste. In response, the City of Portland, Oregon contracted a local non-profit to have a waste picker organization, Ground Score Association, provide litter and “tentside” waste collection for homeless camps. Though the state’s new EPR for packaging policy originally proposed to include funding for litter collection, that provision was removed before the law was passed. Producers, through the Consumer Brands Association and the American Forest and Paper Association (AMERIPEN), which now sits on the policy’s advisory council,⁸ opposed the policy because it did not meet their principles for EPR (Quinn and Rosengren, 2021), which include that it should only cover the cost of recycling (Consumer Brands Association).

4.5 Inclusion of false solutions that threaten recycling systems

Given that most plastics – especially single-use – are difficult or costly to recycle and hence have no markets (Heinrich Böll Foundation and Break Free From Plastic, 2019), there is a tension between government or environmentalist approaches to ban single-use plastics or redesign products for reuse or recycling, and industry’s approach to burn these plastics in waste-to-energy incinerators, pyrolysis plants, chemical recycling

⁸ Oregon Recycling System Advisory Council <https://www.oregon.gov/deq/recycling/Pages/ORSAC.aspx>

systems, cement kilns or other plastics-to-fuel technologies (Hamilton et al., 2019; Anantakrishnan, 2021). Waste-to-energy technologies undermine mechanical recycling as well as waste picker livelihoods (IJgosse, 2019).

Under pressure to valorize materials that currently lack markets, waste-to-energy is seen as the way to treat plastics that are not suitable or cost-effective for mechanical recycling. This is reflected in EPR legislation that includes waste-to-energy as part of the recovery targets or accepts it as a treatment option (Duque and Eugenia, Forthcoming). For instance, in California, United States, the implementation of an EPR scheme for carpets resulted in carpet incineration rates increasing to over double their recycling rate (GAIA and Changing Markets, 2017).

Plastic producers' investment in waste-to-energy systems (often using public funds) signals that producers expect to continue producing increasing amounts of non-recyclable plastics, and are looking for ways to hide the evidence of that waste or to appear solutions-oriented. For instance, an analysis of the “advanced recycling” projects being developed by the American Chemistry Council (ACC) for plastics found that most of them were actually waste-to-energy systems (Schlegel, 2020).

This approach is particularly problematic in middle and low income countries, where most waste pickers work. This is because organic waste represents over 50% of municipal solid waste in these countries and, as waste-to-energy requires high calorific value waste to produce energy, they typically depend on recyclables (GAIA, 2018; C40 Cities Climate Leadership Group, C40 Knowledge Hub, 2019). Waste incineration is a very capital intensive

and centralized technology that requires a fixed amount of materials to burn, over long periods of time. Thus, setting targets to recover low or no-value packaging opens the door to waste-to-energy, and can become an incentive to build incinerators, which then need to be fuelled with high calorific value materials like plastics, threatening waste pickers' access to those materials as well as their livelihoods ultimately.

Another false solution that is perpetuated through EPR is the export of recyclables for processing in lower income countries. Countries like Germany, France and the United Kingdom, for example, continue shipping their low-grade plastic abroad (Michaelson, 2021), despite having long-standing packaging EPR systems in place. After China banned certain types of waste imports, much of the global waste trade shifted to South and Southeast Asia, Latin America and Africa, aggravating waste management problems in these countries, where waste pickers and governments are ultimately subsidizing waste management for developed countries. The allowance of waste exports, especially of mixed and low-value material, is a loophole in most EPR legislation, and a consequence of failing to drive the redesign of non-recyclable materials.

5. Challenges in attempting inclusive EPR

Most EPR systems around the world that are attempting some degree of integration of waste pickers are voluntary, and therefore small in scale, and lacking in transparency and equitable distribution of power among key players. Furthermore, EPR with inclusive elements that support the advancement of waste pickers in value chains only exist in places where waste pickers are already organized

and can advocate for their inclusion, indicating that the transformational factor is waste picker organization rather than progressive EPR policy. This underlines the need for EPR to support the identification, training and organizing of informal workers if it is to equitably integrate existing stakeholders.

EPR systems that attempt to include waste pickers, such as Brazil's Reverse Logistics system or Pune, India's SWaCH-ITC voluntary system for multilayer packaging, often rely on existing systems in which organized waste pickers have already been integrated to some degree into formal service provision. In both cases, waste pickers are contracted for doorstep materials collection, which is paid for through municipal contracts and residential user fees rather than by producers (Anantakrishnan, 2021; Rutkowski, 2021). This generates considerable savings for producers, who don't have to cover the costs of collection and other related expenses.

Furthermore, no mandatory EPR attempting inclusion has managed to integrate all of the waste pickers active in any given system. In Brazil, only a very limited number of waste picker cooperatives are integrated into the Reverse Logistics system, which is also not designed to benefit unaffiliated waste pickers. This is in part due to the limited responsibility of producers, who are not required to account for all of the materials placed on the market, but also because of the limited power that waste picker cooperatives have in negotiating their position (Rutkowski, 2021). Similarly, Chile's new EPR for packaging policy articulates a requirement for waste picker integration but, according to Soledad Mella, president of the National Association of Waste Pickers of Chile (ANARCH), the law has integrated just 8,000 of the country's 60,000 waste

pickers and continues to allot many contracts to private companies (Mela, 2021; Mena and Mella, 2021).

When waste picker organizations are given more power and control in a given system, however, they tend to fight for ongoing access, for improvements and for unaffiliated waste pickers. A few examples of this include SWaCH's aims to extend the voluntary producer-subsidized purchase of multi-layer packaging to scrap dealers so that unaffiliated waste pickers can also sell such materials (Anantakrishnan, 2021); Brazilian waste picker cooperatives' purchase of materials from unaffiliated waste pickers at fair rates (Rutkowski, 2021) and campaigns by Argentina's National Waste Picker Federation (FACCyR) to prohibit the locking of public waste bins (Grimaldi, 2019).

Existing experiences highlight the risk of tokenizing inclusion while the rest of the waste management system privatizes or becomes increasingly off-limits to waste pickers. New requirements such as certifications and other bureaucratic measures (Viteri, Forthcoming; Mena and Mella, 2021), lack of harmonization with pre-existing systems (Duque Daza, Forthcoming), and the entry of new players to negotiate with and compete against (Mena and Mella, 2021), all challenge waste picker recognition and integration.

The role of the government in defending workers' rights and counterbalancing the power of companies can make a difference in some countries. In systems where governments have a limited role and waste pickers enter into direct negotiation with companies, power imbalances between corporations and waste picker groups limit the capacity of waste pickers to influence the overall system, and this is reflected in companies not paying for the real costs of the services provided, as seen in the case of Brazil's Reverse Logistics system

(Rutkowski, 2021). Uruguay's mandatory EPR for packaging system is also largely producer-driven, in part because the policy mandates that contracted waste picker organizations be managed by the Ministry of Social Development, rather than allowing the organizations to act autonomously and with direct representation (Matonte-Silva & O'Hare, forthcoming).

Around the world, governments and international institutions are increasingly recognizing the need for policy to support more ethical supply chains and environmental justice. In Oregon, USA, this resulted in an EPR law (Dembrow, et al, 2021) for packaging that requires producers to find responsible end markets for certain materials. This could ultimately incentivize domestic processing of materials and prevent the problematic dumping of materials in lower-income countries, which would

benefit waste pickers in both export and import countries. Other supply chain ethics-related efforts, like the UN Guiding Principles on Business and Human Rights (The UN Working Group on Business and Human Rights), and the EU's move toward supply chain due diligence, are likely to have more expansive impacts on the recycling industry, and may pose a risk to waste pickers as companies find ways to consolidate and remove waste pickers from their supply chain rather than improve their conditions and compensation. Thus, the concept of "just transition" must be considered alongside each disruption proposed within the industry.

In well established waste management systems like those in the US, especially those heavily consolidated and monopolized by one or a few waste management and recycling companies, the struggle for inclusion and equity lies



Ground Score Association worker Christine Alix reviews COVID-19 safety protocols at Ground Score's producer-funded People's Depot in Oregon, USA. Photo by Taylor Cass Talbott

not only in the need for less socially and economically extractive and polluting supply chains internationally, but in an enabling local environment for inclusive, mission-based recyclers to establish themselves and thrive. Realistic and sustained pathways for informal recyclers and reuse operators to organize and advance in materials value chains, and ultimately opt to formalize their work, are needed. Waste policies like EPR must

conceptualize inclusion as an ongoing rather than one-time goal, with the understanding that, as long as poverty exists, waste is and will be a critical resource for workers in the informal economy. Thus, an ethical EPR scheme must accept this reality and establish entry points for such workers to formalize and improve their work as an ongoing and structural aspect of the system.

5.1 Case Studies: Review of EPR Laws

Following is a review of several EPR laws that include language related to waste pickers. The analysis is not an exhaustive revision of each piece of legislation, but rather identifies elements in the elaboration process and the legislative text that favor or act as a barrier to the integration of waste pickers in each context. The parameters include the following:

- Waste pickers' involvement in the design of the policy
- Accessibility for participation in EPR systems
- Exclusivity vs competition for waste pickers
- Policy provisions include support for infrastructure
- Coverage of EPR to cover full costs of waste pickers' services
- Inclusion provisions to integrate independent waste pickers
- Whether or not false solutions are accepted as treatment options

5.1.1 Brazil

In 2010, Brazil adopted its National Solid Waste Policy (Ministry of Environment of Brazil, 2010) that identifies the inclusion of waste pickers into the waste management systems as one of its key pillars. The law also calls for packaging to be managed through “reverse logistics” systems developed among manufacturers, importers, distributors, traders, consumers and local governments, following a “shared” responsibility principle.

In 2015, a coalition of packaging companies signed a packaging sectoral agreement with the national government that sets progressive goals to reduce packaging waste disposal in landfills, through a series of measures oriented to improve recycling systems. These include putting in place drop-off centers for packaging waste, and supporting separate collection, processing and recycling systems prioritizing those managed by waste picker cooperatives. The agreement includes support for waste pickers, such as the implementation of needs assessments, the provision of equipment and infrastructure, capacity building, communications campaigns, and the purchase of materials processed for recycling. It also established a coalition of companies to implement and monitor the agreement in concert with government

bodies, with the Ministry of Environment identified as the body in charge of monitoring the enforcement of the agreement.

The sectoral agreement has channeled concrete and considerable support to waste pickers cooperatives in Brazil. However, waste pickers had limited power to place strong language in the agreement and are now excluded from decision-making circles as a result of Brazil's current political environment. One shortcoming of the agreement is that the producers themselves determine the amount of funding they contribute, which does not cover the full costs of the service. Furthermore, the system benefits some waste picker cooperatives, but does not generate formal improvements for unaffiliated waste pickers. Finally, municipal governments, which oversee waste management, are absent from the agreement (Rutkowski, 2020).

5.1.2 Chile

In Chile, the law, Ley N°20.920, (Ministerio Del Medio Ambiente, 2016), establishes a waste management framework based on EPR for six priority products, including packaging. The law establishes that producers take both financial and operational responsibility over their products and packaging. Producers must submit a waste management plan for their products, either individually or through a PRO, and meet the recycling goals set in the legislation. The plan must be approved by the government, and regular reports must also be submitted to monitor progress. In the case of packaging, recycling refers to mechanical recycling; thus, waste-to-energy and plastics-to-fuel systems do not count towards recycling goals. On March 16, 2021, the Government of Chile published in the Official Gazette the Supreme Decree No. 12/2020 of the Ministry of the Environment. The Decree sets collection and recovery goals and establishes obligations related to containers and packaging, in the context of Law 20.920 on Extended Producers Responsibility (Vergara et al., 2021).

Producers are responsible for contracting directly with “authorized” waste management entities, either private companies, municipalities, or waste picker cooperatives. So the legislation recognizes waste pickers but obliges them to become certified as authorized waste management entities. This means that a sector that has been providing recycling services for over half a century at no cost to municipalities or companies now needs to go through an expensive and exclusionary certification process in order to re-enter the recycling system and be contracted by the producers. The requirements are many, including having sorting and processing infrastructure, strict reporting and registry, health and safety measures, and costly registration fees. It also puts waste pickers into direct competition with companies and municipalities for waste management contracts. While access to the bidding process is free for waste pickers, the disadvantage is extreme as other actors tend to have more access to capital. Waste pickers are already seeing new waste management companies emerge to access these contracts (GAIA América Latina y el Caribe, 2021). The law also creates a recycling fund to support municipalities in setting up recycling systems, but waste pickers are not eligible for these funds.

The “Movimiento Nacional de Recicladores de Chile,” or National Movement of Recyclers of Chile (MNRCH), has begun an institutionalization process to be able to continue working and establish contracts with producers. They created ANARCH, National Association of Waste Pickers of Chile; Asociación Nacional

de Recicladores de Chile and have started to certify waste pickers and create cooperatives in all regions of the country to be able to set contracts with producers to keep managing packaging waste, now through the EPR law (Bünemann et al., 2020; Mena and Mella, 2021).

5.1.3 India

India first introduced EPR in 2011 under the Plastic Waste (Management and Handling) Rules, 2011 (Ministry of Environment and Forests, Government of India, 2011) and E- Waste Management and Handling Rules, 2011 (Ministry of Environment and Forests, Government of India, 2011). This was the result of recommendations made by the Expert Committee to examine comments, suggestions and economic instruments in the Draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009.

Two important recommendations made by the committee were to introduce an EPR system to recycle plastic waste and to include informal sector actors such as waste pickers in plastic waste management. The rules placed responsibility on municipalities to pursue EPR with manufacturers and brand owners and engage with waste pickers. However, the rules remained on paper and the regulatory authority noted this lack of implementation for several years. In 2016, the Government of India, through the Ministry of Environment, Forest and Climate Change released several amended rules such as the Solid Waste Management Rules 2016, the Plastic Waste Management Rules 2016 and the E-Waste Management Rules 2016 and for the first time acknowledged the role of waste pickers and other informal collectors; the Government mandated their integration into the city's solid and plastic waste management systems, and recommended that the urban local bodies issue occupational identity cards to waste pickers. EPR initiatives in plastic waste management are currently voluntary, and run by individual corporations, supported under Corporate Social Responsibility. The impact has been minuscule, with many pilots failing to scale up due to failed financial negotiations.

The failure to operationalize the system led to several petitions being filed with the National Green Tribunal (NGT), and the court stepped in and directed the Ministry to release the EPR regulation. The proposed draft was released for public consultation in October 2021, and stated that the draft was an outcome of extensive stakeholder consultation, despite omitting waste pickers and other informal workers in the consultation. The official regulations are still pending. But with the proposed draft, under the Plastic Waste Rules, the approach fails to recognize the informal recycling landscape and, in excluding the informal sector, criminalizes the entire value chain. Corporations are given a free hand in designing their own collection systems, and expect all other collections (municipal, voluntary and informal) to hand over waste to corporations without any financial implications (Chandran, Hasiru Dala, 2021).

5.1.4 South Africa

South Africa has had various acts and regulations on waste management, with a history of mandatory and voluntary EPR initiatives. Nahman (2010) traced the evolution of EPR policies and initiatives to the imposition of a levy on plastic bags

in 2003 to encourage re-use, collection and recycling of single-use plastics in South Africa. This regulation, though helping to reduce plastic bag production and waste, failed to boost the recycling industry and create needed employment opportunities. The bulk of the revenue generated was held up in government coffers instead of being directly invested into the recycling sector. In contrast, other industry-led and voluntary EPR schemes such as Collect-a-Can, Glass Recovery Company (GRC) and PETCO, led to an increase in collection/recycling of steel, glass and PET materials (Nahman, 2010; Godfrey, 2021) and at the same time ensured stable jobs for collectors (Nahman, 2010).

The National Environmental Management: Waste Act 59 of 2008 (Waste Act) (Republic of South Africa, 2008) and the National Waste Management Strategy of 2020 (Department of Environment, Forestry and Fisheries, Republic of South Africa, 2020) are landmark waste management regulations in South Africa. Section 28 of the Waste Act required the Paper and Packaging, Electrical and Electronic and Lighting industries to prepare for approval of waste management plans by the government. According to a synthesis report by WWF South Africa (Arp et al., 2021), the waste management plans of the obliged companies were not approved because they did not meet the set requirements. Subsequently, section 18 of the Waste Act, which sets out the EPR requirements for producers was applied to companies in the paper and packaging industry. On November, 15, 2020 the EPR Regulations for the Paper and Packaging industry were gazetted. The industry players raised concerns with these regulations and called for further consultations on the EPR regulations, which led to the establishment of a Task Team (December 2020 - February, 2021) drawn from industry and government agencies to work on the required amendments. The amendments regarding the EPR regulations were published by the Minister in the Department of Environment, Forestry and Fisheries on 5th May, 2021.

Informal recyclers are known to have subsidized the recycling industry in South Africa for years through their “free labour” (Godfrey, 2021). After years of struggle, the gazetted EPR regulations of May 2021 make provisions that border on inclusion. Specifically, regulation 5A places legal obligations on EPR schemes to *“integrate informal waste collectors, reclaimers and pickers into the post-consumer collection value chain, ... compensate waste collectors, reclaimers or pickers, who register with the National Registration Database ... , implement transformation within those entities with whom they contract with a special focus on women, youth and persons living with disabilities; and prioritize the promotion of small businesses and entrepreneurs with a special focus on women, youth and persons living with disabilities.”*

The earlier version of the EPR regulation published in March, 2021 had mentioned and defined decent work as a means of work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men. Unfortunately, this definition was deleted in the May, 5, 2021 edition of the EPR regulation. This demonstrates the attempt to water down the labour dimension of the EPR regulations.

6. Enabling factors for Inclusive EPR

A model EPR system that integrates waste pickers is still largely an aspirational concept. However, waste pickers' experiences of exclusionary EPR systems, as well as of the few systems attempting integration, highlight several enabling factors for socially and economically inclusive EPR. The Global Alliance of Waste Pickers has spent the past three years engaging hundreds of waste pickers across the globe to identify common demands for EPR. Waste pickers assert that EPR should generate recognition, pathways to more formal and decent work, access to labour and social protection, and opportunities for advancement within material management systems and decision-making processes. In line with these objectives, EPR should support international commitments to achieve the sustainable development goals, as well as a "just transition" towards a more circular economy.

This section draws on the official position of the Global Alliance of Waste Pickers on EPR (Global Alliance of Waste Pickers and WIEGO, 2021). The recommendations are divided into two categories: Basic Principles and the Position on EPR (See Annexure 1).

In this section, we present the critical enabling actions: Legislative Action, Facilitative Action, and Governance Action necessary for an inclusive and just EPR.

6.1 Legislative Actions

Policy mainstreaming of the informal economy is a crucial action that needs to be undertaken for inclusive EPR. As noted by the International Labour Organization (ILO) "From a decent work perspective,

transition to formality is cast within each of the four pillars: rights at work, employment promotion, social protection and social dialogue, but its intrinsic value is essentially in the integration and the interactions among the policy actions covered under each of them" (ILO, 2008). These actions include, but are not limited to, the following:

- **Research and identification of waste pickers and other actors in the informal recycling chain:** As a first step, it is critical to recognize all actors in the informal recycling economy, in regulatory and legislative frameworks around waste management and resource recovery as applicable in individual countries.
- **Mandatory EPR systems with clear inclusion mandates:** EPR systems must be government led and mandatory and must be broad in scope to cover a range of packaging and products. EPR systems must have clear targets and outcomes. EPR systems need to account for waste pickers and other informal waste workers in EPR systems so that EPR functions well without exacerbating exclusion and poverty. Inclusion mandates could vary depending on the country, but need to authenticate informal collection networks. Reporting and monitoring mechanisms need to be regulated.
- **Design based on participatory consultation:** EPR system design must be multi-stakeholder, and needs ongoing, direct communication with informal waste workers in the recycling value chain – waste pickers, waste pickers' organizations, scrap dealers, aggregators and recyclers. The waste resource economy is large, complex and interwoven, and co-production of establishing systems, standards, priorities, processes,



Argentina's National Waste Picker Federation (FACCyR) rallies in support of their proposal for a packaging law ("Ley de Envases") with social inclusion, 2021. Photo credit: FACCyR Press

fees and pricing targets, grievance mechanisms, review processes, etc. are essential. Collaborative engagement processes must be institutionalized to ensure that changing dynamics and political shifts do not undermine or erode practices or make way for token representation, with no power for collective bargaining. In some circumstances, as with Argentina's National Waste Picker Federation's (FACCyR) proposal for a socially inclusive packaging law, waste picker organizations themselves can develop EPR proposals and model legislation. These proposals should be taken seriously and studied for their potential to influence EPR to be more inclusive.

- **Legal recognition of the rights of waste pickers and other informal workers:** The regulatory framework must also allow for a just transition to the formal economy, without discrimination, irrespective of the worker or entrepreneur status – such as the provision of occupational identity cards, ease of registration

including reduced fee involved in registration, allowing participation in tenders and bids and upholding existing service contracts and ensuring that EPR systems do not exclude informal workers.

- **Strengthening of domestic mechanical recycling markets:** Strong markets for materials is key to both promoting a circular economy as well as ensuring an inclusive recycling, reuse and repair sector that generates and sustains local livelihoods. This can be enhanced by ensuring EPR targets for low and no-value materials and refrains from disrupting existing markets for valuable materials; mandating domestic processing of materials to strengthen investment in local recycling infrastructure; and disincentivizing or prohibiting technologies like waste-to-energy that undermine mechanical recycling.

6.2 Facilitative Actions

There are no quick fixes or one-size-fits-all solutions for facilitative action, but in order to enable inclusive EPR, facilitating

actions include: access to mainstream economic resources such as finance, infrastructure, investment and markets; capacity building, training and skill development; and technology (ILO, 2008; Chandran et al., 2019).

Formalization demands a continual and incremental approach, and interventions need to be tailored and targeted to meet the specific situation, needs and challenges of different groups (Hinchliffe et al., 2020; Chen, 2012). EPR must be designed for these realities. In places where waste pickers and other informal workers are not organized, facilitative action could also include access to organizing and collective mobilization of workers' organizations that are independent of government and corporations in order to better ensure worker representation. Interventions must also include a system of ensuring unaffiliated waste pickers also benefit from an EPR system, through direct and fair purchase of recyclables. For example, groups like Brazil's National Waste Picker Movement have been able to help some unaffiliated waste pickers benefit from EPR by purchasing materials from them at a fair price.

Formalized systems carry the risk of workforce shrinkage, further marginalization of unaffiliated workers, and a significant loss of autonomy, control, access and agency of waste pickers. Furthermore, formal systems do not necessarily connote compliance with basic labour and social security legislation. They require robust oversight, grievance redress mechanisms and government regulation. Such regulation must also recognize and uphold the integration of registered waste pickers as a priority.

Facilitative Actions to create an enabling environment include:

- Access to capacity development and training
- Access to social security
- Access to infrastructure, land and equipment
- Access to finance
- Access to legal support and administration
- Access to technology

6.3 Governance Actions

The role of the government in ensuring and enforcing mandates for adequate waste management, employment targets and standards, and social and labour protections cannot be overemphasized. Governance actions must not just enable inclusion but also create mechanisms to enforce inclusive EPR, protect waste pickers' access to waste, prevent monopoly power and greenwashing, promote partnerships, support entrepreneurship and empower the informal waste economy in actualising EPR, while ensuring strict mechanisms for data traceability and accountability of the industry. This includes:

- Protecting access to waste for the informal waste workers
- Supporting fair pricing of material that is negotiated between all stakeholders (with viability gap funding to ensure that materials are given value where they have none – i.e. price floor mechanisms)
- Provide grievance redressal mechanisms

- Prevent corrupt/exclusionary practices
- Prevent monopoly power by producers
- Enforce the Polluter Pays Principle
- Promote equal partnerships
- Manage data traceability from producer organizations, by ensuring data is in the public domain

7. Conclusion

Waste pickers have collected scrap materials for decades, often at the cost of their own health and living and work conditions, and despite being unrecognized, undervalued and dismissed by government and industry. Waste picking is often a last resort livelihood for people without viable alternatives (ILO, 2015), who face a threat to their earnings if some materials are phased out, and a threat to their livelihoods if systems and processes are changed. Thus, waste pickers should be considered the foremost priority sector for a “just transition” towards a more circular economy. Waste pickers’ historical contribution to the mitigation of environmental damage from waste materials, especially plastics, long before it was articulated as a global concern, and their hands-on knowledge of material flow, value chains and segregation methodology and processes, also equips them to be invaluable, knowledgeable and critical actors in the space. They have co-created, and comfortably occupied alternative spaces and occupations within waste collection, handling, processing, transport and management including, but not limited to, enterprises for repair, reuse activities and thrift stores, composting,

biomethanation, fair trade stores for scrap, demonstrating their willingness and ability to transition from the traditional framework of collecting waste from bins, curbsides and landfills.

Extended Producer Responsibility policies bring disruption to waste systems, making it imperative that workers’ collectives organize, engage, dialogue, articulate and bargain for their demands for space within these systems. Equally, EPR presents a unique space and opportunity for a “just transition” for waste pickers and other informal waste workers. A “just transition” would involve waste pickers and their organizations, both in the design of cleaner, greener jobs, and the transformation of both systems and their own work, through structured and systematic training. It will entail investments in sustainable technology, infrastructure and the ongoing process of transition so that workers do not continue to bear the cost of this change. Where earnings or livelihoods are directly compromised, remediation and social protection measures will need to be instituted.

There is no single or linear path towards a more inclusive and equitable EPR, but any pathway to a “just transition” for informal waste pickers involves recognizing the informal waste economy and ensuring its representation through participatory and informative planning processes. EPR is just one of several tools being employed within a broader approach to achieve a circular economy, but its rapid adoption in the global north and south alike merits deeper analysis to understand what constitutes a just transition, and a just EPR, in a range of contexts.

One of the primary drivers of EPR policies and practices around the world is environmentalism and environmental justice – the need to reduce the burden of improperly managed waste on low income communities and the environment. But economic justice, or the financial prosperity of those from marginalized communities, remains largely absent from EPR and, more broadly, Circular Economy agendas. The COVID-19 pandemic has highlighted the unacceptable precarity of informal workers around the world (WIEGO, 2021), an urgent issue that

is increasingly exacerbated by climate change and environmental pollution. But if these troubling environmental issues are addressed in ways that displace informal workers and widen wealth gaps, today's push towards a more Circular Economy will continue to be fueled by a linear model of human disposal. The urgency and interrelated nature of this problem demands that our public policies aspire to cohesively address both environmental and economic issues, without which there will be no “just transition” within EPR.

Glossary of Terms

Advanced Disposal Fees: A fee paid upon the purchase of a product that goes towards the eventual management of that product at its end of life.

Circular Economy: An economic system aimed at eliminating waste and the continual use of resources.

Containerization: The locking of public and private waste containers so that waste pickers cannot access them.

Corporate Social Responsibility (CSR): A business model that helps a company be socially accountable by supporting charitable causes and ethically-oriented practices. CSR is usually voluntary and self-regulated, but in some places it is mandated and regulated by governments. Extended Producer Responsibility is sometimes framed as a form of CSR.

Deposit Return System (DRS): An EPR system in which consumers pay a monetary deposit on a product that they consume, which can be redeemed upon the return of the product's empty packaging.

Eco-modulation: A fee placed on producers based on the environmental performance of their products or packaging, that incentivizes them to lessen the environmental impact of their products or packaging. In Latin America this is more commonly called "Eco-design" ("Eco-diseño").

End of Life (EOL): The phase at which a product or material is no longer useful.

Extended Producer Responsibility (EPR): A mandatory system or policy to hold producers financially and sometimes also operationally responsible for the entire lifecycle of their products and packaging in order to minimize the

environmental impacts and to cover the cost associated with the recycling and disposal of the products and/or packaging. Though EPR is typically used to refer to mandatory systems, it is sometimes also used to describe voluntary systems.

Formalization: A process of standardization of practices that, in the waste sector, can include things like: the formation of organizations and businesses, taxation and registration, legal recognition, the issuing of contracts with social and labour protections, and the provision of infrastructure.

Greenwashing: Disinformation given by a company or organization to make it seem like their practices are environmental.

Inclusive waste management: Waste management systems that generate recognition and opportunities for informal waste workers to access labour and social protections, and advancement within material management systems and decision-making processes.

Informal Recycling Sector: Includes waste pickers, scrap dealers, itinerant buyers and other recycling sector workers lacking formal contracts and/or basic social and labour protections.

Integration of waste pickers: A process that recognizes and improves the role of waste pickers in waste recovery systems by building on their strengths and including them as key stakeholders in design, implementation, evaluation and revision of a materials management system.

Litter: Improperly managed waste left in open or public spaces.

Market share: The portion of a market controlled by a particular company or entity.

Membership-Based Organization

(MBO): An organization based on membership and that is accountable to its members.

Multi-Layer Packaging (MLP):

A commonly used and hard-to-recycle packaging that consists of one or more different types of material (usually including plastic and metal).

Producer: Usually defined as the direct manufacturer that sells or distributes a product, the owner of a brand name or product sold, and/or an entity that imports products.

Producer Responsibility Organization

(PRO): Usually a not-for-profit organization or an industry association designated by a producer or multiple producers to act on their behalf to administer an Extended Producer Responsibility program. Also called a Stewardship Organization. In some Spanish-speaking countries, PRO-based systems are called “Integrated Management Systems,” or SIG (“Sistemas Integrados de Gestión”).

Polluter Pays Principle:

An environmental principle designed to make those who produce pollution responsible for paying for the damage done to the natural environment.

Pyrolysis:

Often called Chemical Recycling, Pyrolysis is a form of gasification that breaks materials down into its basic chemical components, plus residue. This is a capital and energy-intensive technology that is increasingly being used to recycle plastics and wood that are difficult to recycle mechanically.

Shared Responsibility:

Programs identified as “shared responsibility” are in part industry funded and/or operated. These programs are often the result of an agreement or partnership or, in some cases, industry stewards may be designated by law to provide funding for a specific program.

Single-Use Plastics (SUP):

Plastic packaging or products that are only used once or a few times before disposal.

Stakeholder:

A person or organization whose interests will be or are affected by an existing or proposed plan, and includes a consumer, recycler, retailer, service provider, brand-owner, producer, government, public interest groups, or any other person whose interests are or will be affected.

Stewardship Plan:

A plan describing how producers will meet their legal obligations under an EPR system. Stewardship plans may include information on how end-of-life products or packaging will be collected and recycled, how program performance will be measured, targets for collection, reuse, recycling and/or public awareness, timelines, program funding and reporting protocols. Producers are responsible for preparing their own individual stewardship plans or can join a collective stewardship program under a “producer responsibility organization”.

Waste to Energy:

Incineration and other waste management processes that produce energy.

Annexure 1: The Global Alliance of Waste Pickers' Position on EPR

Declaration

We, the waste pickers from across the world, assert that Extended Producers Responsibility initiatives, policies and regulations (EPR) should acknowledge our historical and ongoing contribution to waste management and recycling. EPR should recognize that waste recovery generates a large number of livelihoods, and contributes to the incomes of millions of individuals. Our survival and that of our families, is therefore inextricably linked with waste. Despite being responsible for keeping our cities clean, and indispensable for efficient and high recycling rates since the dawn of the industrial revolution, we remain invisible. We pick and collect materials discarded by society, and add value to them by segregating, sorting, aggregating and selling them, thereby promoting both resource recovery and conservation and transforming recyclables for use in manufacturing while generating livelihoods. It is due to us that our cities, coasts and environment are clean. Waste picker organizations demand that governments across the world recognize these significant contributions and stop the systemic repression of our work and lives, ultimately jeopardizing recycling rates and the mitigation of climate change and marine plastic pollution.

We represent over twenty million waste pickers, 8 million of whom are organized under the aegis of the Global Alliance of Waste Pickers (Global Rec). In the past two decades, our strength has grown exponentially. This declaration and the demands articulated here are testimony to the phenomenal growth in our strength and numbers over the past two decades.

While waste picker leaders, organizers, technical experts, policy advisors, and academicians from all over the world were involved in its preparation, waste pickers and waste picker organizations from the five continents represented by the Global Alliance of Waste Pickers (Asia, Africa, Latin America, Europe and North America) are signatories to this declaration.

We call upon manufacturers and producers of goods including plastic, governments at the local, regional and national level, intergovernmental organizations and multilateral agencies, and civil society, to unequivocally recognize that no EPR system can be just, effective or socially inclusive without the participation of waste pickers and their organizations. EPR that excludes waste pickers is an unjust and unfair appropriation of waste pickers' knowledge and innovation – an abuse of our rights that will push us to the fringes and dispossess us of our material and intellectual wealth and property, and our basic sustenance. Further, it will disrupt vibrant recyclable material supply chains and create disorder and discontent across the recycling industry. Evidence shows that EPR works better when waste pickers, as valued and recognized actors, are involved as partners in its design and implementation. Further, material recovery processes instituted by waste picker organizations are socially, economically and environmentally sustainable. Our participation in EPR as legitimate actors, partners and protagonists, under conditions of dignity and recognition, is therefore crucial.

We argue that waste picker participation and partnership will imply fair remuneration for work, as well as allied costs. We seek transparency, public recognition of our work and a tripartite forum, and direct engagement between producers, waste pickers (and other

actors in the informal recycling sector), and governments. We also demand that producers phase out non-recyclables and invest in recyclable and reusable material in their production and packaging process. These fundamental principles lay the foundation for just, sound, inclusive and environmentally robust EPR, enabling a “just transition” for waste pickers, and the millions of workers who sustain the world’s industries.

Basic Principles

A. Research and identification of stakeholders

A thorough and systematic research and mapping process, including an enumeration of informal waste pickers, should be conducted prior to the establishment of an EPR system to ensure that all existing actors in the waste handling system are identified and included through the planning and implementation of the EPR system. Periodic studies should be conducted to assess equity and opportunity distribution and inform changes to the system.

B. Co-production and direct engagement

Involvement and direct participation of waste pickers in the formulation of the EPR public policy. It is imperative that EPR systems should be developed in collaboration with the existing and potentially impacted partners and stakeholders: waste picker organizations, scrap dealers, aggregators, recyclers and other relevant actors in the informal supply chain, along with producers and government authorities. The design of EPR systems should be an open and public process. Waste pickers and their organizations should engage as equal partners in negotiations with government and producers to determine fees and work out implementation processes.

C. Improved packaging and management

Through Eco-modulation and other incentives, EPR should incentivize, fund and establish goals for:

- Complete and segregated waste collection for all residents, including those in informal settlements.
- Minimization of packaging (especially non-recyclable and bio-based plastics that contaminate recyclable feedstock).
- Design and services for reuse and repair.
- Mechanical recycling targets and uniform and minimum recycled content mandates.
- The phase-out of materials containing or emitting hazardous substances which may harm the health of the waste pickers or recyclers; and the testing of new technologies and materials to ensure their safety.
- Domestic processing of materials.
- Priority for the management of non-recyclable or hard-to-recycle materials before recyclable materials with existing markets.
- Alternatives to climate-intensive technologies like incineration and pyrolysis/chemical recycling.
- Clear and truthful labeling of materials so that recyclers understand what they are and how to process them.
- New opportunities for waste pickers and other marginalized waste sector stakeholders through these shifts in materials management.

Position

1. Mandatory and government-led

Government bodies should regulate, implement, monitor, and enforce EPR obligations. Governments should collect a tax on producers to pay them for the costs

of implementing municipal recycling and waste management programs with social inclusion. Government bodies should have clearly defined roles in any framework so that there is no confusion about responsibilities. EPR should ultimately be mandatory such that it covers the full costs of waste management, with clear, gradual and measurable targets and consistent enforcement. Even where voluntary, EPR should engage the government. Waste picker integration provisions should not be relegated to the charity or grant-making wing of government or producer operations but, rather, should be structurally funded as part of the system.

2. Mandate integration

- EPR should recognize the essential role of informal waste pickers, and should maintain and expand existing infrastructure and integrate existing actors from informal waste value chains.
- EPR should maintain or establish safe and legal entry points for all waste pickers to collect and market materials, while also supporting low-barrier pathways to organization and more formal and decent labour conditions.
- EPR should include enforceable mandates and targets for the integration of informal waste pickers and their organizations in EPR systems and on all decision-making bodies.
- EPR should prioritize the contracting of waste picker organizations, especially Membership-based Organizations with democratic processes that maximize employment and financial distribution of profits within their ranks. Similar to eco-modulation, a scale could be established to promote more equitable and inclusive contracting within the system.
- There should be ease of registration for waste picker organizations, aggregators, reprocessors and others in the informal or grassroots recycling chain to register as formal service providers.

3. Full payment and risk protection

It is producers, not vulnerable actors within the waste handling chain, who should be responsible for the economic risk of weak or failed end markets for materials. To achieve this:

- EPR should establish long-term projects and systems that fund all materials in the system at the full costs of systems operation: including collection, transportation, sorting, processing, infrastructure, innovation, and end of life management.
- The remuneration of implementing organizations should include payment for all services provided, including environmental, where applicable, as well as the costs for any training, organization, infrastructure needs (including access to clean water/sanitation), innovation, administration, legal advice, public sensitization, compliance with labour and social protection laws, and disaster response resources for service providers.
- All workers in the system should have access to social and labour protections. Protections should ideally be rights-based and universal in scope, governed and delivered through the state, and the financing should include a contribution from EPR.
- EPR for packaging, clothing/footwear, bulky waste and any other waste that ends up as litter should fund waste picker organizations for the full cost of litter collection and management

in ways that do not rely on voluntary or underpaid labor. Litter collection should be designated as an essential service, and should be carried out in any place that litter accumulates.

- EPR should include price floor mechanisms (minimum fair price) and increases based on the inflation index to shield waste pickers from the volatility of material pricing. These price floors should be accessible to anyone selling materials, not just contracted parties.

4. Transparency, Oversight and Adaptation

- EPR should fund an ongoing, publicly-appointed oversight body (with stipends) with representation from marginalized actors including workers in the informal waste economy. The oversight commission should not only be charged with reviewing policies, grievances and audits and providing feedback, but should also have decision-making authority.
- Annual independent audits should be conducted and include a full financial and socio-economic review of any management body within an EPR system, including the itemized income versus expenditure, and a demographically disaggregated accounting of the employment realities (wages, benefits, contract status) of all workers in the materials' domestic supply chains. Management bodies should also report in full on disaggregated material generation, collection, and sale and recycling rates. Management bodies should also be required to report the names and demographics of who sits on leadership teams and oversight bodies. All data should be made publicly available.

- Annual public review of the system should be required.
- There should be clear and accessible grievance and dispute resolution mechanisms.
- There should be regular public audits of waste pickers and other actors in the informal waste supply chain integration into EPR.

5. Clear communication and training on EPR systems

EPR should include financing for training and inclusive engagement so that all impacted stakeholders can help plan, implement and innovate within a system. The EPR model shall be described in detail but in plain language in visually-oriented, publicly-available documents. All actors should receive training on EPR prior to and during the design and implementation of a system, and upon any major shift in material composition in the market.

6. Principles of partnership and due credit

Principles of partnership and due credit must be developed collectively and adhered to between key stakeholders, including waste picker organizations, scrap dealers and other traders, producers, government and other actors. Waste picker organizations should be made aware of and be given the chance to influence or develop and approve or disapprove of official communications and publicity related to an EPR system that involves them. EPR systems that were developed in collaboration with waste picker organizations should include the organization's logo in communications about the system, and should acknowledge the role of waste pickers in having designed the system.

References

- Agarwala, R. (2020). *The Informal Economy Revisited: Examining the Past, Envisioning the Future Chapter Informal workers and the state in India* (F. Carré & M. A. Chen, Eds.). Routledge Explorations in Development Studies.
- America's Plastic Makers and American Chemistry Council. (2021). *5 Actions for a Sustainable Change: A plan for Congress to accelerate a circular economy for Plastics*. Reuse Plastic. Available at <https://www.plasticmakers.org/files/d6b3a34b9a88b1a6ee4da0a73b24562d740f80e4.pdf>
- Anantakrishnan, L. (2021, June). *Case study: Exploring Opportunities for Waste Pickers in EPR: SWaCH Cooperative's System for Multi-Layered Packaging*. The Global Alliance of Waste Pickers and WIEGO. Available at <https://epr.globalrec.org/case-study/swach-pune-india/>
- Anne Scheinberg, A., and OECD Secretariat. (2015, May 28). *Working Party on Resource Productivity and Waste: Extended Producer Responsibility and The Informal Sector*. OECD Conference Centre, Paris, France, 30 June - 2 July 2015. Available at [https://one.oecd.org/document/ENV/EPOC/WPRPW\(2015\)5/en/pdf](https://one.oecd.org/document/ENV/EPOC/WPRPW(2015)5/en/pdf)
- Arnold, J. (2019, October). *Extended Producer Responsibility in Canada* [Clean Economy Working Paper Series WP 19-06]. Economics and Environmental Policy Research Network (EEPRN).
- Arp, R., L. de Kock, and P. Manyara. (2021). *Extended Producer Responsibility for Plastic Packaging in South Africa*. WWF. Available at https://wwfafrica.awsassets.panda.org/downloads/epr_synthesis_report.pdf?34924/Extended-Producer-Responsibility-for-plastic-packaging-in-South-Africa
- Associação Nacional de Catadores de Materiais Recicláveis (ANCAT). (n.d.). *Pragma Soluções Sustentáveis "Anuário da Reciclagem"*. Available at <https://www.pragma.eco.br/categorias-de-conteudo-da-biblioteca-digital/documento>
- Break Free From Plastic (BFFP). (2018). *Branded: In Search of the World's Top Corporate Plastic Polluters, Volume 1*. Break Free From Plastic. Available at <https://www.breakfreefromplastic.org/globalbrandauditreport2018/>
- Brock, J., J. Geddie, and S. Sharma. (2021, January 17). *Big Oil's flagship plastic waste project sinks on the Ganges*. Reuters. Available at <https://www.reuters.com/article/us-environment-plastic-insight/big-oils-flagship-plastic-waste-project-sinks-on-the-ganges-idUSKBN29N024>
- Brooks, A.L., S. Wang, and J.R. Jambeck. (2018, June 20). *The Chinese import ban and its impact on global plastic waste trade*. *Science Advances*, 4(6), eaat0131. DOI: 10.1126/sciadv.aat0131
- Bünemann, A., J. Brinkmann, S. Löhle, and S. Bartnik. (2020, September 21). *Tunisia | ECO-LEF in Tunisia: a case study*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH PREVENT Waste Alliance. Available at <https://prevent-waste.net/wp-content/uploads/2020/09/Tunisia.pdf>
- C40 Cities Climate Leadership Group, C40 Knowledge Hub. (2019, July). *Why solid waste incineration is not the answer to your city's waste problem*. C40 Knowledge Hub. Available at https://www.c40knowledgehub.org/s/article/Why-solid-waste-incineration-is-not-the-answer-to-your-city-s-waste-problem?language=en_US

Cass Talbott, T. (2021, June). *Case study: Oregon's Bottle Bill: Opportunities and Challenges for Inclusive Waste Management*. The Global Alliance of Waste Pickers and WIEGO. Available at <https://epr.globalrec.org/case-study/oregon-usa/>

Chandran, P. (2021, June). *Empower (ing) informal recycling chain to get Extended Producer Responsibility moving*. Hasiru Dala Issue Series. Available at <https://hasirudala.in/wp-content/uploads/2021/06/Extended-Producer-Responsibility-and-Informal-Waste-Workers.pdf>

Chandran, P. (2021, November 11). *A Review of the Draft EPR Regulations 2021*. Waste Frames. Available at <https://wasteframes.com/2021/11/11/a-review-of-the-draft-epr-regulations-2021/>

Chandran, P. (2021, December 2). *Managing plastic packaging waste: Why the draft EPR rules are likely to fall short*. Citizen Matters. Available at <https://citizenmatters.in/plastic-waste-epr-rules-recycling-responsibility-28604>

Chandran, P., K. Arora, M. Abubaker, and N. Shekar (2018, June). *Valuing Urban Waste: The need for comprehensive material recovery and recycling policy*. Hasiru Dala. Available at <https://hasirudala.in/wp-content/uploads/2020/09/Valuing-Urban-Waste-2019.pdf>

Chandran, P., S. Narayanan, and U. Subramanian (2019, September). *A Mirage - Assessment of Swachh Bharat Abhiyan and SWM Rules 2016: Wastepickers Perspective Across India*. Indo-Global Social Service Society. Available at https://igsss.org/wp-content/uploads/2020/01/A-Mirage_22Nov1.pdf

Chandran, P. N. Shekar, M. Abubaker, and A. Yadav. (2014). *Informal Waste Workers Contribution in Bangalore* [ICON SWM 4th International Conference on Solid Waste Management]. ICON SWM.

Changing Markets Foundation and Break Free From Plastics. (2021, March). *More trash, more cash - Who is really behind the plastic crisis in Spain?* Changing Markets. Available at <http://changingmarkets.org/wp-content/uploads/2021/03/MoreTrashMoreCash.pdf>

Chen, M. A. (2012, August 1). *The Informal Economy: Definitions, Theories and Policies*. WIEGO. Available at https://www.wiego.org/sites/default/files/publications/files/Chen_WIEGO_WP1.pdf

Chikarmane, P. (2014, April 1). *City Report - Informal Economy Monitoring Study: Waste Pickers in Pune, India*. WIEGO. Available at <https://www.wiego.org/publications/city-report-informal-economy-monitoring-study-waste-pickers-pune-india>

Chintan Environment Research and Action Group and Hazards Centre. (2003, May). *Space for Waste Planning for the Informal Recycling Sector*. Municipal Solid Waste Knowledge Platform. Available at <https://www.waste.ccacoalition.org/document/space-waste-planning-informal-recycling-sector>

Consumer Brands Association. (n.d.). *Building a Circular Economy Through Effective Extended Producer Responsibility*. Consumer Brands Association. Available at <https://consumerbrandsassociation.org/sustainability/building-a-circular-economy-through-effective-extended-producer-responsibility/>

Corkery, M. (2019, July 5). *Beverage Companies Embrace Recycling, Until It Costs Them*. The New York Times. Available at <https://www.nytimes.com/2019/07/04/business/plastic-recycling-bottle-bills.html>

Deccan Herald. (2017, August 28). Solid waste management: ITC inks pact with CMC. *Deccan Herald*. Available at <https://www.deccanherald.com/content/630265/solid-waste-management-itc-inks.html>

Dembrow, et al. (2021). *Senate Bill 582 Modernizing Oregon's Recycling System*. Oregon Legislative Information System. Available at <https://olis.oregonlegislature.gov/liz/2021R1/Downloads/MeasureDocument/SB582/Enrolled>

Department of Environment, Forestry and Fisheries, Republic of South Africa. (2020). *National Waste Management Strategy 2020*. Available at https://www.dffe.gov.za/sites/default/files/docs/2020nationalwaste_managementstrategy1.pdf

Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH. (2010). *The Waste Experts: Enabling Conditions for Informal Sector Integration in Solid Waste Management*. GIZ. Available at <https://www.giz.de/en/downloads/gtz2010-waste-experts-conditions-is-integration.pdf>

Dias, S.M. and M. Samson. (2016, February). *Informal Economy Monitoring Study Sector Report: Waste Pickers. Women in Informal Employment: Globalizing and Organizing (WIEGO)*. Available at <https://www.wiego.org/sites/default/files/publications/files/Dias-Samson-IEMS-Waste-Picker-Sector-Report.pdf>

Down to Earth. (2022, January 19). *Unilever's plastic sachet chemical 'recycling' a failure in Indonesia, says GAIA*. Down To Earth. Available at <https://www.downtoearth.org.in/news/pollution/unilever-s-plastic-sachet-chemical-recycling-a-failure-in-indonesia-says-gaia-81179>

Duque Daza, M. E. (Forthcoming). *Responsabilidad Extendida del Productor (REP) en Colombia. Resolución de envases y empaques 1407 de 2018 y 1342 de 2020*. The Global Alliance of Waste Pickers and WIEGO.

Earthscan and United Nations Human Settlements Programme (UN-HABITAT). (2010). *Solid Waste Management in the World's Cities: Water and Sanitation in the World's Cities 2010*. UN-Habitat. Available at <https://unhabitat.org/solid-waste-management-in-the-worlds-cities-water-and-sanitation-in-the-worlds-cities-2010-2>

E-Waste in India. (2011, June). Rajya Sabha Secretariat, Government of India. Available at <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.733.8032&rep=rep1&type=pdf>

Global Alliance for Incinerator Alternatives (GAIA). (2020). *Chemical Recycling: Distraction, Not Solution. No Burn*. Available at https://www.no-burn.org/wp-content/uploads/2021/11/CR-Briefing_June-2020.pdf

Global Alliance for Incinerator Alternatives (GAIA). (2020, September 15). *Chemical Recycling: Behind the Industry Hype*. Available at <https://www.youtube.com/watch?v=SdSN2lbBGoM&t=11s>

Global Alliance for Incinerator Alternatives (GAIA) América Latina y el Caribe. (2021). *Ciclo de conversaciones sobre REP para envases y embalajes*. SP memoria REP. Available at <https://www.no-burn.org/wp-content/uploads/SP-memoria-REP.pdf>

Geyer, R., J. Jambeck, and K. Lavender Law. (2017, July 19). Production, use, and fate of all plastics ever made. *Science Advances*, 3(7), e1700782. DOI: 10.1126/sciadv.1700782

Global Alliance for Incinerator Alternatives (GAIA). (2018, January). *Facts about Waste-to-Energy Incineration*. Global Alliance for Incinerator Alternatives. Available at <https://www.no-burn.org/wp-content/uploads/GAIA-Facts-about-WTE-incinerators-Jan2018-1.pdf>

Global Alliance for Incinerator Alternatives (GAIA) and Changing Markets. (2017). *The CAREless Carpet Industry: A Critique of the California Carpet Stewardship Program's Reliance on Incineration*. Global Alliance for Incinerator Alternatives (GAIA). Available at <https://www.no-burn.org/wp-content/uploads/CHANGING-MARKETS-GAIA-A-CRITIQUE-OF-CALIFORNIAS-CARPET-STEWARDSHIP-PROGRAM-APRIL-19-.pdf>

Global Alliance of Waste Pickers. (2021). *Stats – Global Alliance of Waste Pickers*. Global Alliance of Waste Pickers. Available at <https://globalrec.org/waw/stats/>

Global Alliance of Waste Pickers, and WIEGO. (2021). *The Global Alliance of Waste Pickers Position on EPR – What is EPR?* Available at <https://epr.globalrec.org/position-on-epr/>

Godfrey, L. (2021, September). Quantifying economic activity in the informal recycling sector in South Africa. *South African Journal of Science*, 117(9/10). Available at <https://doi.org/10.17159/sajs.2021/8921>

Government of India. (2011). *The E-waste (Management and Handling) Rules, 2011*. Indian Kanoon. Available at <https://indiankanoon.org/doc/25696977/>

Green Partners Ltd, Resources and Waste Advisory Group, WIEGO and The Global Alliance of Waste Pickers. (2019, August). *Reducing Greenhouse Gas Emissions through Inclusive Recycling: Methodology & Calculator Tool*. WIEGO. Available at <https://www.wiego.org/ghg>

Grimaldi, I. (2019, April 19). *La basura y sus contenedores son materia de conflicto en la capital de Argentina | Video | CNN*. CNN en Español. Retrieved December from <https://cnnespanol.cnn.com/video/polemica-basura-inteligente-buenos-aires-grimaldi-pkg/>

Gupt, Y. and S. Sahay. (2015, July). Review of extended producer responsibility: A case study approach. *Waste Management & Research*, 33(7), 595– 611. 10.1177/0734242X15592275

Hamilton, L. A., S. Steven Feit, C. Muffett, S. Feit, M. Kelso, S. Malone Rubright, C. Bernhardt, E. Schaeffer, D. Moon, J. Morris, and R. Labbé-Bellas. (2019, May 3). *The Hidden Costs of a Plastic Planet*. Center for International Environmental Law. Available at <https://www.ciel.org/wp-content/uploads/2019/05/Plastic-and-Climate-FINAL-2019.pdf>

Heinrich Böll Foundation and Break Free From Plastic. (2019). *The Plastic Atlas*. Heinrich-Böll-Stiftung. Available at <https://www.boell.de/sites/default/files/2019-11/Plastic%20Atlas%202019.pdf>

Henzler, M., F. Eisinger, M. Hemkhaus, S. Sinha, P. Mahesh, and G. Gautam Mehra. (2018, November). *Creating Successful Formal-informal Partnerships in the Indian E-waste Sector*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH Circular Economy Briefing Series. Available at <https://www.adelphi.de/en/system/files/mediathek/bilder/giz2018-en-e-waste-partnerships-india.pdf>

Hinchliffe, D., E. Gunsilius, M. Wagner, M. Hemkhaus, A. Batteiger, E. Rabbow, V. Radulovic, C. Cheng, B. de Fautereau, D. Ott, A.K. Awasthi, and E. Smith. (2020). *Partnerships between the informal and the formal sector for sustainable e-waste management*. StEP Initiative. Available at <https://www.step-initiative.org/files/documents/publications/Partnerships-between-the-informal-and-the-formal-sector-for-sustainable-e-waste-management.pdf>

The Hindu Business Line. (2013, June 30). *ITC to set up waste processing units in Bangalore*. ITC. Available at <https://www.itcportal.com/media-centre/press-reports-content.aspx?id=1366&type=C>

IJgosse, J. (2019, August 11). *Waste Incineration and Informal Livelihoods: A Technical Guide on Waste-to-Energy Initiatives*. WIEGO. Available at https://www.wiego.org/sites/default/files/publications/file/IJgosse_waste-incineration_informal_livelihoods_WIEGO_TB11.pdf

International Labour Organization (ILO). (2015). *R204: Recommendation Concerning the Transition from the Informal to the Formal Economy*. Adopted by the ILO at its 104th conference session. Geneva. Available at https://www.ilo.org/wcmsp5/groups/public/@ed_emp/@emp_policy/documents/meetingdocument/wcms_125519.pdf

International Labour Organization (ILO). (2008). *Decent work and the transition to formalization: recent trends, policy debates and good practices Report of the Tripartite Interregional Symposium on the informal economy: Enabling Transition to Formalization* (Geneva 27- 29 November 2007). ILO. Available at https://www.ilo.org/wcmsp5/groups/public/@ed_emp/@emp_policy/documents/meetingdocument/wcms_125519.pdf

International Solid Waste Association (ISWA). (2014, September). *Globalisation and waste* [Series of presentations made at the World Congress of the International Solid Waste Association (ISWA)]. São Paulo, Brazil. Available at www.iswa.org

Katz, C. (2019, March 7). *Piling Up: How China's Ban on Importing Waste Has Stalled Global Recycling*. Yale E360, Yale School of the Environment. Available at <https://e360.yale.edu/features/piling-up-how-chinas-ban-on-importing-waste-has-stalled-global-recycling>

Kaza, S., L.C. Yao, P. Bhada-Tata, and F. Van Woerden. (2018, September 20). *What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050*, Overview booklet. World Bank, Washington, DC. Available at <https://openknowledge.worldbank.org/handle/10986/30317>

Krishnan, T. (2021, March 18). *India has failed to recognise that its e-waste disposers may be poor, but their knowledge is rich*. Scroll.in. Available at <https://scroll.in/article/989262/india-has-failed-to-recognise-that-its-e-waste-disposers-may-be-poor-but-their-knowledge-is-rich>

Lindhqvist, T. (2000, May). *Extended Producer Responsibility in Cleaner Production: Policy Principle to Promote Environmental Improvements of Product System*. The International Institute for Industrial Environmental Economics, Lund University Publications. Available at <https://lup.lub.lu.se/search/ws/files/4433708/1002025.pdf>

Matonte-Silva, C. and P. O'Hare. (Forthcoming). *Case Study: Packaging EPR in Uruguay*. Global Alliance of Waste Pickers and WIEGO.

Medina, M. (2007). *The World's Scavengers : Salvaging for Sustainable Consumption and Production*. AltaMira Press.

Mela, S. (2021, April 27). *Parpounas Sustainability Consultants*. Parpounas Sustainability Consultants. Available at <https://www.parpounas.net/ArticleSideGallery/ArticleID=1165>

Mena, A. and S. Mella. (2021). *Ley REP: La Batalla del Informal*. Asociación Movimiento Nacional de Recicladores de Chile (ANARCH).

Michaelson, R. (2021, December 31). 'Waste colonialism': world grapples with west's unwanted plastic. *The Guardian*. Available at <https://www.theguardian.com/environment/2021/dec/31/waste-colonialism-countries-grapple-with-wests-unwanted-plastic>

Miller, C. (2019, March). *Recycle British Columbia's Extended Producer Responsibility for Packaging and Paper: An Assessment of Its Impact*. California's Organic Waste Recycling Mandate. Available at https://www.resourcecoalition.org/uploads/pdf/Recycle_BC_White_Paper_2-19.pdf

Ministerio Del Medio Ambiente. (2016, June 1). *LEY 20920 ESTABLECE MARCO PARA LA GESTIÓN DE RESIDUOS, LA RESPONSABILIDAD EXTENDIDA DEL PRODUCTOR Y FOMENTO AL RECICLAJE*. Ley Chile. Available at <https://www.bcn.cl/leychile/navegar?idNorma=1090894>

Ministry of Environment and Forests, Government of India. (2011). *The E-waste (Management and Handling) Rules, 2011*. Indian Kanoon. Available at <https://indiankanoon.org/doc/25696977/>

Ministry of Environment and Forests, Government of India. (2011, February 4). *Plastic Waste (Management and Handling) Rules, 2011*. Available at https://www.indiawaterportal.org/sites/default/files/iwp2/Plastic_waste_management_and_handling_rules_Ministry_of_Environment_and_Forests_Government_of_India_2011.pdf

Ministry of Environment of Brazil. (2010, August 2). *Law No.12305 – Brazilian National Policy on Solid Waste*. Brazilian NR. Available at <https://www.braziliannr.com/brazilian-environmental-legislation/law-no-12305-brazilian-national-policy-solid-waste/>

Nahman, A. (2010, January). Extended producer responsibility for packaging waste in South Africa: Current approaches and lessons learned. *Resources, Conservation and Recycling*, 54(3), 55-162. Available at <https://doi.org/10.1016/j.resconrec.2009.07.006>

National Bottle Bill Webinar [Hosted by Institute of Local Self Reliance (ILSR)]. (2021, August 24). Available at <https://us06web.zoom.us/rec/play/fKMepxWScMc0vtOjgJ8qjKlkhkJ7s-4ba7yo85ThnqHPWs9PtcYV4LvYkiQwxXMBMy-BxuewebZGw3zA.fnUiusPWtNSGVcSR?continueMode=true>

Nemo, L. (2021, August 13). *What can EPR programs learn from more than a decade of PaintCare?* Waste Dive. Available at <https://www.wastedive.com/news/what-can-packaging-epr-learn-from-state-paint-epr-programs/604670/>

Northeast Waste Management Officials' Association (NEWMOA) & the Northeast Recycling Council (NERC). (2020, April). *White Paper Extended Producer Responsibility (EPR) for Packaging & Paper Products*. NEWMOA. Available at http://www.newmoa.org/solidwaste/EPR_for_PPP_White_Paper.pdf

Oregon Legislative Information. (2021, August 6). *Plastic Pollution and Recycling Modernization Act*. Department of Environmental Quality, State of Oregon, United States of America. Retrieved from <https://www.oregon.gov/deq/recycling/Pages/Modernizing-Oregons-Recycling-System.aspx>

Organization for Economic Co-operation and Development (OECD). (2011). *Extended Producer Responsibility A Guidance Manual for Governments*. OECD. Available at https://read.oecd-ilibrary.org/environment/extended-producer-responsibility_9789264189867-en#page1

Organization for Economic Co-operation and Development (OECD). (2016, September 20). *Extended Producer Responsibility: Updated Guidance for Efficient Waste Management* | en. OECD. Available at <https://www.oecd.org/development/extended-producer-responsibility-9789264256385-en.htm>

Product Stewardship Institute, Inc. (PSI). (2014, June 3). *Electronics EPR: A Case Study of State Programs in the United States- DRAFT*. OECD. Available at [https://www.oecd.org/environment/waste/United%20States%20\(PSI%20-%20Cassel\).pdf](https://www.oecd.org/environment/waste/United%20States%20(PSI%20-%20Cassel).pdf)

Product Stewardship Institute, Inc. (PSI). (2021, August 6). *Momentum grows – Oregon joins Maine and passes second US packaging EPR law*. Product Stewardship Institute (PSI). Available at <https://www.productstewardship.us/news/576056/Momentum-grows--Oregon-joins-Maine-and-passes-second-US-packaging-EPR-law.htm>

Quinn, M. and C. Rosengren. (2021, June 30). *Oregon governor signs country's second EPR law for packaging*. Waste Dive. Available at <https://www.wastedive.com/news/oregon-epr-packaging-truth-in-labeling-living-wage/602640/>

Reciclos. (n.d.). *The Circular Lab by Ecoembes*. Available at <https://www.thecircularlab.com/en/explore/reciclos/>

Republic of South Africa. (2008). No. 59 of 2008: *National Environmental Management: Waste Act, 2008*. Available at https://www.dffe.gov.za/sites/default/files/legislations/nema_amendment_act59.pdf

Ribeiro-Broomhead, J., and N. Tangri. (2021). *ZERO WASTE AND ECONOMIC RECOVERY*. Global Alliance for Incinerator Alternatives. Available at <https://www.no-burn.org/wp-content/uploads/Jobs-Report-ENGLISH.pdf>

Rogers, H. (2005). *Gone Tomorrow: The Hidden Life of Garbage*. New Press.

Rogoff, M.M. and D.E. Ross. (2016). *The future of recycling in the United States*. *Waste Management & Research*, Sage Publications, 34(3), 181-183. DOI: 10.1177/0734242X16629599

Rutkowski, J. E. (2020). *Inclusive Packaging Recycling Systems: Improving Sustainable Waste Management for a Circular Economy*. *Detritus, Journal of Waste Resources and Residues Cisa Publisher*, 13, 29–46. 10.31025/2611-4135/2020.14037

Rutkowski, J. E. (2021). *Case Study: Reverse Logistics for Packaging – Brazil’s EPR Mode*. The Global Alliance of Waste Pickers and WIEGO. Available at <https://epr.globalrec.org/case-study/brazil/>

Scheinberg, A. (2012, March 1). *Informal Sector Integration and High Performance Recycling: Evidence from 20 Cities*. WIEGO, WIEGO Working Paper (Urban Policies) No 23. Available at <https://www.wiego.org/publications/informal-sector-integration-and-high-performance-recycling-evidence-20-cities>

Scheinberg, A., J. Nesić, R. Savain, and P. Luppi. (2016, July 22). From collision to collaboration - Integrating informal recyclers and re-use operators in Europe: A review. *Waste Management & Research*, 34(9), 820-39. 10.1177/0734242X16657608

Schlegel, I. (2020, September 9). *Deception by the Numbers: Claims about Chemical Recycling Don't Hold Up to Scrutiny*. Greenpeace. Available at <https://www.greenpeace.org/usa/research/deception-by-the-numbers/>

Schröder, P. (2020, February 6). *Promoting a Just Transition to an Inclusive Circular Economy*. Chatham House, Energy, Environment and Resources Programme. Available at <https://www.chathamhouse.org/sites/default/files/2020-04-01-inclusive-circular-economy-schroder.pdf>

Schröder, P., M. Anantharaman,, K. Anggraeni, and T.J. Foxon. (Eds.). (2019). *The Circular Economy and the Global South: Sustainable Lifestyles and Green Industrial Development* (1st ed.). Routledge.

Seldman, N. (2020, December 3). *Critiques of Different Approaches to Extended Producer Responsibility in Canada*. Institute for Local Self-Reliance. Available at <https://ilsr.org/critiques-of-different-approaches-to-extended-producer-responsibility-in-canada/>

Stephenson, D., and I. Faucher. (2018). *Estudio comparativo de legislación y políticas públicas de Responsabilidad Extendida del Productor – REP para empaques y en* (Comparative study of legislation and public policies of Extended Producer Responsibility - REP for packaging and containers). Latitud R. Available at <https://latitudr.org/wp-content/uploads/2018/12/Estudio-REP-IRR-1.pdf>

Swachh Bharat Mission, Government of India. (2017, December 31). *Social Inclusion Manual_2016 Revised.indd*. Smartnet. Available at https://smartnet.niua.org/sites/default/files/resources/towards_an_inclusive_swachh_bharat-integrating_informal_sector_recyclers.pdf

Testa, M. E. (2017, August 10). *RESIDUOS Y RESPONSABILIDAD EXTENDIDA DEL PRODUCTOR, ¿AHORA SÍ?* Punto Verde Blog. Available at <https://puntoverdeblog.net/2017/08/10/residuos-y-responsabilidad-extendida-del-productor-ahora-si/>

Tucker, K. (2018). *SOLVE (SOLV)*. The Oregon Encyclopedia. Available at <https://www.oregonencyclopedia.org/articles/solv/#.YjoQ9xAzZQJ>

United Nations Development Programme (UNDP). *Plastic Waste Management Programme (2018-2024) - India*. UNDP in India. Available at <https://www.in.undp.org/content/india/en/home/projects/plastic-waste-management.html>

The UN Working Group on Business and Human Rights. *The UN Guiding Principles on Business and Human Rights*. Available at https://www.ohchr.org/sites/default/files/Documents/Issues/Business/Intro_Guiding_PrinciplesBusinessHR.pdf

Vergara, R., J. Recordon, and M.J. Barros.. (2021, March 16). *Decree that sets goals and obligations to plastic containers and packaging in Chile is publis[h]ed*. Carey. Available at <https://www.carey.cl/en/decree-that-sets-goals-and-obligations-to-plastic-containers-and-packaging-in-chile-is-published/>

Viteri, J. S. (Forthcoming). *Ecuador's Deposit Return System for PET plastic bottles (El Sistema de Depósito, Devolución y Retorno en Ecuador para las Botellas de Plástico)*. Global Alliance of Waste Pickers and WIEGO.

Wankhede, V. (2020, June 30). *How e-waste crisis continues to plague informal sector*. DownToEarth. Available at <https://www.downtoearth.org.in/blog/waste/how-e-waste-crisis-continues-to-plague-informal-sector-72033>

Watkins, E. and V. Bell. (2020). *How to Implement Extended Producer Responsibility (EPR)*. World Wide Fund (WWF) and Institute for European Environmental Policy. Available at https://wwfint.awsassets.panda.org/downloads/how_to_implement_epr_briefing_for_government_and_business.pdf

Weiss, J. (2019). *Extended Producer Responsibility and the Environmental Policy Implementation Process in California: A case study of Paintcare Master's Theses*. 5051. SJSU ScholarWorks. Available at https://scholarworks.sjsu.edu/cgi/viewcontent.cgi?article=8598&context=etd_theses

Woggsborg, A., and P. Schröder. (2018, August 28). *Nigeria's E-Waste Management: Extended Producer Responsibility and Informal Sector Inclusion*. *Journal of Waste Resources and Recycling*, Annex Publishers, 1(1). DOI:10.15744/2766-5887.1.102

Women in Informal Employment: Globalizing and Organizing (WIEGO). (2021, July). *COVID-19 Crisis and the Informal Economy: Executive Summary*. WIEGO. Available at <https://www.wiego.org/sites/default/files/publications/file/COVID-19%20Crisis%20-%20Executive%20Summary%20-%20July%202021%20-%20web.pdf>

World Economic Forum, Ellen MacArthur Foundation and McKinsey and Company. (2016). *The New Plastics Economy: Rethinking the future of plastics*. Ellen MacArthur Foundation. Available at <https://ellenmacarthurfoundation.org/the-new-plastics-economy-rethinking-the-future-of-plastics>



About WIEGO

Women in Informal Employment: Globalizing and Organizing (WIEGO) is a global network focused on empowering the working poor, especially women, in the informal economy to secure their livelihoods. We believe all workers should have equal economic opportunities, rights, protection and voice. WIEGO promotes change by improving statistics and expanding knowledge on the informal economy, building networks and capacity among informal worker organizations and, jointly with the networks and organizations, influencing local, national and international policies. Visit www.wiego.org.



About the Global Alliance of Waste Pickers

The Global Alliance of Waste Pickers is a network of waste picker groups constituting more than 100 organizations across 34 countries and representing over 300,000 workers. Visit www.globalrec.org