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This report has been commissioned by the Ellen MacArthur Foundation in partnership with the World Wide Fund for Nature (WWF)

Making the Global Plastics Treaty work for Micro-, Small-, and Medium-sized Enterprises (MSMEs)

June 2024

Table of Contents

About this study

This report has been commissioned by the Ellen MacArthur Foundation in partnership with the World Wide Fund for Nature (WWF) in order to better understand the perspectives of Micro-, Small-, and Medium-sized Enterprises (MSMEs) on a global plastics treaty.[1] It identifies key opportunities and challenges and provides initial recommendations for how to ensure an effective and fair treaty that, by design, supports, and is supported by, MSMEs. This report is intended as a first exploration of implications of the legally binding treaty on MSMEs and while it provides useful insights, we welcome further research and investigation into this area.

Although the negotiations on a global plastics treaty encompass a broad range of plastic products, this study focuses on packaging and single-use plastics due to their widespread use and significant impact on the environment, with 40% of all plastic waste generated globally coming from packaging.[2] MSMEs in the plastic packaging and alternatives value chain from around the world were targeted in a three-pronged approach: surveys, interviews, and focus groups. In total, 132 MSMEs provided insights on how their business would be affected by a plastics treaty and consequent regulatory changes. The respondents spanned geographies, value chain, and size classes of MSMEs, providing a holistic perspective of the opportunities and challenges that globally harmonised regulation could bring. In addition, modelling from the study, *Towards Ending Plastic Pollution by 2040 (TEPP)*,[3] a report commissioned by the Nordic Council of Ministers in 2023, was further interrogated to provide quantitative insights into the impact on MSMEs of selected global rules considered for inclusion in the treaty.

For more information about the study approach, please see the Appendix.

Executive summary

Policymakers can be confident that there is broad support among Micro-, Small-, and Medium-sized Enterprises (MSMEs) for an ambitious and legally binding plastics treaty.[4] Of the 132 MSMEs consulted through this study, most were in favour of strong global rules to mitigate the plastic pollution crisis. The environmental, health, and socioeconomic imperatives to end plastic pollution have never been clearer and the negotiations for a legally binding UN treaty represent a once-in-a-generation opportunity to tackle the plastic pollution crisis in a coordinated way through the introduction of global rules.

MSMEs are crucial to the success of any treaty. MSMEs represent 90% of businesses worldwide and are engines of innovation in many sections of the plastics industry. Particularly in high-impact sectors such as packaging,[5] it is crucial to explore the potential opportunities and challenges that the introduction of these global rules bring.

Our analysis shows that, if implemented effectively and fairly, global rules can unlock significant opportunities and benefits across the MSME landscape. The report explores the following seven global rules of particular relevance to MSMEs that are under consideration for inclusion in the plastics treaty:

- **Global rule 1:** Virgin plastic fees to fund solutions across the plastic lifecycle
- **Global rule 2:** Bans on avoidable single-use plastics
- **Global rule 3:** Reuse targets for avoidable single-use plastics
- **Global rule 4:** Phaseout of problematic plastics, polymer applications, and chemicals of concern
- **Global rule 5:** Design rules for reuse, repair, durability, and cost-effective recycling of packaging and consumer goods
- **Global rule 6:** Targets for collection and recycling rates
- **Global rule 7:** Extended Producer Responsibility (EPR) systems applied across sectors.

Each rule was modelled for its impact on the global economy and on reducing plastic pollution in the report *Towards Ending Plastic Pollution by 2040*.[6] The impact of these rules on a range of MSMEs across the plastic packaging value chain and associated businesses was analysed through consulting quantitative modelling studies, MSME engagement, and expert assessment.

The overwhelming majority of MSMEs consulted anticipated benefits in terms of harmonisation, standardisation, and market expansion from the well-managed introduction of these rules. MSMEs across the global plastics landscape were consulted: from waste pickers in Ghana and plastics converters in Peru to producers of alternative materials in the Netherlands and reuse delivery system providers in Singapore. Collectively, their responses provide valuable first-hand insight into how potential regulatory changes triggered by the global plastics treaty are anticipated to affect MSMEs. The findings show that an ambitious, well-designed global plastics treaty will unlock a range of opportunities and benefits for MSMEs. In particular, new market opportunities will be created in some sectors where MSMEs are key actors such as the operation of product delivery models, production of alternative materials, and waste management.

In the immediate and short term, however, it is important to recognise that MSMEs in certain parts of the value chain may also experience challenges, including contracting markets, temporary price increases, and employment shifts as a result of new legislation emerging from the plastics treaty. If supporting measures for MSMEs are implemented effectively, these challenges can be managed via a careful implementation of the rules and are ultimately outweighed in the long-term by the benefits on offer. For example, increased opportunities for job creation in plastic reduction and substitution activities, including reuse and recycling, exceed short-term negative employment impacts in plastic production and conversion sectors. Given the critical role of the informal economy in many countries, including waste pickers and street vendors, it is vital that the plastics treaty is designed in a way that ensures a just transition through measures that are *"as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind"*.[7]

To ensure that MSMEs harness the expected benefits over time, the plastics treaty should establish specific policy measures that support them to manage the transition. The need for fair and effective implementation of global rules in relation to MSMEs is particularly crucial as they provide 70% of employment opportunities worldwide. To ensure this is the case, the following measures should be considered for inclusion in the plastics treaty and national regulations implemented to meet treaty requirements:

1. **Differentiated implementation timelines** to catalyse innovation and grant MSMEs time to adapt to new regulatory requirements
2. **Knowledge and technology transfer** of equipment, materials, and processes to reduce transition barriers
3. **Vocational training and education** to support the employment transition away from extraction and production towards circular business models and approaches
4. **Flexible financial instruments** for MSMEs to support them to scale solutions, meet treaty demands, access new technology, and enable relevant infrastructure development.

Through this deliberate approach, policymakers can make sure that ambitious global rules — for example, on restrictions and phaseouts of problematic and avoidable plastic-containing products and packaging, reuse policies, design rules, EPR systems, and collection and recycling targets — help to end plastic pollution and also benefit businesses across the plastics value chain, including MSMEs.

01

01. Introduction

In the face of exponential growth of plastic production,[8] a UN treaty with globally mandated rules based on clear definitions and standards is critical to end plastic pollution and enable the industrial transformation towards a circular economy. The threat that plastic pollution poses to nature, climate, and human health is clear. In addition, the escalating plastic pollution crisis carries a significant and increasing economic burden.[9] The financial costs of inaction — this means in a 'business-as-usual scenario' without strong global rules being implemented — are significant, estimated to be USD 20 trillion, with public spending of approximately USD 1.7 trillion.[10]

Economic impact modelling shows that the financial cost of inaction/business-as-usual on plastic pollution is likely to outweigh the cost of ambitious actions in a 'global-rules scenario', which would include initial investments in research, development, and implementation of new delivery systems, alternative materials, and scaling of recycling infrastructure. These are estimated at USD 17 trillion, with public spending of USD 1.5 trillion.[11] Coordinated approaches can significantly lower the costs of action if they are based on common global rules in the plastic treaty.[12] In addition, more ambitious actions will lead to cost savings by reducing environmental remediation and healthcare expenses over time.[13,14,15]

It is important to ensure that the treaty generates benefits globally across sectors at the same time as it supports a just transition.[16] The design of the treaty should also consider the key role of the informal economy for example in waste picking and street vending activities. The 2020 report *The Business Case for a UN Treaty on Plastic Pollution*[17] showcased how enforcing globally harmonised rules over the full life-cycle of plastics could enhance investment planning, stimulate innovation, and help coordinate infrastructure development. The specific implications of ambitious global rules in the plastics treaty are, to date, less understood for Micro-, Small-, and Medium-sized Enterprises (MSMEs). Considering the vital contribution MSMEs play in domestic industries and economies around the world, including the crucial role informal microenterprises, such as waste pickers and street vendors, play in the plastics packaging value chain, it is critical that the socio-economic impacts of the plastics treaty on MSMEs are properly considered in the treaty's design. While global rules and mandatory policy measures can level the playing field for the industry, implementation mechanisms need to be designed to enable a just, inclusive, and equitable transition for all people involved in the plastics value chain.

This report is an initial effort to understand the MSME perspective for a global plastics treaty, providing recommendations on how to design a treaty that supports — and is supported by — MSMEs. While broader product groups are included in the plastics treaty negotiations, this report focuses on packaging and single-use plastics due to their widespread use and significant impact on the environment, with 40% of all plastic waste generated globally coming from packaging.[18]

02

02. The importance of MSMEs in the plastic packaging value chain

MSMEs are a significant contributor to domestic economic development, representing about 90% of businesses globally. MSMEs provide 70% of employment opportunities worldwide and contribute more than 50% of GDP in most OECD countries. In the Middle East and North Africa, Sub-Saharan Africa and South Asia, microenterprises — that is enterprises with less than 10 employees — represent over 85% of employment, and 60% in Latin America.[19]

In addition to their economic importance and geographic distribution, MSMEs represent a vital source of innovation, with an entrepreneurial spirit that can foster competition and incubate innovations such as circular economy business models and solutions to plastic pollution. The UN General Assembly resolution A/RES/71/279 recognised the crucial role MSMEs have in achieving the Sustainable Development Goals. Resolution A/RES/75/211 further emphasises that entrepreneurship will play a central role in the circular economy transition. MSMEs are more likely to pioneer innovations that fundamentally change a system since MSMEs are not tied to long-standing, well-established business models.[20]

Transforming the plastic packaging system requires actors of all sizes and scales to make it work. From medium-sized industrial facilities and alternative material start-ups, to street vendors and cooperatives of informal workers, MSMEs are represented across the plastic packaging industry (see Figure 1) and are already leading the way in the plastics industry transition. A 2022 market analysis of 1,196 reuse and refill solutions operating in 119 countries found that approximately 80% of solutions were start-ups or small businesses.[21] Entrepreneurial ventures are leading the reuse revolution (see Box 1), developing innovations to manage marine plastic pollution, and actively working to support a circular economy transition by developing technologies, changing consumer norms, and engaging with public institutions.[22,23]

	Plastic packaging and supporting industries value chain		
	Raw material producers & converters	**Brands and retailers**	**Waste management**
Micro<10 employees	Small plastic packaging retailers	Street vendors	Waste pickers
Small<50 employees	Alternative material start-ups	Hotels and restaurants	Waste aggregators and processers
Medium<250 employees	Raw material producers	Food and beverage brands	Recycling plants

Figure 1: Examples of MSMEs across the plastic packaging value chain

BOX 1

The case of Algramo: MSMEs in the plastic packaging value chain driving change for the adoption of reusable packaging in Chile

Founded in 2013, Algramo's business model is based on a reusable packaging system with smart technology, dispensers, and affordable containers. The system was initially conceived for low-income neighbourhoods of Santiago, Chile, to help consumers overcome the "cost of poverty", i.e. the extra charge paid for purchasing household products sold in smaller container sizes (e.g. sachets). To date, the 758,596 reusable packaging containers used in Algramo systems avoided 98 tonnes of single-use plastic packaging. Algramo users save on average 12.5% on costs per litre equivalent of product.

In 2023, together with the marine conservation NGO Oceana and the Chilean National Recycling Association (ANIR), Algramo led initiatives targeting the Chilean government for the creation of a supportive regulatory framework for the implementation of reusable business models via: 1) adoption of national packaging reuse targets within a specific timeframe; 2) obligations for retailers to implement reuse systems; and 3) elimination of regulatory barriers for reuse systems for personal care products and pet foods. Currently, technical implementation guidelines for establishing reuse targets are being developed.

MSMEs also play an important role in filling market gaps and providing needed services.[24] Globally, between one and three billion people do not have access to municipal solid waste collection.[25] While larger waste management conglomerates tend to be centred in or near urban areas, MSMEs often contribute to rural development by organically and incrementally developing and providing much needed infrastructure. For example, while a multinational waste management company might focus on a metropolis, MSMEs often focus on waste collection services in peripheral or rural neighbourhoods. MSMEs fulfil a similar role in integrating and filling the gaps in the supply chain, meaning larger enterprises often rely on MSMEs to attain greater productivity and economic efficiency. For example, a mid-scale material recovery facility might collaborate with individuals or groups of waste pickers to increase their overall aggregation potential.

While larger companies typically have the resources and resilience to adapt to far-reaching changes, MSMEs often operate with limited access to human, financial, and technical capital. Though limited resources can be challenging, particularly during times of transition, MSMEs are often more agile than large corporations. Their nimble organisational structures, adaptive and entrepreneurial mindset, and intimate knowledge of products, services, and customers allows for rapid innovation and pivoting of business models.[26,27]

03

03. Opportunities and challenges of global rules for MSMEs

The insights below were developed through consulting quantitative modelling studies, MSME engagement, and expert assessment. Data from modelling in the *Towards Ending Plastic Pollution by 2040* paper was further interrogated to explore the impact of global rules on MSMEs. In turn, 132 MSMEs were consulted to provide insights on how their business would be affected by a plastics treaty and consequent regulatory change.

Seven global rules of particular relevance to MSMEs that are under consideration for inclusion in the plastics treaty were explored:

- **Global rule 1:** Virgin plastic fees to fund solutions across the plastic lifecycle
- **Global rule 2:** Bans on avoidable single-use plastics
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See About this Study and Appendix: Study Approach for more details on study approach.

3.1 Treaty implications for MSMEs

Our analysis shows that common, global rules can unlock significant opportunities and benefits for MSMEs and that there is broad support for ambitious treaty measures from this group of businesses. In particular, new market opportunities will be created in some sectors where MSMEs are key actors such as the operation of product delivery models, production of alternative materials, and waste management. The overwhelming majority of MSMEs consulted anticipated benefits in terms of harmonisation, standardisation, and market expansion from the well-managed introduction of these rules.

The negative impacts — principally related to employment — are concentrated in the early production stages of the value chain which is dominated by large companies, with corresponding resources to be able to adapt, rather than MSMEs. Lack of capacity and technical clarity to deal with regulatory changes surfaced as the key challenges facing MSMEs, but these could be addressed through dedicated support mechanisms both in the plastics treaty itself and when implementing global rules through national legislation.

Key insights from quantitative modelling

A global-rules scenario enables a transition away from industries creating plastic (i.e. virgin plastic production and conversion) towards alternative job opportunities, most notably in plastic reduction and substitution, including reuse, as well as recycling (see Figure 2).

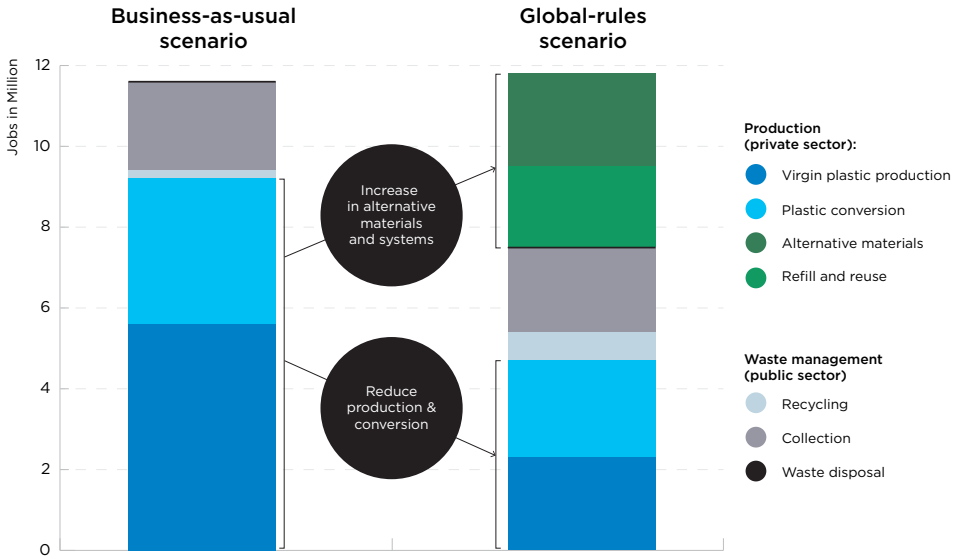


Figure 2: Employment opportunities in a business-as-usual versus global-rules scenarios, data taken from TEPP report. Note that the TEPP model uses different value chain segmentation; Retail and Distribution is not included and Waste Management is further segmented into recycling, collection and disposal.

In an ambitious global-rules scenario, the market for virgin plastic production and conversion into products will decrease whilst catalysing much needed investments in alternative materials, refill, and reuse systems — much of which could flow to MSMEs (see Figure 3).

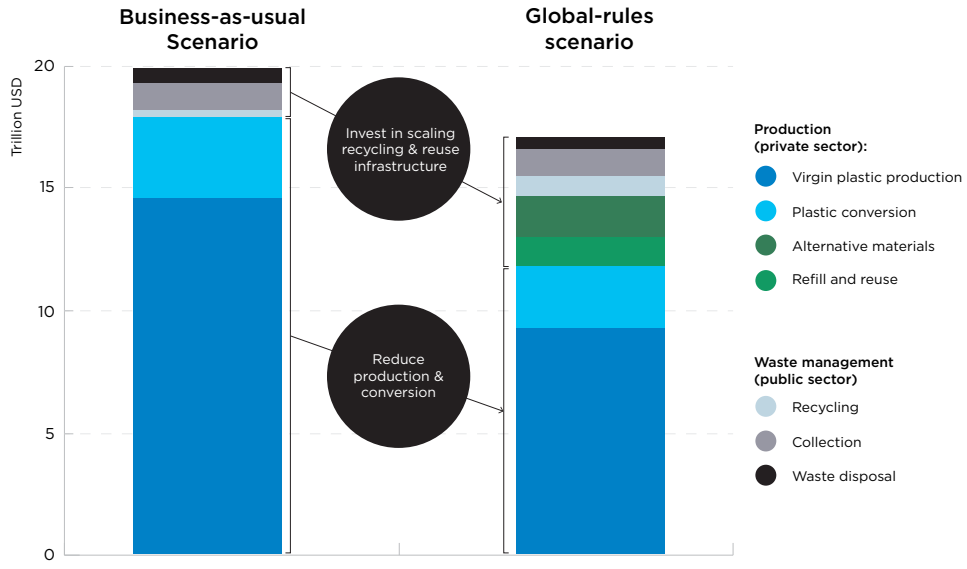


Figure 3: Cost estimates in a business-as-usual versus global-rules scenarios, data taken from TEPP report. Note that the TEPP model uses different value chain segmentation; retail and distribution is not included and waste management is further segmented into recycling, collection and disposal.

In addition, these impacts were mapped onto industry segments to see which are likely to be most affected by the transition. Analysis suggests that MSMEs that contribute to the transition away from plastic pollution — including those involved in reuse, refill, alternative materials, waste management, and supporting business activities — can realise a range of opportunities and benefits from the introduction of global rules. However, MSMEs engaged higher up the plastic value chain — for example, in raw material manufacturing, packaging production, retail, and distribution — may face more short-term challenges and potential negative impacts (see Figure 4).

The size of bars represents the approximate size of the MSME segment and therefore potential scale of impact, while the colour gradient indicates the aggregate direction of impacts in terms of positive and negative outcomes.

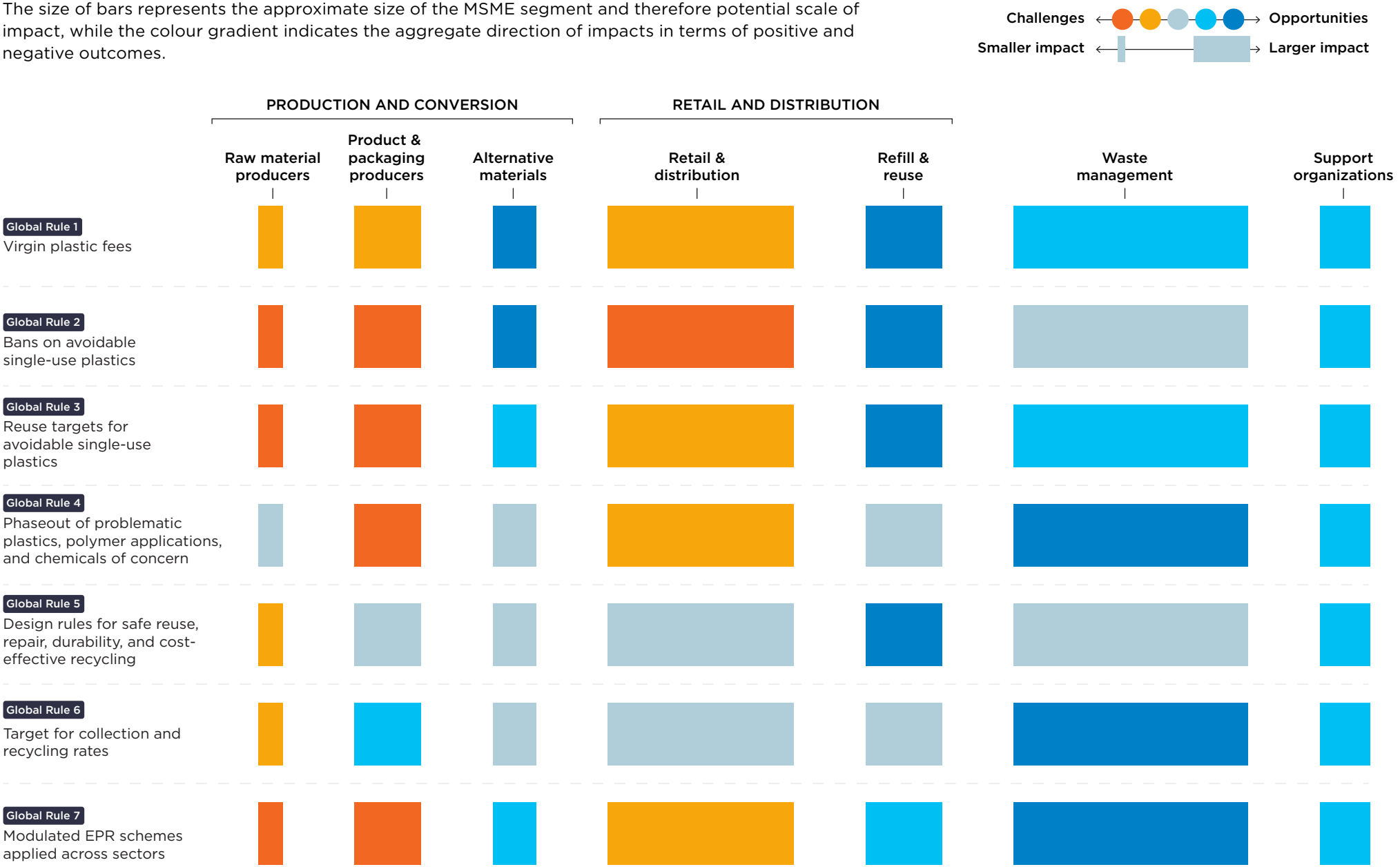


Figure 4: Potential impacts of seven hypothetical global rules across different MSME segments — the impact of the global rules on MSMEs was assessed through engagement with over 132 MSMEs.

In summary, the key findings are as follows:

- MSMEs in plastic production and conversion sectors are likely to experience short-term negative impacts on employment as demand for these activities decreases due to fees, bans, and phaseouts (global rules 1, 2, and 4)
- Opportunities for increased employment in plastic reduction and substitution activities, including reuse and recycling, have the potential to offset these losses due to incentives
- MSMEs will need transitional support, particularly in relation to upskilling, reskilling, and technology and education programmes, to take advantage of job creation in these market segments
- Informal sector workers, including waste pickers, can stand to gain both from funding channelled — for example, through EPR systems (global rule 7) — towards opportunities to reskill, and through increased activity in collecting, sorting, and processing commensurate with meeting reuse and recycling targets (global rules 3, 6, and 7)
- Increases in capital flow to alternative materials and refill and reuse systems (in response to global rules 1, 2, 4, and 5) could flow to MSMEs, as frequent innovators in these circular economy approaches
- In parallel, investments in MSMEs in reduction, substitution, and recycling sectors will increase as reuse and recycling infrastructure scales up to meet demand and achieves more economic efficiency through price parity and scale (global rules 3 and 6)
- In countries without developed waste management systems, public sector investment will be particularly crucial to build the necessary infrastructure to meet targets; elsewhere the public sector may see decreases in waste management costs as reuse scales up (global rules 3 and 6).

MSME archetype	Main impacts
Virgin plastic raw material manufacturers	- Shrinking market for raw materials - Increased regulatory burdens and short-term costs
Plastic product and packaging converters	+ Alignment on acceptable plastic types + Increased availability of recycled materials - Shrinking market for plastic packaging - Increased regulatory burdens and short-term costs
Alternative materials	+ Increased demand for alternatives to plastics + New market opportunities
Retail and distribution	- Fewer options for packaging needs - Increased regulatory burdens and short-term costs
Refill and reuse	+ New market opportunities
Waste management	+ Increased investment + Increased revenues due to increase in high-value (recyclable) waste streams - Reduction in certain plastic streams
Support organisations	+ New market opportunities

Figure 5: Summary of impacts per MSME archetype

Key insights from MSME engagement

An overwhelming majority of the respondents surveyed were positive about the idea of regulating plastics in a way that led to standardisation, set a clear direction, and supported plastic waste collection, processing, recycling, and safe disposal.

In addition to those directly related to the potential challenges and opportunities of the global rules, some recurring themes emerged from the MSME engagement, including capacity challenges impacting their ability to deeply engage with the treaty negotiation process. They prioritised understanding how a global plastics treaty would affect their operations and stressed the importance of raising awareness among customers and consumers to support their transition. MSMEs from developing countries emphasised the necessity of robust policy enforcement for the treaty to be effective.

Interviewees highlighted that the current confusion on technical aspects across the global plastic value chains harms the market potential for MSME solutions. Support was therefore most frequently voiced for treaty measures that create transparency, traceability, and harmonisation, and for clear definitions and standards. These elements would provide clarity, simplify business operations, support plastic waste collection and recycling, and increase the safety and value of materials.

The following sections explore the potential opportunities and challenges for MSMEs of ambitious global rules in more detail.

3.2 Potential opportunities

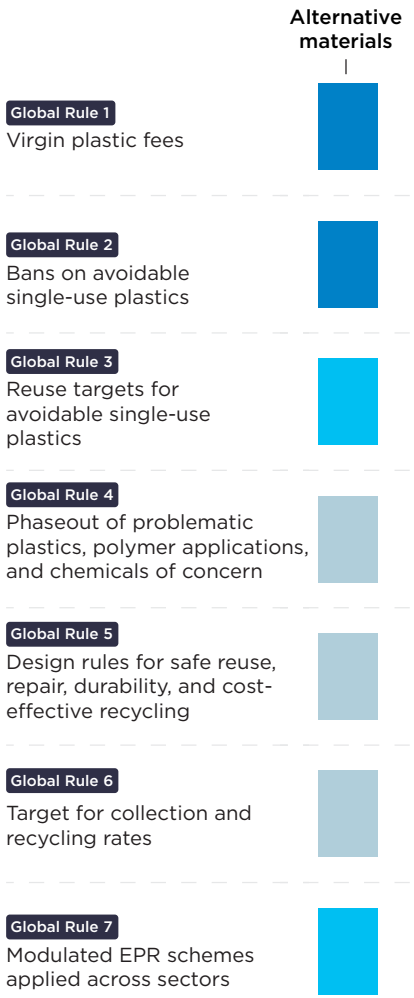
An ambitious and well-designed treaty has the potential to shift capital and jobs from plastic-intensive linear production and consumption systems towards more circular alternatives, creating new socio-economic opportunities for MSMEs. The potential opportunities for MSMEs are principally:

1. Increased revenues and investments for circular solutions

2. New market opportunities in certain MSME sectors.

MSMEs already involved in circular solutions recognise that global rules can strengthen the economics behind their business models and improve access to capital (63% were positive about the treaty, 37% were neutral, and none were negative). Since, under the proposed global rules, funds will be potentially generated by EPR and virgin plastic fees, the expectation is that finance will be funnelled into public investments for solutions across the plastic lifecycle — de-risking and crowding-in private investments. This, alongside single-use plastic bans, targets for reuse and refill, and design rules, will benefit alternative material producers and refill and reuse systems — industries involving many MSMEs (see Figure 3).

The waste management sector is expected to see increased investment and the market for recycled materials may strengthen as a result of recycling and recycled material targets and design rules. Along the value chain, harmonisation of product-related standards and polymer types, including phaseouts of problematic chemicals used in plastics, will unlock opportunities and increase the value of collection and recycling. These rules will not only provide health and safety benefits, but improve the quality of recyclates which will, in turn, benefit waste pickers, and aggregators as well as converters using recycled materials.



Alternative plastic and non-plastic materials

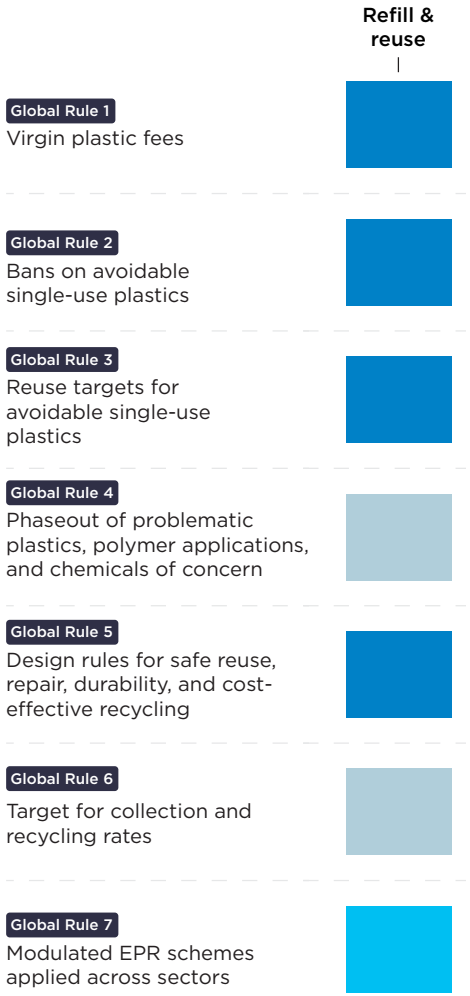
The development and availability of safe alternatives to virgin fossil-based plastics as part of a comprehensive circular economy approach is important to meet treaty goals and to end plastic pollution. MSMEs are at the forefront of alternative material value chains and development. A level playing field, enabled by strong global rules, will allow them to progress further, faster.

Virgin plastic fees, bans on avoidable single-use plastics, phaseouts of problematic plastics and applications, and design rules (global rules 1, 2, 4, 5, and 7) could lead to price and performance parity for alternative materials. The treaty will see brands, retailers, and vendors across industries like food and consumer goods turn to alternative materials to meet their packaging needs. Among the MSMEs surveyed, many converters and retailers also mentioned the need for alternative materials as part of their response to plastic bans and fees.

Established plastic substitutes such as glass, aluminium, and paper, as well as novel material innovations, will be needed.[28] Where shown to have a lower environmental footprint, alternatives to conventional fossil-based plastics encompassing natural materials (e.g. bamboo) or (semi)synthetic bio-based polymers obtained from renewable sources could play an important role. Within the MSME space, start-ups and entrepreneurs have been crucial to introducing both plastic-based and non-plastic-based alternative materials, especially novel examples like algae-based products.[29,30,31] The treaty will further increase market demand for these innovations, creating new business and revenue opportunities for pioneering MSMEs.

Plastic reduction and substitution requires more labour per tonne of plastic replaced/reduced than recycling, equating to more jobs to be created in these markets (see Figure 2). Therefore, all MSMEs engaged who are working on alternative materials were positive about virgin plastic fees, citing price parity and increased competitiveness as the main benefits.

"[The treaty will make] *the price of our products more competitive with traditional plastics, so their adoption by processors and users would be easier*" (Alternative materials producer, Colombia).



Reuse and refill

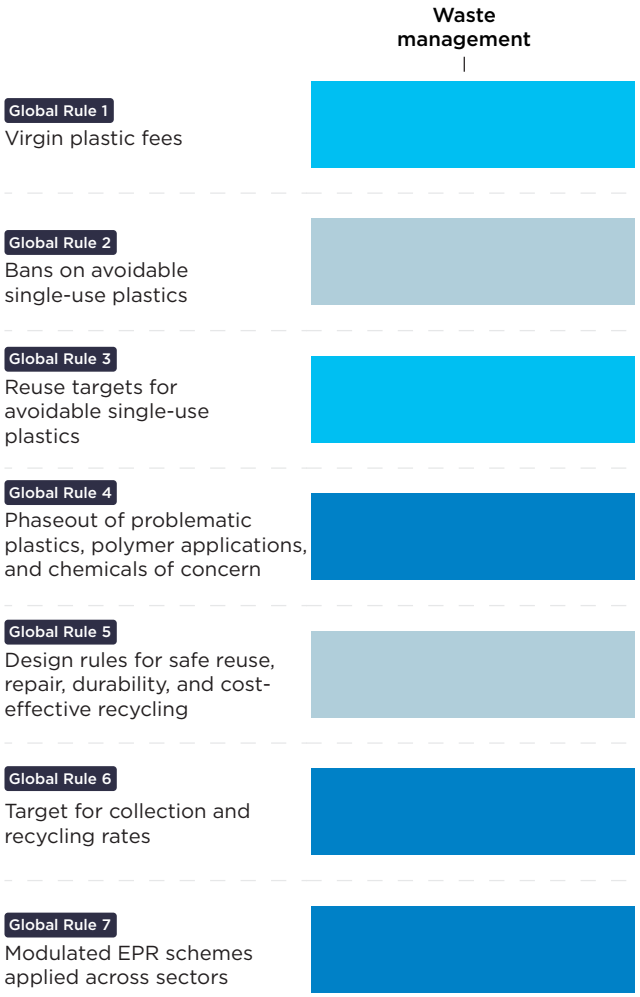
Moving from single use to reuse is essential to achieve an ambitious treaty and end plastic pollution. MSMEs are already leading the way in running both traditional and innovative new reuse and refill systems. However, in order to progress product-service delivery systems from pilot to scale and meet demand, businesses will require a strong regulatory push to leverage existing and shared infrastructure and collaborate across the value chain, including with MSMEs, especially in closed systems.

Targets for reuse and refill and single-use plastic bans (global rules 2 and 3) will help stimulate a transition away from single-use plastic towards product-service delivery systems. Additionally, virgin plastic fees, EPR, and design rules (global rules 1, 5, and 7) are projected to make reuse systems more cost-competitive and feasible for a wider range of applications than it is currently. A reuse operator explicitly noted: *"Increasing costs for virgin single-use plastics levels the playing field. Recyclates will be in more demand, further increasing the cost of single use. This should make reuse and refill solutions economically ever more relevant to the masses."* (Reuse company, Germany).

Consulted MSMEs who are engaged in refill and reuse activities were mostly positive about the anticipated treaty regulations, and all were in favour of reuse and refill targets. Globally, almost 80% of companies working on reuse and refill are entrepreneurial ventures or start-ups.[32] Though many of these MSMEs operate in North America and Europe, there are also strong examples from developing economies, especially those who have sprung up in response to plastic sachet pollution.[33]

Global rules are expected to benefit businesses in this sector[34] by *"clear[ing] up any doubt that reuse is part of the solution (...) and allow[ing] reuse to compete more equitably with single-use plastic"* (Reuse provider, Singapore). Ambitious reuse and refill targets will expand the market for product delivery solutions, estimated to be worth over USD 9 billion.[35] Scaling these systems will require significant investment in supporting services, including reverse logistics, physical and digital infrastructure, and increased participation from brands, retailers, and distributors. Reverse logistics, transport, and intermediate handling needed for reuse present a significant opportunity for local job creation and can benefit from integration with existing systems and infrastructure, for example the informal waste management sector which has extensive networks in place to recover and process materials.[36]

Most reuse and refill companies are MSMEs that are still in the pilot or start-up phase.[37] With market expansion and availability of finance, there is potential for these early-stage businesses to start scaling and for more established MSMEs to expand their businesses further to meet reuse targets. One small business engaged in scaling reuse noted that the effective implementation of reuse systems should focus initially on localised, closed systems, such as events and festivals, airports, government buildings, universities etc. This will demonstrate feasibility and allow for a better identification of further infrastructure requirements. This will address a current, widely acknowledged barrier to scale: almost all respondents (75%) mentioned the critical need for financing to facilitate growth: *"We have been asked to scale to other countries but we do not have the resources to do so"* (Reuse provider, Vietnam).



Recycling and waste management

While recycling alone won't be enough to end plastic pollution, it remains an important part of the solution pathway. Globally, waste management is an industry dominated by MSMEs and is the sector most expected to see social and economic improvements supported by ambitious treaty rules.

The waste management and recycling sector will need to be developed and upgraded to meet treaty targets on collection and recycling (global rule 6). Additionally, harmonised design for recycling guidelines and phaseouts of problematic chemicals (global rules 4 and 5) will lead to higher quality recycled feedstock and improve worker health and safety. Virgin plastic fees (global rule 1) could generate funds in addition to EPR (global rule 7) which can be funnelled to improvements in infrastructure and equipment as well as improving working conditions for the informal waste management sector.

Investment and infrastructure needs for waste management are predominantly concentrated in developing economies, and improvements should benefit those working in the sector here (see Figure 3): recyclers in Ghana and Peru cited the critical need to improve collection centres and equipment which currently have insufficient funds to upgrade. The treaty should also stabilise and strengthen the recycling and collection landscape, creating new employment opportunities to meet rising demands for quality recycled materials (see Figure 2).

MSME survey respondents operating across different scales and geographies — including a significant proportion of waste pickers, recyclers, technology developers, and marine plastic cleanup solutions — were overall positive about the treaty (69% positive, 31% neutral), with certain rules, including EPR and recycling and collection targets, being rated highly.

These targets, potentially in combination with virgin plastic fees, will increase the demand for recycled plastic, especially if the treaty specifies requirements for recycled content in packaging. The treaty will also lead to an increased demand for recycling services and technologies that can produce high quality recyclates[38] as a result of converters seeking quality recycled plastic materials for many different applications.

MSMEs in waste management will have opportunities to tap into new markets, with better forecasting, increased stability, and investment as a consequence of the common direction set by the harmonisation of global rules: *"We have the knowledge and capacity to scale, but access to sustainable scalable funding is the key barrier to large-scale growth"* (Waste management company, Indonesia). *"The most important* [enabler is] *financing lines that guarantee regular flows for waste management projects. Currently, in addition to the volume of financing being low, the vast majority is short-term and makes it difficult to implement infrastructure and change culture that depend on larger, long-term investments"* (Waste management support organisation, Global).

EPR systems and funding for waste management must be carefully designed to include and benefit

the informal waste sector. Otherwise, as noted by interview respondents, financial benefits may not reach, for example, waste pickers and collectors due to long and potentially corrupted value chains. As one advocacy group commented, *"The supply chain itself is conditioned to... take bits and pieces... anytime there's an opportunity to grab a penny or two, people are taking it"* (Support organisation, Latin America).

Improved design rules introduced by the treaty (global rule 5) can help tackle the large amount of unrecyclable, toxic, and low-value plastics that waste pickers and collectors must currently manage and sort. As one company noted:

"Problematic plastics are an issue for every recycler... and standardisation is key for a successful recycling industry" (Recycling company, Singapore).

Restrictions on fillers and additives will ensure more high quality material is available for recycling. The treaty can also address the inefficiencies in waste management cited by survey respondents. These often occur due to poor waste sorting by consumers and households, particularly in regions where waste management has negative social connotations and waste segregation is not the norm. Importantly, if the treaty leads to improvements in waste segregation, then the many MSMEs working in this sector would benefit in terms of higher productivity, better working conditions, and increased profitability.

BOX 2

Advocating for a just transition for the informal sector

Numerous organisations are calling for a just transition in the context of the UN plastics treaty, emphasising a fair and equitable approach to improving the livelihoods, health, and working conditions, in particular for informal waste workers. The International Alliance for Waste Pickers (IAWP), representing over 450,000 waste workers, specifically advocates for the legal recognition of informal waste work and mechanisms supporting incorporation as two fundamental principles to be included in the treaty.[39]

Importantly, IAWP calls for improvements to waste management and treaty implementation actions to involve the informal sector who have local and context-specific experience and who may also depend on waste management for their livelihoods. Leaders of the global waste picker movement also advocate strengthening upstream and product redesign solutions, making them circular and showing that it is possible to expand the rights of this group while reducing the environmental impact.

Many working in the informal sector do so by choice. Therefore, formalisation and legal recognition should not be forced but catered to the specific needs of workers. Integration of the informal sector into formal value chains should focus on minimising harmful job practices (e.g. health and safety risks, child labour) and maximising value (e.g. improving sorting practices, providing stable contracts).

Brazil and Colombia provide positive examples of how the informal sector can be supported through legislation. Brazil's solid waste policy implemented in 2022 makes explicit that any solution to meet EPR must include the informal sector, *"solidifying the idea that waste recyclers or waste pickers are at the forefront of environmental protection (...) and without them, Brazil would have significant waste issues and certainly couldn't meet their policy goals"* (Waste management company, Global). Colombia deployed similar mechanisms; an eight-step process that allows cooperatives to formalise into public service providers, benefitting waste workers and improving access to waste management services.

Opportunities for other sectors

Harmonisation of materials and quality standards and improvements in plastic recycling would also benefit **MSME converters** by improving access to more affordable and better-quality recycled feedstock, currently a challenge due to competition and price instability.[40] With the right technical and financial incentives, many converters should be able to modify their processes to accept recycled materials or alternative feedstocks.

Opportunities are likely to open up for the **finance sector** as treaty measures build confidence in future market conditions. Bans and restrictions on single-use and virgin plastic fees signal a change in market demand, provide a necessary push for investments towards alternatives, and reduce sector uncertainty. Half of the MSME respondents cited the critical need for financing in order to scale their operations as well the need for patient capital which would deprioritise the necessity of short-term returns.

In regard to bans on single-use plastics, one alternatives producer noted:

"Bans, even if implemented poorly, act as a good market signal that this industry will slowly become obsolete, discouraging the launch of new businesses and investments towards them; we saw this in 2016[41] and started rapidly transitioning." (Alternative materials producer, Sri Lanka).

A range of **supporting organisations** — from research and development, and technology developers, to software and systems builders — are needed to enable the successful implementation of an ambitious, fair, and effective plastics treaty. These roles can be filled by existing companies or new entrants and may also lead to increased market and employment opportunities for MSMEs.

3.2 Potential challenges

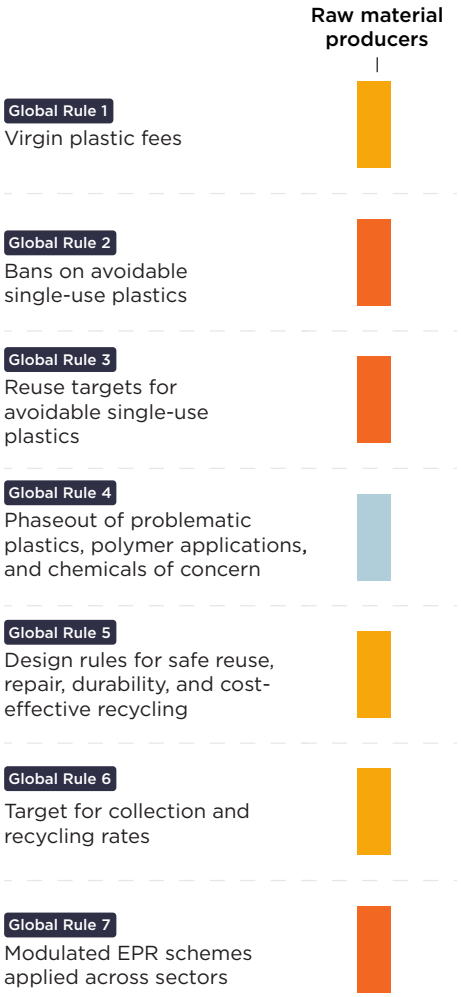
As the plastic industry implements the changes needed to end plastic pollution, short-term economic challenges are likely to emerge from the adoption of new legislation and regulatory measures as part of the implementation of the global rules. The two main challenges for MSMEs are:

1. **Reduced revenue and employment in sectors that currently rely on single-use virgin plastics**
2. **Transition costs for MSMEs to meet treaty requirements**

At present, the production costs of virgin plastic are kept low through subsidies that benefit the fossil fuel industry. The introduction of global rules leading to fees and other regulatory measures would be a step towards reflecting the true cost of virgin plastic production by internalising negative externalities related to climate change, biodiversity loss, waste, and pollution. In doing so, the price of virgin plastic as a raw material will likely increase, resulting in diminishing profit margins for those industries reliant on it for their business model. The subsequent increase in pricing for plastic users further down the value chain will stifle demand and diminish the market advantage currently held by virgin fossil-based plastic producers in particular.

Implementing the global rules will require increased investments and transition costs for many sectors (see Figure 3). Meeting new regulatory requirements may be more challenging for MSMEs; larger companies are able to allocate resources for technological upgrades and administrative requirements, including licensing fees, higher transaction costs, and the ability to appoint additional managers to ensure compliance.[42] These impacts are predicted to primarily affect raw material manufacturers, packaging converters, and those involved in retail and distribution, and can be mitigated via well designed treaty implementation.

Given the widespread concerns about the impacts of virgin plastic fees on both MSMEs and low-income households, it is important to note that current proposals are suggesting a fee of USD 60 to 90 per tonne. Even if passed on by producers to their customers, such a fee would increase the price of virgin plastics by only five to seven percent on average. As the cost of plastics typically constitutes a small fraction of the final product's price, the impact on consumer prices would become negligible even for the most price-sensitive consumers on very low incomes.[43]

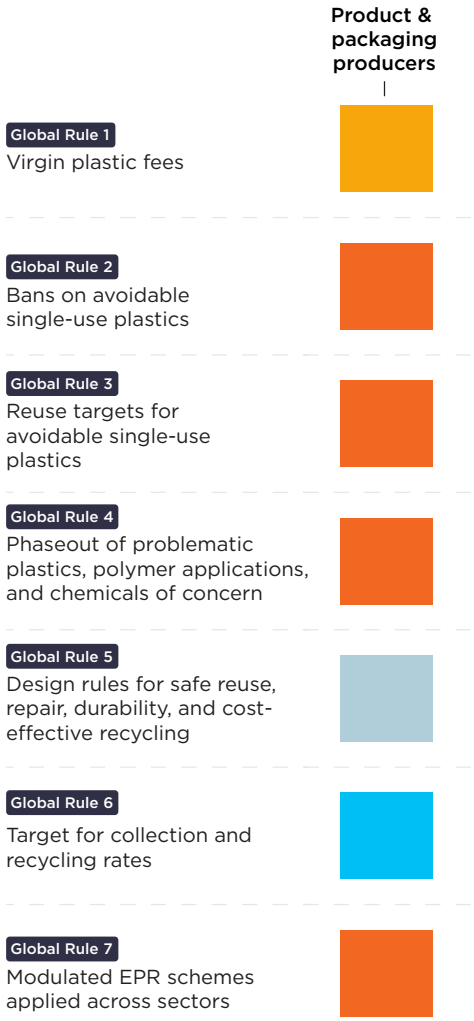


Raw material production

Raw material production is an industry that will be impacted by strong global rules. However, only a small fraction of companies in this industry are MSMEs.

Raw material producers will be adversely affected by global rules that are designed to reduce virgin plastic production such as fees on virgin plastics and EPR systems (global rules 1 and 7). In parallel, global rules that minimise demand for plastic products, including single-use plastic bans and reuse targets (global rules 2 and 3), will shrink demand for extraction and polymerisation at source. Additionally, global rules and legislation which define design parameters and limit the use of certain polymer types (global rules 4 and 5) will increase the complexity and transaction costs for producers but stimulate circular design solutions and increase product safety.

The *Towards Ending Plastic Pollution* modelling highlights that the virgin plastic production sector is expected to shrink due to a reduction in production of the raw materials used. Job losses will therefore be concentrated in this sector. Although the impacts on virgin plastic raw material production are negative, this section of the value chain is typically dominated by larger companies — which have the resources to adapt — with MSMEs less affected. With the support recommended in the next section, job losses can be offset by upskilling and deployment in the new industries that arise.



Plastic packaging manufacturing and conversion

MSME packaging converters will see market reductions and cost increases due to global rules and will need time to adapt to regulation.

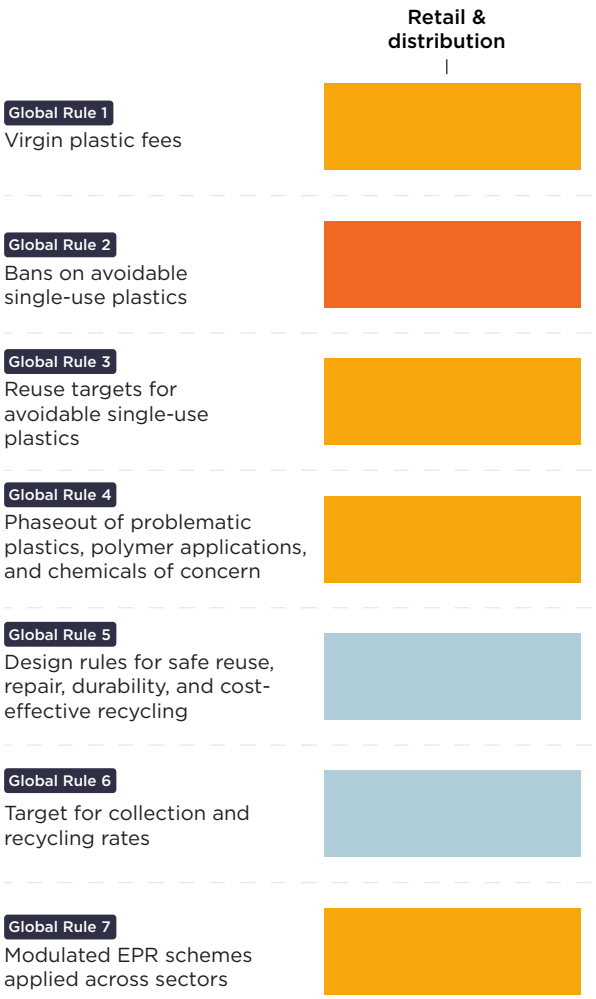
Many MSMEs that are involved in plastic packaging manufacturing will be directly impacted by single-use plastic bans (global rule 2) and new technical, design, and health and safety requirements (global rules 4 and 5). Reuse targets (global rule 3) and a general shift towards reverse logistics will also shrink the currently dominant packaging market for single-use plastics.

EPR and virgin plastic fees (global rules 1 and 7) will also increase costs of using plastics for converters who often depend on low costs of raw materials and production and have very small profit margins. The *Towards Ending Plastic Pollution* modelling also shows decreasing job opportunities and lower economic activity in the conversion sector. Among this report's survey respondents, 75% of converter MSMEs anticipated challenges as a result of regulation on plastics production, mainly due to increasing costs. However, respondents also noted that they anticipated positive outcomes of the treaty, such as: *"Alignment on mono material and acceptable plastic types would help our business case"* (Converter, United Kingdom).

MSMEs represent a significant portion of packaging manufacturing, particularly in developing markets, such as South Asia, Southeast Asia, and Africa, where raw materials are imported by a range of converters in order to manufacture packaging and other goods. For example, the Bangladeshi plastic industry consists of around 3,000 companies, 98% of which are small- and medium-sized enterprises.[44] Virgin plastic fees will increase the cost of importing raw materials already carried by MSMEs. In a price sensitive industry with proportionately fractional margins, cost increases, bans, and other regulations will have short-term negative impacts unless time is given for converters to adapt and adopt substitutes.

"An immediate ban will put us out of business overnight, but with the right timeline to adapt, and some guidance on available alternative materials, we can start converting products for a more circular economy, if that is what our customers want to pay for" (Converter, Sri Lanka).

Other MSMEs cited challenges with accessing high quality, affordable recycled plastic as a raw material, noting high demand and costs.[45] Acknowledging the environmental impact of plastic, one converter in India expressed the need for government support to enable a business shift to recycled materials. Despite these challenges, a quarter of the converter MSMEs contacted were positive about the treaty. Those who have already transitioned to using recycled plastic inputs particularly welcomed regulatory changes that create a level playing field for their business.



Retail and distribution

As a result of restrictions and phaseouts, retailers and distributors will need support to adapt to changing costs in the transition away from single-use plastic packaging.

MSMEs are key retailers and distributors, especially when considering the role of street vendors in developing economies. A ban on single-use plastic packaging (global rule 2), which is currently cheap and easily accessible for a variety of products and applications, will directly affect this industry. Retail and distribution may also be affected by cost increases due to virgin plastic fees, EPR, and phaseouts of problematic plastics (global rules 1, 4, and 7). Investments needed to move towards reuse and refill systems (global rule 3) may also lead to additional short-term operational and capital expenditure for this industry.

Modelling studies have yet to take into account the diversity of organisations that sit within the retail and distribution sector that rely on plastic packaging, encompassing hotels, restaurants, catering, supermarkets, markets, food stalls, and street vendors. Of those surveyed, 40% of the retail and distribution MSMEs engaged were negative or neutral about the treaty. Often operating with low profit margins and limited access to capital, these businesses may be particularly affected by bans and price increases. Their lack of capacity to absorb price shocks means that, until the market stabilises, retail and distribution MSMEs may struggle to keep

up with the transition pace of large corporations whose margins can better allow them to absorb increased prices and therefore offer a similar user experience to consumers accustomed to cheap, convenient plastic packaging.

Many small retailers sell to customers based on convenience as they walk or drive by a stand. In developing countries, single-use plastic packaging bans are often implemented with limited notice to industry and without ensuring that viable alternatives are in place in the same market.[46] A study in Kenya on the effects of single-use plastic bag bans found that when customers had to remember to bring reusable bags, they skipped making small purchases at roadside stands, impacting street vendor revenues.[47]

The above example demonstrates how MSMEs often lack visibility of upcoming policy changes and need to adapt at very short notice to new regulations affecting single-use plastics that their business might depend on. As a result, shortcuts to compliance can sometimes emerge: for example, increasing micron levels or adding filler to meet thickness requirements on bags to avoid compromising competitive pricing. Engagement with MSMEs in Latin America and South Asia suggests that in certain regions, this can result in finding alternate avenues to sell or buy banned goods such as on black markets or in neighbouring states or countries where regulations are not implemented. Therefore, it is crucial to ensure that before single-use plastic bans are implemented affordable product delivery options are available and easily accessible to MSMEs to avoid these negative outcomes.[48]

In parallel, MSME engagement for this report revealed trepidation to transition due to a lack of guidance around viable alternatives. Ensuring MSMEs can update their product delivery systems to meet refill and reuse targets and address the costs of eliminating or substituting single-use plastics with alternatives will require significant investment in the necessary infrastructure. While reuse is more economical in the long run,[49] the short-term costs and operational expenditures may be prohibitive, especially for the smallest retailers.

An interviewee noted:

"Overall, the absence of plastic packaging would present numerous challenges for our business, requiring us to explore alternative packaging solutions while addressing concerns related to product protection, shelf life, hygiene, convenience, cost, and regulatory compliance. Addressing these [challenges] will require careful planning, collaboration with stakeholders, and a commitment to innovation and continuous improvement in our packaging strategies and practices." (Cafe manager, UAE).

Challenges for other sectors

Global rules, particularly bans and transitions to alternative materials, will also impact MSMEs further down the plastics value chain, including **recycling companies** who currently rely on single-use plastic waste for feedstocks.

However, while acknowledging this challenge, MSMEs also reported seeing the opportunities for adaptation. As one recycling start-up based in Southeast Asia responded:

"Although our current business model focuses on the solution for such low value and single-use plastics, we highly support the phasing out of single-use plastics towards alternative materials and refill options. Our business model can adapt to other feedstock streams or solutions based on alternative materials." (Reform, Singapore).

Some responses suggested recycling targets could be detrimental for **alternatives producers**, while some MSMEs vocalised similar concerns regarding reuse targets. However, it is clear that without a significant shift towards reuse, worldwide virgin plastic use in packaging is unlikely to decrease below today's levels before 2050.

04

04. Recommendations for MSME support measures

Our analysis reinforces that ambitious global rules, crucial to end plastic pollution, are supported by MSMEs. However, in order to enable the successful implementation of the treaty at all scales of business, these global rules will need a suite of supporting policy considerations and measures.

MSMEs need specific support to overcome key challenges and harness the opportunities presented by the transformation of the plastics industry — including guardrails, incentives, support, and phased outcomes.

To ensure successful implementation, the below measures should be considered:[50]

1. Differentiated implementation timelines
2. Knowledge and technology transfer
3. Vocational training and education
4. Flexible financial instruments

4.1 Differentiated implementation timelines

A differentiated transition timeline will enable MSMEs to adapt to and implement ambitious global rules.

Treaty considerations

MSMEs operate with limited access to human, financial, and technical capital, making them less resilient to sudden changes. An ambitious treaty should agree on common globally binding rules and, at the same time, provide differentiated implementation timelines which build in buffer time for MSMEs to adapt to new regulatory requirements. Differentiated timelines for implementation by the MSMEs can catalyse necessary innovation and allow for supply chain stabilisation, infrastructure improvements, and price reductions for technology and processes driven by economies of scale from earlier implementation by large corporations.

A quarter of MSMEs who responded to the survey were not aware of the global plastics treaty and many reported limited knowledge on the process. Unlike large corporations, MSMEs do not have legal or risk analysis teams who can decode upcoming regulations on their behalf. Many respondents noted that they are not planning ahead in anticipation of plastic treaty rules because the consideration of long-term regulatory changes is often out of scope for smaller businesses.

"The time horizon is so long as to be irrelevant for our business. Major clients are unlikely to make changes to their purchasing and use of packaging in the near term because of this treaty specifically, and as an SME we have to prioritise work that is profitable in the next 2-3 years." (Reuse company, USA).

MSMEs with low production capital and high competition will struggle with regulations that lead to cost increases, so staggered implementation paired with support will allow them to meet requirements at a feasible pace. Other organisations engaging with the sector have supported phased implementation and adaptation timelines, including the International Chamber of Commerce (ICC),[52] who conducted engagement with MSMEs in Africa, Asia, and Latin America during the plastics treaty negotiations; the Center for International Environmental Law (CIEL);[53] and Tearfund.[54]

Transition periods should be included for the implementation of new regulations, but also to allow for the transition away from existing subsidies or incentives that support current linear plastic production systems.[55] Implementation and enforcement timelines must be clearly defined and communicated to all relevant stakeholders, for example, through national action plans, stakeholder dialogues at the national level, as well as communication and awareness campaigns. This will give MSMEs time to plan necessary investments or adjust their supply chain to comply with the global rules — for example, it would allow MSMEs to access high-quality recycled or alternative material feedstocks at a competitive price in order to transform their business models.

MSME support mechanisms

The following recommendations are guardrails that can be applied on a national level or as part of treaty implementation:

- Implement phased regulations, initially aimed at large corporations, while offering temporary exemptions and support for MSMEs to comply based on turnover, employee numbers, or rate of plastic consumption
- Tailor targets and responsibilities to the size of a company e.g. define reuse or recycling targets as a percentage of a company's plastic output or footprint and/or differentiate virgin plastics and EPR fees accordingly
- Ensure priority access and funding mechanisms for MSMEs to purchase recycled or alternative raw materials
- Set mandated targets based on the availability of alternative materials and infrastructure to achieve targets, e.g. ensuring availability of cost-effective alternatives before banning single-use plastics
- Fast track licensing and permits for businesses reducing plastic pollution and workers in the informal recycling and waste management sector.

BOX 3

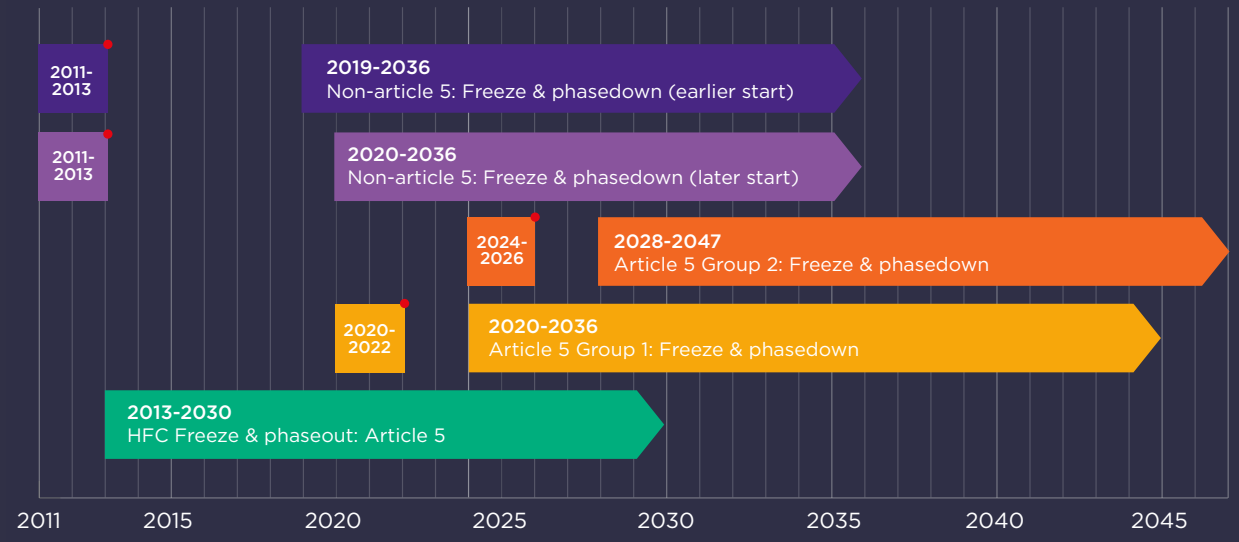
Differentiated timelines in multilateral environmental agreements (MEAs)

Adopted in 1987, the Montreal Protocol followed a step-wise approach of increasing scope and stringency of regulations on ozone-depleting substances (ODS). The protocol defined binding and measurable commitments yet established differentiated responsibilities for different categories of countries and substances.

Much of the success of the protocol is attributed to the phased approach that allowed for financing and technology to flow from developed to developing countries, supporting innovation and technology improvements. In response to changing scientific understanding, and based on the success of phased ODS reductions, the protocol adopted the Kigali Amendment for global phasedowns on hydrofluorocarbons (HFCs).[51]

MSMEs would benefit from transparency on relevant timelines and a similar step-wise approach, for example to implementing restrictions and phaseouts in the plastics treaty.

Figure 6: The path from Kigali, HFC phasedown timeline



Legend

- Baseline years

Country groups

The Montreal Protocol Parties are split into four Kigali Amendment groups:

1. **Article 5, group 1:** The majority of article 5 parties
2. **Article 5, group 2:** Bahrain, India, Iran, Iraq, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia, UAE
3. **Non-article 5, earlier start:** Most non-article 5 countries
4. **Non-Article 5, later start:** Belarus, Russian Federation, Kazakhstan, Tajikistan, Uzbekistan

4.2 Knowledge and technology transfer

Identifying knowledge and technology gaps, developing pathways for overcoming them, and establishing mechanisms for the dedicated upskilling and upgrading of MSMEs will allow them to implement solutions to end plastic pollution in line with the treaty requirements.

Treaty considerations

Technical support will be critical for developing economies and communities to successfully implement the global rules defined by the treaty.[58] Although many of the solutions, services, and entities already exist to achieve the requirements of an ambitious treaty, MSMEs often lack access to the technology and equipment needed to leverage these. For example, technology transfer will be needed to upgrade processes in developing countries to meet treaty requirements, such as enhancing the capacity of material processing and testing facilities to ensure recycled material quality. These technologies will also need to be context-dependent and localised, as particular alternative materials or substitute technologies may be more relevant for certain regions and cultures than others, for example, prioritising investment in moulded natural fibres and natural materials that have traditional applications.[59]

A third (33%) of consulted MSMEs mentioned the need for technology support and knowledge assets specifically directed to and accessible by organisations at the MSME level; this was also reiterated in the regional dialogue sessions organised by the ICC. One respondent from Chile stated that recycling and waste management *"solutions can come from the community itself"*, as long as the machines needed were provided and shared among the community.

Recognising regional and sector-specific needs, the plastics treaty should include a clear mandate to develop replicable and decentralised technology transfer mechanisms and a dedicated capacity building process for MSMEs.[60]

MSME support mechanisms

The following recommendations aim to promote an efficient and rapid transfer of knowledge and technology to allow MSMEs to adapt in a timely manner. They can be applied on a national or even subnational level as part of the treaty implementation:

- Identify existing systems (e.g. informal waste management) and create technology transfer plans that involve and support existing networks
- Create regional networks to facilitate technology transfer tailored to local contexts. A way of disbursing funding can be modelled after the ozone regional networks in Montreal Protocol
- Ensure that parties to the plastics treaty are committed to channelling sufficient funding towards technology transfer
- Identify and prioritise addressing technology gaps that are critical to meeting treaty requirements, e.g. material quality testing facilities, monitoring technologies, etc.
- Establish public-private partnerships (PPPs) to facilitate MSME access to critical technology and infrastructure
- Pool resources — this is especially necessary for the transition to reuse/refill in order to create shared infrastructure advantages[63]
- Earmark R&D for the development and acceleration of alternative materials
- Fast track permits and licensing processes for MSMEs.

BOX 4

Technology transfer in multilateral environmental agreements (MEAs)

The Minamata Convention, Stockholm Convention, and Montreal Protocol include knowledge and technology transfer elements with the goal of assisting developing economies in reaching their targets to combat mercury pollution and reduce pollutant chemicals and ozone-depleting substances, for example. One mechanism for facilitating technology transfer is national technology needs assessments (TNAs), which have been introduced by the United Nations Framework Convention on Climate Change (UNFCCC) as a tool that states can use to identify their technical barriers and seek support.[56]

In the Montreal Protocol, a multilateral fund was developed to cover the incremental costs stemming from technology transfer. Regional centres deployed money from this fund to cover the access to technologies at a local level. A review of MEAs found that the dedicated financing of the Montreal Protocol was critical to the success of capacity building and technology transfers, while other MEAs fell short on delivering this due to lack of funding.[57]

MSMEs would benefit in particular from specific provisions in the plastics treaty to support technology needs assessments and capacity building.

4.3 Vocational training and education

The changes in employment brought about by an ambitious treaty will require MSMEs across the plastics value chain to upskill, reskill, and educate their workforces.

Treaty considerations

The transition away from plastic-intensive production and consumption systems will lead to reduced employment in some sectors and industries, and new job opportunities in others. Retraining or employee displacement programmes should be used to support workers during the transition period to mitigate unnecessary impacts on livelihoods.[66,67] Additionally, professional upskilling in specialised areas such as material science, packaging technology, and engineering — including expanded vocational training and education — will be needed for the necessary shift in employment towards circular business models, alternative materials, and new delivery-systems.[68]

During the transition, employee attrition and reduction in employment opportunities will be disproportionately felt by MSMEs. Many consulted MSMEs cited a lack of skilled staff as a barrier to meeting current and future regulations. Creating training programmes for MSMEs will need to account for differences in literacy, digital access, and affordability as well as time availability. This is especially critical for the inclusion of marginalised or informal workers, such as waste pickers.

Local and context specific communication channels — such as industry associations, local advocacy organisations, and in-person visits — can help reach all types of MSMEs. For example, a training programme in Latin America by the Inclusive Waste Recycling Consortium (iWrc)[69] which uses interactive videos delivered to smartphones to communicate key information on health, safety, and supply chain guidelines, information on cooperatives, and certificates has been successfully deployed to informal waste workers at very low cost.

MSME support mechanisms

The following recommendations should be considered to assist knowledge transfer of best practice and upskill workforces for the transition. They can be implemented by national entities or as part of multilateral development programmes:

- Organise national and regional support initiatives that engage MSMEs in educational programmes to highlight in a locally relevant context the value of transforming their business models to capture opportunities emerging from the treaty (in the short term) and adaptation needs (in the long term)
- Establish innovation incubator programmes for start-ups in areas including new material applications, refill and reuse systems, and technological improvements in collection, reuse, and recycling
- Provide access to legal advice and support in preparing for regulations, including keeping MSMEs informed about upcoming regulations
- Create accessible knowledge platforms that allow for the acceleration, professionalisation, and streamlining of existing businesses to scale and meet the supply gaps created by new regulations
- Develop retraining programmes that provide the skills necessary to access new job opportunities, especially targeting areas where job losses are expected
- Develop national and localised employment transition plans catering to national and regional contexts.

BOX 5

Vocational training and employment transitions in multilateral environmental agreements (MEAs)

During the monitoring and assessment of the Montreal Protocol, a report was produced exploring the lessons learned from engaging with MSMEs. The report highlighted that a *"large knowledge deficit exists in the majority of SMEs"*.[64] Best practices for training included in-person visits to businesses, creating positive incentives, and recognising that providing equipment alone was not enough and needed to be paired with effective capacity building.

Under the Basel Convention, training was deployed by regional centres in collaboration with the private sector to meet goals around the environmentally sound management of waste. Lessons in employment transitions can also be taken from the energy transition, which was partially spurred on by the Kyoto Protocol and Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC). For example, with increased coal mine closures, retraining programmes for green jobs and opportunities needed to be introduced to support coal miners.[65] During this employment shift it became clear that geographical availability of work was a key challenge. It is important to note that the geographical spread and green job opportunities are not always available in the same location as job losses, therefore relocation programmes may need to be embedded in employment transition mechanisms.

4.4 Flexible financial instruments

A range of flexible financial mechanisms and investment ecosystems will be needed to support MSMEs in their transition, including public investments, blended finance, subsidies, demand-led finance, and loan schemes targeting small businesses.

Treaty considerations

Access to flexible financing was the most critical support mechanism mentioned by MSMEs engaged in this study. Almost 50% referenced a specific need for financial support in order to meet new regulatory requirements expected to be triggered by an ambitious global plastics treaty. Institutional capital is currently not ready to address the level of support MSMEs need to successfully implement global rules. To ensure an ambitious treaty, private sector engagement and innovative financial tools will be critical.[73,74]

Blended finance models can provide patient capital for the infrastructure and equipment needed by sectors traditionally deemed as high risk and slow return, such as recycling and waste management. EPR and virgin plastic fees would allow public spending to further de-risk investments in the space, sending positive signals that encourage and catalyse further investments by the private sector. In addition, national financial institutions and development banks can reorient their loan structure through risk guarantee programmes focused on environmental objectives.[75]

Other innovative instruments, such as demand-led financing, which invests based on demand for the company's products and not on assets, or outcomes-based financing, which focuses on supporting measurable targets such as waste reduction, should be explored. Flexible financing schemes for the 'missing middle' are also needed, recognising that medium-sized enterprises producing alternative material packaging or offering product delivery models have the ability to scale due to increased demand, but not the means to do so.
In many developing economies, MSMEs are not aware of the financial options available to them or how to present a business case that is attractive to investors. Furthermore, in most developing economies where a circular economy has high job creation potential, many workers or businesses may be informal, which presents challenges for formal investment. In addition, capital is currently typically sized for large companies but MSMEs lack appropriate ticket sizes for their smaller loans or investments.[76] Support and guidance on investment readiness should be provided to MSMEs, and loan schemes should target sectors contributing or transitioning to the circular economy.

Government efforts to recognise and engage with these sectors can include incorporating development finance into blended finance models to de-risk investments, investing alongside the private sector, and developing public funds to be funnelled towards these MSMEs. This will open up further opportunities to catalyse the circular economy transition by directing the capital needed to the right areas.

Informal workers may not have knowledge of or be eligible to access traditional or governmental financing, or the support needed to adapt to new plastic regulations. In order to support a just transition for the informal sector, EPR systems particularly need to be specifically designed to provide new sources of funding for plastic waste collection and processing, otherwise the fees collected for the operation of these systems may never reach the millions of informal waste pickers working on the lowest levels of the value chain.

MSME support mechanisms

The following recommendations should be considered to help MSMEs access and activate the funding they need to implement solutions to end plastic pollution:

- National financial institutions and development banks should create accessible capital, loans, and grants sized for micro and small businesses (e.g. loans under USD 100,000)[77]
- National financial institutions and development banks should create dedicated capital and investments for medium businesses and start-ups looking to scale (e.g. for turnover between USD 10-15 million)[78]
- Establish tax exemptions, subsidies, and incentives for MSMEs active e.g. in alternative materials, refill and reuse, waste management
- Prioritise MSMEs who provide products and services to reduce plastic pollution in public procurement contracts[79]
- Create transparency about how virgin plastic fees and/or EPR fees would be collected and spent to help e.g. MSMEs to redesign their packaging and achieve their recycling targets, with provisions to ensure participation and inclusion for informal waste workers.[80]

BOX 6

Financial mechanisms in multilateral environmental agreements (MEAs)

A variety of financial support mechanisms have been used in MEAs.[70] The Montreal Protocol developed the Multilateral Fund for the Implementation of the Montreal Protocol — widely considered the most successful multilateral fund. The fund was financed by developed countries in order to support developing countries. Lessons learned include involving intermediaries to disburse funding who are knowledgeable about local conditions and can ensure local ownership of projects and funds, as well as utilising a variety of financial mechanisms.[71] A study on the impacts of Montreal Protocol fund on SMEs concluded that, in India, firms who received support to transition to non-ODS substitutes of ozone-depleting substances (ODS) had better business performance than those who did not. However, the same study found that 'undue preference' was given to larger firms, leading to negative outcomes for smaller businesses.

Other examples of mechanisms for MEA funding include the Global Environmental Facility (GEF) and the Green Climate Fund (GCF). The GEF is a multi-billion dollar fund which works to maximise impact by leveraging funding, developing blended finance programmes, and supporting policy coherence. The GEF supports multiple MEAs such as the Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC), and the United Nations Convention to Combat Desertification (UNCCD). The GCF is a financial mechanism within the UNFCCC aimed at assisting developing countries in adaptation and mitigation practices to combat climate change. In the GCF governing instrument, there is a focus on private sector financing that includes and empowers local actors, including small- and medium-sized enterprises and local financial intermediaries.[72]

05

Acknowledgments

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Contributing Organisations

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4Revs, Algramo, ALPAL, AMZ Consultores Ltda, APIPLAST Circular Economy Committee, Apruri Industries Pvt Ltd, Asociación Mutual De Recuperadores Del Medio Ambiente, Asociación Recicla Latam, Association Zéro Déchet Sénégal, BioBTX, BIOCERR, Blue Cycle, BOXS AG, BVRio Institute, Byfusion, Cadel Recycling, Circular Corp SAC BIC, CIRCULAR LAB, Circulate Capital, Clean Seas Solutions, Clean-Seas Inc., CLUBZERØ, Colombier, Conceptos Plásticos, Defaratt Centre de Recyclage, Eco360, ECOPACKPERU, Ecorica.inc, Ellipsis Earth Ltd, Enterprise Hahatay, Environmental Enhancements Inc., FeelGood EcoNurture LLP, Flexi-Hex, Frugal Pack, Fuego del Sol (FdS), Fundación De Recicladores Ambientales De Palomino, Fundacion Huella Ambiental, Genossenschaft Deutscher Brunnen eG, GIE RECYCLOR, Ginada, Glassia Water, Green Life Generation, Griya Luhu, INDELTRO, Japanese International Cooperation Agency, Khaalisisi, LE FOURGON, Life Out Of Plastic SAC, Muuse, Natupla, Neptune Ecofriends Recyclers, New Gen Surgical, Nomad Plastic, Outlander Materials, Pinovo AS, Plasticiclo, Plastics For Change, Proton Enviro, Pulpworks, Quantafuel, Recicloplast, RECUP PLASTIK, Recyglo, Recyl'or, ReForm Plastic, Refrastructure Foundation, ReKart, Resynergy, Returnity, Saathi, SEA ME GmbH, SEADS - Sea Defence Solutions, Seale Energy, Searious Business, Second Life, SetTIC, Seven Clean Seas, Sinba, Siskowet Enterprises LLC, Sonaged SA, Spilltech, The Plastic Collective, Tide, TONTOTON, Tri-ecomvelo Pty Ltd, Triple Benefit, Vida Sin Plástico Perú, Waste2Wear, Waste4Change, Woolcool, YES Innovation

About

Earth Action — A think-and-do tank, Earth Action catalyses positive environmental change through innovative solutions and collective action. The team identifies and addresses critical sustainability knowledge gaps by developing the data and applying insights to create research trusted by scientists and actionable by all. Earth Action pioneered methodologies for assessing corporate plastic footprints and global plastic pollution metrics. Profits are channelled into developing science and broad-stakeholder initiatives, living a commitment to building a world that balances people, planet, and profit.

For contact details and further information, please visit our website at www.e-a.earth

The Ellen MacArthur Foundation — An international charity that develops and promotes the circular economy in order to tackle some of the biggest challenges of our time, such as climate change, biodiversity loss, waste, and pollution. EMF works with our network of private and public sector decision makers, as well as academia, to build capacity, explore collaborative opportunities, and design and develop circular economy initiatives and solutions. Increasingly based on renewable energy, a circular economy is driven by design to eliminate waste, circulate products and materials, and regenerate nature, to create resilience and prosperity for business, the environment, and society.

For contact details and further information, please visit our website at: www.ellenmacarthurfoundation.org

WWF — One of the world's largest and most experienced independent conservation organisations, with over five million supporters and a global network active in more than 100 countries. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature by conserving the world's biological diversity, ensuring the sustainable use of renewable natural resources, and promoting the reduction of pollution and wasteful consumption.

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Appendix: Study Approach

Study approach

To better understand the MSME perspective, the study created MSME archetypes in the plastic packaging value chain, identified seven global rules most relevant to MSMEs, and engaged directly with MSMEs across sectors globally to collect their perspectives on the selected global rules and derive recommendations (see Figure 7).

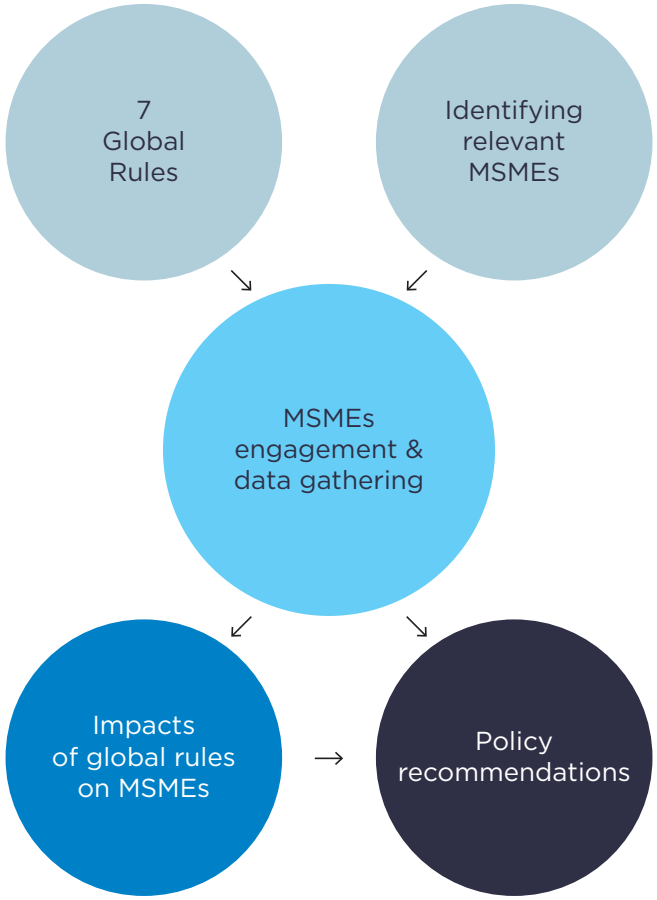

Figure 7: Study approach

MSME archetypes

The study defined seven enterprise archetypes along the plastic packaging value chain and relevant supporting industries (see Figure 1). Enterprise was broadly defined to include all economic units regardless of their formal registration status, including self-employed individuals, family businesses, cooperatives, and agricultural units. Figure 8 provides examples of the diversity of enterprise types engaged with for the study.

The study opted for a broad definition of enterprise because of the crucial role informal microenterprises, such as waste pickers and street vendors, play in the plastics packaging value chain. The ILO estimates that 61.2% of the world's employed population are in the informal economy, of which 93% are in emerging and developing countries.[81] Hence, informal microenterprises in the plastics packaging value chain can be an important source of income. Global statistics estimate that 19 to 24 million people are engaged in waste picking activities, of which only 4 million are formally employed.[82] While global statistics for street vendors are not available, national statistics show that street vendors and market traders represent 29% of the total urban employment in Ghana, 6% of total urban employment in Thailand and Mexico, and 11% of non-agricultural urban employment outside of Lima in Peru.[83]

Archetype	Example MSME	Region	Size
Raw material producer	Not included in study sample (predominantly multinational companies)	-	-
Plastic packaging producer	(anonymous): Converter making food packaging from polystyrene and polypropylene.	South America	Micro
Retail and distribution	(anonymous): Wholesaler distributing spices to small market vendors and operating their own wholesale market stall.	Asia	Small
Waste management	SinBa – Circ: Waste collection company working with recycling cooperative for household collection.	South America	Small
Alternative materials	Outlander Materials: Biotech company using beer waste to create compostable, non-plastic, and novel materials.	Europe	Micro
Reuse and refill	Muuse: Smart system of reusable returnable packaging for corporates, cafes, and individuals.	Asia and North America	Micro
Supporting organisations	Circulate Capital: Investment management firm investing in solutions for the ocean plastic crisis in South and Southeast Asia.	Asia	Small

Figure 8: Example MSMEs from different regions and archetypes engaged with for this report

Selection of global rules relevant to MSMEs

To analyse the impact of the plastics treaty on MSMEs, the study used the global policy interventions modelled in *Towards Ending Plastic Pollution by 2040*,[84] a report commissioned by the Nordic Council of Ministers in 2023. The fifteen global policy interventions proposed in the report were narrowed down to seven (see Figure 9) by prioritising those most relevant to MSMEs and considering what has been discussed in the context of the zero draft for the plastics treaty.

Policy	Description from *Towards Ending Plastic Pollution by 2040*[85]
Global Rule 1 **Virgin plastic fees to fund solutions across the plastic lifecycle**	Virgin plastic fees to fund solutions across the plastic lifecycle could help to reduce the volume of virgin plastics in the system. This policy would level the playing field, internalise externalities, and incentivise shifts away from virgin plastic through fees to virgin plastic volumes entering the system, calibrated by region and increasing progressively.
Global Rule 2 **Bans on avoidable single-use plastics**	Bans on avoidable single-use plastics would shift certain packaging applications to safe multi-serve formats, reuse or refill alternatives; or replace plastic for other materials with superior environmental performance. These bans are applied to a broad range of applications such as single-use plastic bags; food service disposables and takeaway items; pots, tubs, and trays for fruit and vegetables; plastics in logistics and business-to-business applications (e.g., films to wrap pallets, e-commerce plastics); and multi-material/multi-layer sachets where better alternatives exist.
Global Rule 3 **Reuse targets for avoidable single-use plastics**	Reuse targets for avoidable single-use plastics would promote the scaling of new delivery models that replace single-use plastic packaging with alternatives that are used across multiple consumption cycles. Modelled targets use similar ranges to those reuse targets discussed under EU Packaging and Packaging Waste Regulation, for example, assuming reuse targets for 2040 between 15% and 25% for beverages containers (e.g. sodas, water, alcohol) and household products (e.g. cleaning, personal care).
Global Rule 4 **Phaseout of problematic plastics, polymer applications, and chemicals of concern**	Problematic plastic products, polymer applications, and chemicals of concern would be phased-out according to common global criteria encompassing all those that create hazardous conditions, pose a risk to human health or the environment, impede safe reuse or recycling, or have a high likelihood of releasing into the environment. For example, for several groups of chemicals used in plastic products (e.g. bisphenols, flame retardants, and phthalates), there is evidence pointing to human health hazards.
Global Rule 5 **Design rules for reuse, repair, durability, and cost-effective recycling of packaging and consumer goods**	Design rules for safe reuse, durability, repair, and cost-effective recycling in local contexts. These rules should ensure that plastic products in all sectors of the economy are designed for safe reuse and recycling. The rules would differ by plastic application. For example, for packaging, the global-rules scenario assumes improvements in sorting and recyclability due to better designs following the Golden Design Rules[86], along with local calibrations that reflect differences in systems and infrastructure.
Global Rule 6 **Targets for collection and recycling rates**	Targets for collection and recycling rates would seek to maximise collection of plastic waste and increase the supply of recycled plastics. The global-rules scenario would result in waste collection targets of more than 95% across all geographies for all sectors considered. In low- and middle-income countries, substantial development and resources would be needed to reach these levels.
Global Rule 7 **Extended Producer Responsibility (EPR) systems applied across sectors**	EPR systems are applied across all sectors, calibrated by region and product, to promote better designs and fund solutions across the plastic lifecycle. Fees should be defined to account for the costs of infrastructure in the local context, calibrated by application, and should operate on a net-cost basis, to incentivise better designs and penalise the use of hard-to-recycle materials or designs. The fees modelled vary per product and region, but range from USD 300 per tonne to USD 1,000 per tonne by 2040, starting in 2025 and increasing gradually.

Figure 9: Towards Ending Plastic Pollution by 2040 (TEPP) policies used for study

Technical analysis

Each rule was modelled for its impact on the global economy and on reducing plastic pollution in the report *Towards Ending Plastic Pollution by 2040*.[87] Our technical analysis further segmented and interrogated data from the quantitative modelling in this report[88] — which models the economic impact of ambitious rules by comparing an ambitious global-rules scenario to a business-as-usual scenario[89] up to 2040 — to estimate employment and financial flows by sector and understand the specific implications for MSMEs. This data was further interrogated to provide qualitative analysis of their impact on MSMEs.

MSME engagement

MSMEs in the plastic packaging and alternatives value chain from around the world were targeted in a three-pronged approach. An online survey in English and Spanish was circulated to over 300 MSMEs, with valid responses from 69 company representatives. Additionally, online interviews and focus groups were held with companies from across the world. Finally, to ensure the inclusion of views from micro and small enterprises missing from online engagement, in-person interviews were conducted in Peru, India (Maharashtra State), Sri Lanka, Nepal, Ghana, Senegal, and the United Arab Emirates.

In total, 132 MSMEs provided insights on how their business would be affected by a plastics treaty and consequent regulatory changes. The respondents spanned geographies, value chain, and size classes of MSMEs, providing a holistic perspective of the opportunities and challenges that globally harmonised regulation could bring. The report presents the analysis of the combined qualitative and quantitative data collected.

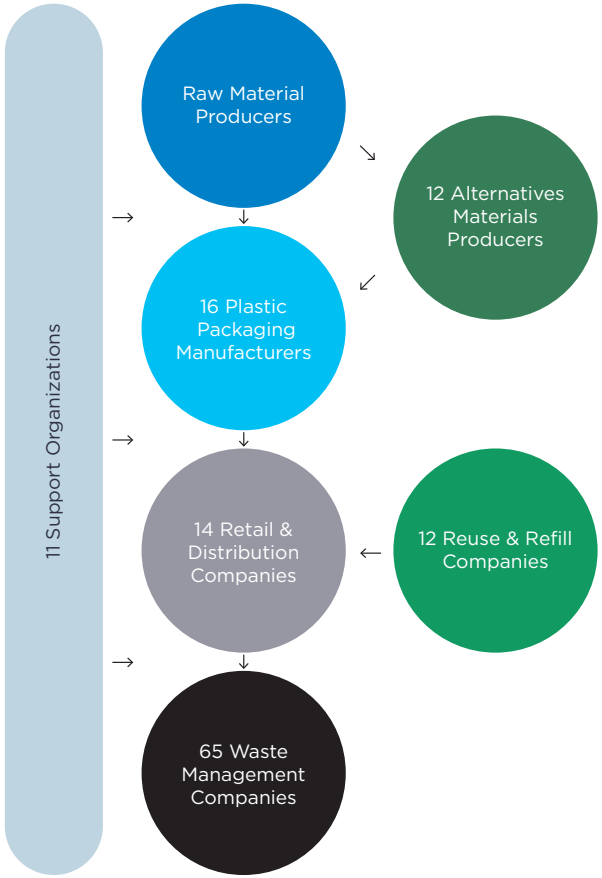

Figure 10: MSME archetypes including the number of companies engaged per category, in total 132 companies provided insights for this report.

Endnotes

1. In this report we use the term 'plastics treaty' or 'treaty' to refer to the ongoing negotiations on an 'international legally binding instrument to end plastic pollution' as agreed in Resolution 5/14 of the UN Environmental Assembly in March 2022.

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4. In this report we use the term 'plastics treaty' or 'treaty' to refer to the ongoing negotiations on an international legally binding instrument to end plastic pollution' as agreed in Resolution 5/14 of the UN Environmental Assembly in March 2022.

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This report has been compiled by the Ellen MacArthur Foundation in partnership with the WWF to understand the impacts of an ambitious, effective and legally binding plastics treaty on MSMEs and formulate key recommendations on how an ambitious treaty could help to support this sector.

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