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White Paper

Plastics, the Circular Economy and Global Trade

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Contents

Executive summary

This briefing note is jointly written by the World Economic Forum's Platform for Shaping the Future of Trade and Global Economic Interdependence, the Forum-led Global Plastic Action Partnership, and key experts and partners of the World Economic Forum. The paper offers an overview of the challenges to developing a circular global plastics economy and trade policy areas that could help tackle the growing issue of plastic pollution. The content is a preliminary assessment, with further research and the trade policy areas suggested meriting further discussion.

Every year, the world produces more than 400 million tonnes of plastics, much of which is mismanaged after use, causing untold damage to the environment and societies. The paper acknowledges the importance of addressing this issue across the plastics value chain and taking a holistic approach based on the "three Rs" – reduce, reuse and recycle. It then focuses on waste management, recycling and reuse, as stakeholders frequently flagged cross-border friction in these areas.

Only 14–18% of plastic waste is formally recycled, as a global average, and the percentage is much lower in some countries. Until recently, a large proportion of plastic waste intended for recycling was exported, a source of controversy due to inadequate infrastructure for proper disposal in importing countries. Changes in domestic rules and the international regulatory regime have altered this picture. However, while moves to avoid plastic waste dumping are critical, there is a need for further thinking on how to enable responsible, legitimate trade to establish recycling economies of scale.

Insights were gathered for this paper through a series of dialogues, a survey and interviews. The cross-border challenges identified are organized into four buckets: regulations; standards and data; investment; and processes. On the first, some countries have introduced bans or requirements on plastic waste imports. Restrictions on imports of recycled plastic have slowed recycling content use in packaging or products.

On the second, differences in standards, whether on recycled plastic production, use or labelling, have created challenges in moving to a more circular economy. Stakeholders did note several standardization efforts under way that could help in this respect. Improved information on quality, performance characteristics and near-term availability of recycled plastics would also go a long way to improving uptake of these over virgin plastics. In addition, companies pointed to the need for greater ease of investment in technologies to deal with growing domestic waste as well as addressing non-tariff barriers linked to chemicals management frameworks.

Most types of plastic waste will be subject to Basel Convention import, export and transit processes, starting from January 2021. Several stakeholders confirmed that to date some countries lack the capacity to efficiently review and engage in these procedures. A knock-on effect could be a slowdown of investments in recycling capacities intended for scale. Differences in international legal instruments relating to plastic waste classification could result in implementation ambiguity that further complicates the landscape for recycling as well as industrial reuse initiatives.

To scale the shift to a more circular global plastics economy, the community involved in this paper suggests three groups of trade policy actions – including border measures, internal mechanisms and increased transparency – complemented by regulatory cooperation. Refinement of the international classification system for traded goods, which does not yet distinguish between different types of plastic, would help countries use trade incentives accurately and allow for more exact data collection. Tariffs could also be cut on technologies and inputs into waste management processes, as well as commitments to keep environmental services sectors open to foreign players. Ongoing trade facilitation work could be employed to upgrade countries' capacities for clear, safe, legal trade in plastic waste. Transparency on domestic plastic-waste measures through notifications in global forums would help firms planning more sustainable value chains.

Interest in tackling plastic pollution has grown among some World Trade Organization members, while bilateral or regional trade deals offer another useful avenue. Although trade policy is not the silver bullet, trade deals have only lightly touched on the circular economy, and there is arguably much more that could be done to influence production and consumption trends. Stakeholders also highlighted the importance of coherence between international governance processes to bring circular economy objectives to the forefront. As the Basel Convention Conference of Parties (2021 and 2023) approaches and the amendment processes advance, stakeholders need to collaborate in creating clear classifications and definitions in relation to plastic waste, such as between hard- and easy-to-recycle plastic waste.

The COVID-19 pandemic has increased the complexity of plastic pollution management due to a heightened demand for single-use plastics for personal protective equipment and precautions against mishandling potentially contaminated plastics. To keep infection rates low, some governments have rolled back bans on single-use plastics.

Yet with the drastic plastic pollution problem, policy-makers need to strengthen their commitment to long-term actions across the three Rs. Critical downstream interventions, including recycling and reuse, could be helped by trade policy. Equally, a number of trade policy upstream actions may not yet be fully conceptualized. Further research is also needed on how these interventions could generate sound environmental management jobs in developing countries. To help advance the conversation, business, experts and academia can offer support by presenting insights on the key obstacles and engaging in multistakeholder capacity building where appropriate. Taken together, these steps would contribute to building a more sustainable global economy in years to come.

1. Introduction

1.1. Context

Plastic is a highly useful material. It is lightweight, functional, durable and, among other things, has been critical in the COVID-19 emergency response through its use in the manufacture of personal protective equipment (PPE). Yet plastic pollution is a major global crisis. The world produces more than 400 million tonnes of plastic every year, much of which is considered mismanaged after use. Concern has grown about the volume of plastic waste accumulating in cities and villages, landfills, dumps and the natural environment. An estimated 25% of plastic waste is incinerated and 56% is disposed of in landfills.[1] Plastic recycling rates are low at between 14–18% as a global average and much lower in some countries, compared with recycling rates exceeding 50% for steel, aluminium, copper and paper.[2]

Numerous causes have led to a leakage of huge amounts of plastic into the world's oceans.[3] Plastic's resistance to biodegradation has subsequently resulted in the presence of microplastics in fish or drinking water. Plastic litter clogging up sewers has amplified the risk of flooding, contamination and vector-borne diseases. Increased incineration in recent years poses environmental and health risks as dioxins and other toxic pollutants are emitted where combustions plants are poorly regulated. Stakeholders have also flagged concerns on the health and environmental risks of plastic production, while fossil fuel feedstock inputs for virgin plastics add to global emissions.

Governments and companies are responding. Around 127 countries have adopted legislation on plastic bags, and many have introduced rules on single-use plastics more generally. New regulations include bans on the use of specific products such as straws, packaging materials such as polystyrene, or production levels. Some countries have opted for taxes or waste-disposal fees on single-use plastics, introduced extended producer responsibility (EPR) requirements, recycling targets, packaging requirements or bans on plastic waste imports. There are also regional and international efforts to reduce plastic pollution – often focused on impacts to the marine environment.

A growing number of firms have started to disclose plastic packaging volumes, implemented recycling targets, committed to end single-use plastics, incorporated recycled plastics and upgraded waste-management initiatives.[4] Research, development and investment have increased throughout the plastics value chain, including addressing material design innovation such as biodegradable packaging created from seaweed and cassava, and new business models to encourage reuse and refill schemes, as well as improved waste collection, and sorting and advanced recycling technologies. The concept of the circular economy – a systemic approach to decouple growth from the consumption of finite resources where products are always kept at their highest value and waste from one process is input into another – has steadily become more mainstream.

Yet few government initiatives, business models or collective efforts to date have reached their full intended scale and impact. There is an important cross-border component – both existing and potential – to tackling plastic pollution and scaling more circular approaches in the plastics sector. The plastics value chain spans from raw materials extraction to final disposal, collection and recycling. However, while plastic production and consumption are global, with an international trade in plastics, plastic packaging and synthetic textiles,[5] the picture is more complex for plastic waste management.

Most plastics are produced in North America, Western Europe and China, with these regions also being major consumers. The largest exporters of plastic and rubber in 2018 by volume were the United States, China, Germany, France and Mexico.[6] Global trade in plastic waste, meanwhile, is small relative to overall plastic waste generation. The Organisation for Economic Co-operation and Development (OECD) found that, in 2015, just 4% of the 300 million tonnes of plastic waste generated was exported outside the country of origin.[7] However, researchers have noted that about half of all plastic waste intended for recycling was exported in 2016, with China importing the lion's share.[8]

The story told by these figures is twofold. First, plastic waste management has largely been approached locally or domestically to date, although illegal trade and mislabelling of plastic waste is suspected to be rife.[9] Second, until recently, plastic recycling efforts have nonetheless often involved exports, dominated by flows to China. These trade flows became a source of controversy due to waste dumping and inadequate infrastructure for proper disposal. Researchers also note that some countries' waste recycling targets permit exports, but do not meaningfully enforce oversight on treatment at destination, implying that even the limited existing recycling data could be exaggerated.[10]

Changes in domestic rules and the international regulatory regime will now further alter this story. At the beginning of 2018, China introduced a ban on certain plastic waste imports, a move followed by several other countries. Increasing attention to the issue of plastic waste dumping in countries without appropriate treatment facilities resulted in international action in May 2019, with the 187 parties to the Basel Convention – a treaty on the transboundary movement and disposal of hazardous and other wastes – adding most types of plastic waste to the list of controlled wastes. Specifically, parties to the convention added plastic waste to Annex II (categories of wastes requiring special consideration), as well as clarifications to the scope of plastic wastes covered by Annex VIII (presumptively hazardous) and Annex IX (presumptively non-hazardous and not controlled under the convention).[11]

The new amendments go into effect from January 2021.[12] From then on, plastic waste that is sorted, clean, uncontaminated and effectively designed for recycling can be traded freely, while other types will require the consent of importing and transit countries. Parties to the Basel Convention may not trade controlled waste with non-parties, such as the United States, unless an alternative agreement meeting the requirements of Article 11 applies.[13] Plastic wastes listed under the convention's Annex II are not affected by the Ban Amendment preventing the export of hazardous wastes from OECD economies to non-OECD economies, except for parties such as the EU that would decide to apply the ban to plastic wastes listed under Annex II.[14] The Ban Amendment entered into force in December 2019.[15]

How the Basel plastic waste amendments will interact with other cross-border mechanisms is unclear. An OECD Waste Agreement, which streamlines import-export procedures and outlines risk-based approaches, includes mechanisms that provide for harmonization with changes to the Basel Convention waste annexes by default.[16] The US has objected to the Waste Agreement alignment on plastic, however, and discussions have not yet yielded an outcome.

The EU's Waste Shipment Regulation (WSR) is another influential legal framework, with revisions ongoing to ensure the implementation of the Basel plastic waste amendments into EU law by January 2021, and specific tools used to ensure non-hazardous plastic waste can still be traded within the bloc.[17] The EU Strategy for Plastics in a Circular Economy aims to scale plastic recycling, in combination with proposed rules for improved waste management, promoting science, innovation, new products and business models.[18]

The EU has also set a goal of all packaging in its market being reusable or recyclable in an economically viable way by 2030. This will have implications for developing-country traders using plastic packaging or in end products targeted at the bloc. Finally, the EU has put in place a Circular Plastics Alliance with a target to increase the EU market for recycled plastic to 10 million tonnes by 2025. More than 175 organizations from industry, academia and public authorities have pledged action.[19] This could be a source of opportunity to scale recycling trade with third parties once functioning services are in play.

Elsewhere, World Trade Organization (WTO) members have used the Committee on Trade and Environment (CTE) to share information on domestic policies that address plastic pollution, while notifying some measures affecting trade in plastics for environmental reasons under the WTO Technical Barriers to Trade (TBT) Agreement.

In recent months, some WTO members have begun to explore a global trade policy contribution to cross-border plastic pollution and the circular economy. Matters emerging in the discussion include considering greater transparency and monitoring of measures related to plastics; lower tariffs on plastic substitutes as well as biodegradable and recycled plastics, or those derived from bio-based sources; phasing out subsidies for fossil fuel production; promoting policy coherence to limit exports of materials banned in domestic markets; encouraging regulatory cooperation on trade-related measures; and capacity building. A mechanism to monitor and compile data on trade flows in plastic waste has also been proposed.[20] It has been suggested, too, that WTO members could support sustainability as a component of the ongoing investment facilitation discussions.

1.2. Purpose and scope

The backdrop described indicates an evolving, and to some extent uncertain, domestic and international landscape for plastic pollution governance. The COVID-19 pandemic adds another layer of complexity as single-use plastic demand surges and waste management have become more challenging (see Box 1). The following briefing note is assembled by the World Economic Forum Trade and Investment Platform and its Global Plastic Action Partnership – a public-private platform hosted at the Forum and supported by both government and industry – based on interviews, dialogue and written inputs. The briefing's aim is to inform debates in various settings on moving to a circular economy in an interconnected world.

The paper outlines issues related to circular plastics linked to domestic measures, international frameworks and, sometimes, a lack of cooperation. While we recognize the importance of the entire plastics value chain for promoting a shift to a circular economy for plastics, the paper focuses mostly on waste management, recycling and reuse, since cross-border friction was most often flagged in these areas.

Looking ahead, the Forum is bringing together diverse actors to identify the role of trade in accelerating a circular plastics transition. The final section of the paper outlines solution buckets that could be explored in more detail.

Addressing plastic pollution requires a holistic approach across the "three Rs" – reduce, reuse and recycle. Although the plastics challenge will not be solved by recycling alone, more could be done on this pillar.[21] The greenhouse-gas footprint of recycled plastics is a fraction of that of virgin plastics.[22] Unlike other materials, plastic waste has not developed into a global recycled commodities market. Since recycling plastics can be difficult and expensive, collaboration across value chains and using the potential of markets for scale and specialization may be helpful. Indeed, in a recent Forum industry survey, 94% of respondents agreed on the need for supportive trade policies as much as controls to reduce, reuse and recycle plastic waste. Yet all respondents felt intergovernmental collaboration on plastic waste and recycling had been inadequate to date.

Box 1: Plastic and COVID-19

COVID-19 has had notable impacts on plastic use, waste management and pricing.[23] Global efforts to contain the pandemic have increased the circulation of single-use plastics for personal protection equipment (PPE). Restaurant takeaways and online grocery orders have promoted a rise in the use of disposable packaging. Some countries or cities have temporarily lifted bans on single-use plastics, while others have also suspended or delayed bans on the use of plastic bags. Disposable masks, while important, can be composed of different types of plastic, making them difficult or impossible to recycle.

Plastic waste collection, meanwhile, has become more challenging with the temporary closure of municipal and processing facilities. In many developing countries, informal waste-pickers are unable to work due to restrictions but are also vulnerable to the pandemic. Some entities, such as the European Commission, have released guidelines on the proper handling and management of waste amid COVID-19. The commission also issued recommendations to EU member states for electronic notification and documentation for waste shipments – noting that, before the crisis, many countries in the bloc were using paper-based systems that cannot adhere to physical distancing measures.[24]

The economic impact of COVID-19 has escalated the downward pressure on oil prices as manufacturing, production, air and other travel ground to a halt. Continued low oil prices will make virgin plastic cheap, particularly in comparison to recycled plastic.[25] At the same time, some experts are concerned that less household waste channelled into collection points will affect recycled plastic supply, particularly in the more popular retail categories such as polyethylene terephthalate (PET). Limited operational capacities during the pandemic have also thrown recycling operations into distress.

2. Initial findings

Companies' interest in tackling plastic waste has grown markedly in the past decade and across the plastics value chain.[26] However, some firms confirmed that recycled plastic prices are volatile and the share of recycled production in total plastics output is low. Several companies re-emphasized that the plastics challenge would not be solved with recycling alone. These actors stressed the corresponding importance of switching to non-plastic alternatives. Conversely, others noted the importance of weighing holistic environmental costs when using alternatives, some of which may come with higher impacts on emissions or resources use.[27]

Many companies recognized the interconnected nature of the plastics value chain. For example, consumer-facing firms highlighted recycling programmes designed to create incentives for recyclers to invest in advanced technologies. Yet companies also highlighted several cross-border issues, which we have organized into four buckets: regulations; standards and data; investment; and processes.

2.1. Regulations

Companies flagged existing friction in relation to the movement of plastic waste between and within countries. Even within the highly integrated EU 27, firms reported plastic recyclers encountering challenges in moving waste across borders to recycling facilities. Approval processes can be slow and may even differ within country provinces – including differing end-of-waste criteria. Similar domestic approval challenges were identified in other regions such as Latin America.

Several companies commented on China's "green fence" legislation from early 2018, which involves import restrictions on certain plastics and on minimum levels of contamination for imported materials, including plastic waste and scrap. The legislation led many plastic recyclers to close their plants in China and move to neighbouring countries and also caused a spike in recycled plastics prices. Imports of high-quality recycled plastics into China are still allowed, though the rules are complex and challenges have arisen with border clearance. Manufacturers indicated that this has slowed the use of recycled packaging in China, both for the purpose of exports and the domestic market.

Another country's ban on recycled plastic imports, meanwhile, resulted in a manufacturer switching to virgin plastic for certain consumer goods as the same quality of recycled plastic could not be sourced in the domestic market. Some companies also remarked that some markets have slow regulatory approval processes for the use of recycled products.

2.2. Standards and data

In a world of value chains, differences in standards – whether on recycled plastic production, use or labelling – create challenges. For example, the use of varying grades of plastic by producers requires recyclers to create different recycled plastic grades, at an added cost. Missing information on materials properties, particularly when goods are traded worldwide, can complicate recycling (see Box 2). Additives such as colours or flame retardants that are integral to certain plastic products could, for instance, pose risks to human or ecological health during the mechanical recycling process. Certain additives can also create low-quality or potentially toxic mechanically recycled plastic. Uncertainty on the characteristics of recycled plastics can hamper uptake by manufacturing firms.

Some standardization efforts are under way that could help. Companies drew attention to industry-led discussions on standards that would specify the exact grades of recycled plastic to be used for certain products. The OECD chemicals and environmental policy committees are also exploring sustainable plastic product-design criteria and considerations from a chemicals' perspective. These discussions are identifying existing relevant tools, gaps to fill and policy frameworks to reduce the impact of plastics on the environment and health.[28] "Sustainable plastics" are defined in that process as plastics that can be managed within a sustainable materials system, including recycling. Separately, some firms noted that there are long-standing questions on the definition of "biodegradable" plastics, with certain markets already setting different criteria that create technical barriers to trade for introducing new product innovations.

Policies are limited worldwide, meanwhile, on labelling recycled plastics. Firms suggested that greater harmonization and agreement on what constitutes recycled plastic and how to label it is needed to increase recycled plastic use. Some retailers indicated that non-profit initiatives such as How2Recycle in North America – which provides guidance on package recycling information – and equivalents in other regions were helpful guides on the most effective techniques for introducing products into markets.[29]

Several firms said that the absence of traceability and data shortages creates uncertainty on what materials are where in the market, especially for recycled content. Whereas there is typically information on virgin plastic quality, performance characteristics and near-term availability, the same is not true for recycled plastic. Some firms remarked that helping informal-sector waste-pickers in developing economies – who play a vital role in collecting recyclable plastics and can gather and report highly valuable data – to access the formal economy was a part of the solution. It could provide opportunities for skills-based training including safety expertise for waste-pickers to support a more sustainable career model.

Box 2: Plastic types and recycling

There are two main plastic varieties: thermoplastics and thermosets. Thermoplastics can be softened or melted in high-heat or high-pressure environments, and they can be converted back to a solid state under cool conditions. Examples include polyethylene terephthalate (PET) and polyethylene (PE), two of the most commonly used polymers for single-use plastics.[30] Single-use plastics are intended for one-time use and are disposal thereafter. PET is used in manufacturing single-use packaging for water and other beverages. PE can be formed with varying levels of density depending on the parameters for packaging. High-density polyethylene (HDPE) is often used to produce shampoo and milk bottles, while low-density polyethylene (LDPE) is employed in the production of single-use plastic bags and plastic cling-wrap.[31] Polystyrene (PS), expanded polystyrene (EPS) and extruded polystyrenes (XPS) are thermoplastics used to create Styrofoam and other single-use PE foams. The sturdy and portable nature of foamed plastics makes them ideal for food packaging.[32]

Although biodegradable thermoplastics exist, most single-use plastics and foamed materials are non-biodegradable and can cause ecological harm if not properly managed at end-of-life. Yet the reversible nature of thermoplastics makes them ideal for recycling, though not all thermoplastics can be recycled. There are four main recycling mechanisms for thermoplastics:[33]

1. *Primary (closed-loop) recycling* – Plastic materials are applied in new products without changing their physical and chemical states. It is an affordable means of recycling but cannot be maintained over a prolonged period due to wear and tear.
2. *Secondary (mechanical) recycling* – Plastics are physically reduced to smaller fragments, then thermally processed to recreate plastic products. Mechanically recycled plastics may contain both recycled and virgin plastics depending on the level of quality desired for the product. The presence of contaminants in plastic waste during mechanical processing can drastically reduce the quality of recycled plastic products.
3. *Feedstock (chemical) recycling* – A range of chemical reactions such as thermal cracking can be used to alter thermoplastics at the molecular level, breaking down polymers into smaller units called monomers and oligomers. These smaller molecules can then be fed back into the production cycle to create new polymers. Chemical recycling requires economies of scale due to costs; it cannot be applied to all thermoplastics and the environmental impact is still under debate. The method can be a potential solution to address the challenges related to so-called "substances of concern for recycling".
4. *Quaternary recycling* – Plastics are incinerated for energy generation, but the process has harmful ecological effects. For example, it releases carbon dioxide. Some in the field do not consider the process to be actual recycling.

Thermosets such as silicone and polyurethane cannot be thermally remoulded once they have been cured in a heated catalytic environment. They can, however, undergo chemical recycling like thermoplastics.

2.3. Investment

Part of the challenge in building a circular plastics economy lies in investments upstream and downstream in emerging and advanced economies alike.[34] Circular plastics investments can be slowed down or sped up based on several factors, not least the regulatory environment, local infrastructure and skills, incentives, government procurement policies and overall investment facilitation.

The latter is the subject of ongoing negotiations among 101 WTO members to make investment frameworks more transparent, predictable and efficient. While not exclusive to any sector, several companies have suggested that general improvements to investment processes would be welcomed, particularly in developing countries where new technologies are needed to deal with growing domestic waste, including plastic rubbish. Such steps, combined with responsible trade facilitation measures, could also result in regional economies of scale for plastic waste management.

Some firms suggested additional thinking is needed on other types of international collaboration to support technology investment. For example, regulatory cooperation chapters in some free trade deals include commitments on the use of science and risk-based approaches for regulating chemicals and to introduce chemicals management frameworks. Chemicals are often an important part of recycling processes (see Box 3). Policy-makers could also commit to using international standards as a basis for domestic rules to avoid non-tariff barriers – such as the Globally Harmonized System (GHS) of Classification and Labelling of Chemicals, which is a non-binding, United Nations-based system of chemicals' hazard communication.

Box 3: End-of-life and recycling technologies

Most global waste-collection processes are manual. Technological advancements, however, are paving the way for integrated collection using both manual and automated processes. Take, for example, the collection of plastics from oceans and other bodies of water. Companies such as SpillTech in Norway have successfully created a floating waste-collection system called the PortBin. The technology makes use of suction to filter solid marine waste into a large mesh container that is then emptied manually. Developments for automating this step are currently under way. Once recyclable plastic waste has been separated from solid waste, it is transported to a material recovery facility (MRF), where recyclable waste undergoes both manual and automated sorting before being sold for treatment and processing.

Several technologies are available for recycling plastics chemically – with debates ongoing as to the corresponding environmental and emissions-related impacts. While most of the technologies described in this box can be used to process mixed plastics, chemolysis is useful only for homogenous plastics such as PET. Chemolysis is a process that uses chemical agents or catalysts to break down homogenous or non-mixed plastics into monomers. Cracking is used to chemically process heterogeneous plastics and can be achieved using pyrolysis, catalytic cracking or hydrocracking. Pyrolysis, also known as thermal cracking, is a thermal degradation technique for chemically recycling plastic waste in an oxygen-free environment. Catalytic cracking is like pyrolysis. The main difference between the two is that catalytic cracking uses a catalyst to assist the depolymerization process and reduces the target temperature for thermal degradation as a result. Finally, hydrocracking requires a high-pressure environment and hydrogen to degrade plastic materials and create light hydrocarbon gas liquids.

2.4. Processes

From 2021, most plastic waste trade across borders will be subject to the Basel Convention prior informed consent (PIC) procedure as a controlled waste. The PIC procedure contains four key stages involving: 1) notification by the state of export or by the exporter to the appropriate authorities of export, import and transit; 2) written consent by transport or importing states; 3) the use of transboundary movement documents from point of export to disposal; and 4) confirmation of disposal. Parties are legally obligated to ensure plastic waste for exports will be managed in an environmentally sound manner (ESM).[35] There is a requirement to demonstrate the existence of a contract between the waste exporter and importer according to ESM conditions. The state of transit or import may add conditions to the movement, request additional information or deny movement.[36]

Interviews with companies highlighted that to date some countries lack the capacity to efficiently review and process PIC notifications. Several predicted the incoming procedure for plastic waste would slow recycling initiatives and global circular economy prospects. The time, effort and legal uncertainties may outweigh the costs of investing in recycling capacities intended for scale, not to mention the fact that recycled plastic must now compete with even lower prices for virgin plastic in the wake of falling fossil fuel prices.

Some companies expected limitations in North American markets due to the prohibition on Basel parties trading controlled waste with non-parties. Takeback schemes for industrial plastic containers sold between the US and Canada, for example, may no longer be possible.[37] Differences in plastic waste classification between the Basel Convention, OECD and the EU Waste Shipment Regulation may lead to legal uncertainty as governments interpret rules differently. The absence of thresholds and criteria for "contamination" in the Basel plastic amendments is another area that may lead to interpretative differences.

Stakeholders did recognize the value of the PIC procedure in giving states oversight on movement and disposal of hazardous and other types of waste. Indeed, some experts have argued that the current process does not give governments enough control, with loopholes leading to illegal trade or hazardous incidents in ill-equipped countries.[38]

Yet the jury is out on the full implications of the Basel Convention plastic waste amendment. Most observers agree that the Basel Convention has been a useful tool in past decades to address egregious waste dumping. On the one hand, it provides a break on plastic waste dumping in developing economies, and associated ocean pollution. The Basel Convention includes specific provisions on technology transfer to developing countries and regional systems for training. The plastic amendments also established a Plastic Waste Partnership to bring together countries, business and civil society to work on the environmentally sound management of plastic waste. These systems may be employed to improve domestic capacities.

On the other hand, the new processes may limit incentives to use trade and aggregation to increase recycling rates and secondary use as has been done for other materials. It could leave some countries with fewer viable options for the environmentally sound recycling of plastic wastes. It is also uncertain how much impact the Basel Convention's approach has had on illegal trade for other wastes and the implications for plastic once the new amendments are in force.

3. Towards solutions

The findings outlined above suggest three general conclusions for trade, plastics and the circular economy. First, trade and investment can be tools to help technology deployment, spread product innovations and generate economies of scale for recycling. Second, trade has not really been used to advance recycled plastics markets either in terms of processes or products. Third, some barriers exist in terms of plastic waste trade, recycling processes, recycled content use, reuse and take-back business models, as well as technology and manufacturing investment.

Firms did not, however, flag extensive issues relating to deploying plastic alternatives across multiple markets. There were few issues raised about high tariffs on recycled plastic, recycling technologies or barriers to plastic recycling services – though research among a wider response pool would be needed to validate this conclusion and new barriers may emerge in the future. Emerging national regulation could create a patchwork of potentially conflicting requirements that would call for transparency.

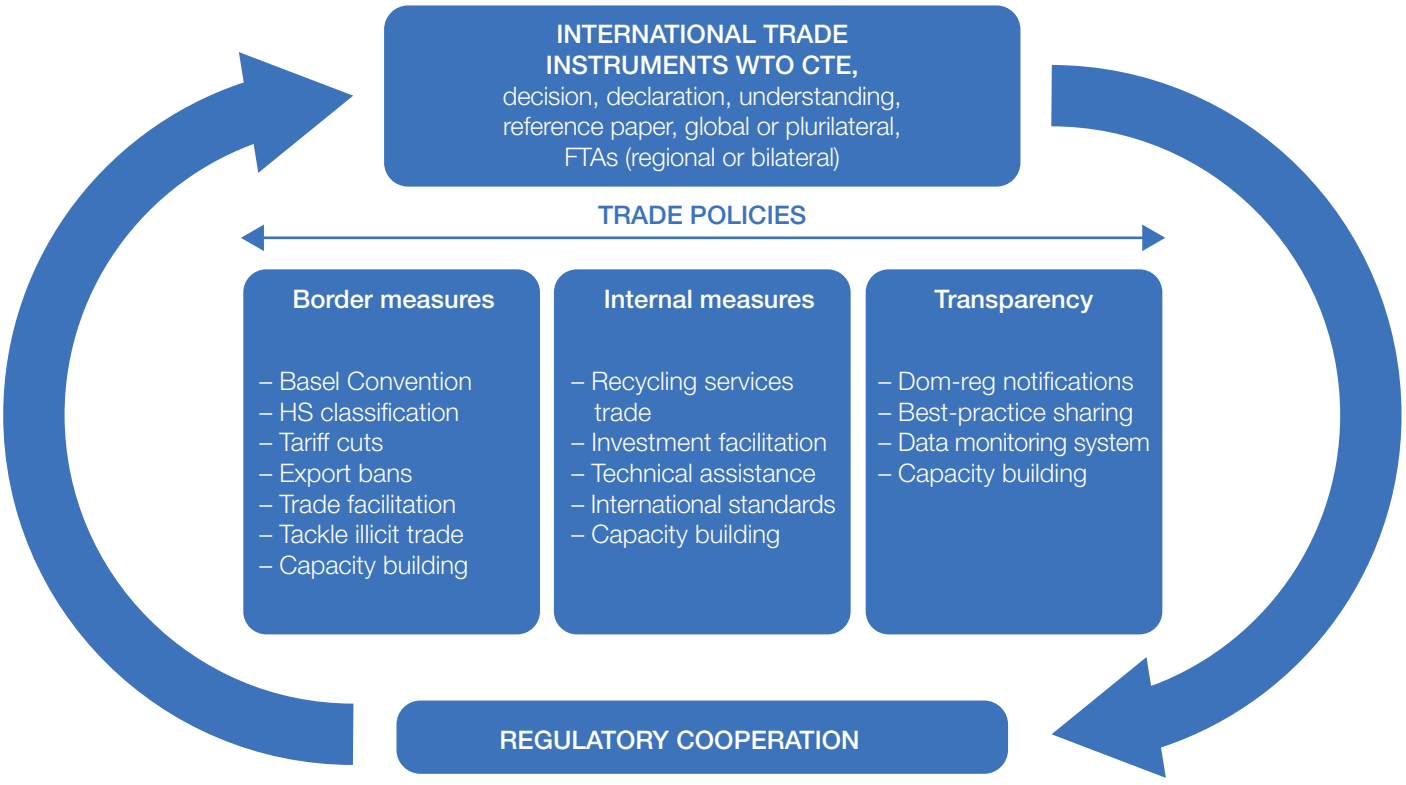
Current trade deals have touched only lightly on the circular economy. Some free trade agreements (FTAs), for example, include provisions on environmental services such as recycling services,[39] and on remanufacturing supporting processes related to heavy equipment, car parts, industrial products and medical devices, among others.[40]

The updated EU-Mexico agreement finalized this year does contain a specific pledge to work jointly on the circular economy. The EU and Canada have used a Committee on Trade and Sustainable Development established under their FTA to discuss potential cooperation on trade in plastic waste,[41] but a more holistic approach is needed to embed circular economy principles into trade policy.

This final section outlines three initial groups of trade policy actions – border measures, internal measures and transparency – that interested stakeholders could consider when looking to promote a circular economy for plastics. Others may emerge as discussions around trade and the circular economy nexus deepen. The section also highlights the types of international trade instruments countries could use to bring these actions forward, as well as the role for regulatory cooperation as a close companion of trade policy (summarized in Figure 1).

Although the focus is on trade policies, there is much that companies and other actors can do to support policy-maker understanding, as well as engage in capacity building. For example, firms can work with regulators to build understanding on plastic alternatives. Links to broader initiatives are important, such as the planned work on recycling infrastructure by the Alliance to End Plastic Waste, as well as synergies with World Bank Group, Global Environment Facility (GEF) projects and the efforts of the Basel, Rotterdam and Stockholm (BRS) Conventions secretariat.

Figure 1: Trade policy options for circular plastics



3.1. Trade policies

A. Border measures

Border measures affect the treatment of goods at the point of entry into or departure from a country. The Basel Convention now carries important legal implications, with most types of trade in plastic waste requiring consent procedures. The ongoing amendment processes within Basel, including within the Plastic Waste Partnership, and the upcoming Conference of Parties (2021 and 2023), provides an opportunity to ensure the objectives of the circular economy can be met. Diverse stakeholders need to provide inputs to ensure that waste is identified appropriately – for example, clarifying the difference between hard- and easy-to-recycle plastic waste.

In conjunction, countries should consider refining the Harmonized System (HS) classifications, an international classification for traded goods managed through the World Customs Organization (WCO). The current HS classifications do not yet distinguish between hard- and easy-to-recycle plastic waste, nor between virgin and recycled plastics. The Basel Convention secretariat is in the process of drafting a proposal on amendments to the HS in relation to plastic waste, taking into consideration the new classification of plastic waste under the Basel Convention.[42] Clarifying these classifications could enable countries to create incentives such as lower tariffs on easy-to-recycle plastic waste, recycled plastics or plastic alternatives. It could also enable researchers to collect better data on cross-border flows of plastic materials. Equally, countries could ban exports of plastic types that are restricted domestically to avoid the dumping of lower-quality materials in foreign markets.

Beyond tariffs on materials, several existing FTAs have sought to facilitate trade in environmental goods and services. These commitments could be investigated to assess their relevance to circular plastics efforts and recommendations made for improvements if they are falling short.[43] A global effort to cut tariffs in environmental goods that derailed in 2016 would have included items relevant to the management of solid and hazardous waste. These commitments could be helpful for reducing input costs to the recycling process and investment in services, while investment negotiations could increase the available capital.

The Basel Convention will require new approvals for exports, transit shipments and imports, along with associated shipping documentation, financial assurance and contracts for plastic waste trade. For many countries, the PIC procedure is still done on paper. Current systems involve reams of documents, often managed in different formats by various actors, with data entry required multiple times along the way when documents are sent via fax or email. Trade facilitation initiatives could better equip digital border processes for permissible trade. Such measures could be particularly relevant within an FTA as part of holistic cooperation on plastic waste management that could also include technology investment, specialization and improvement of local systems.

Capacity building in developing countries is under way through the WTO Trade Facilitation Agreement (TFA), in areas ranging from implementing risk-based management systems for border controls to allowing electronic trade documents, for example. In Morocco, an international public-private effort has helped the national food sanitation office introduce electronic phytosanitary certificates, subsequently used for trade between Morocco and the United States from March 2020. Phytosanitary certificates are official documents used by governments to confirm that shipments of plants and plant products are free of pests and disease and therefore safe to import. The move to an electronic exchange can reduce time, errors, loss, theft and counterfeiting (see Box 4).

Countries have shown some appetite to move electronic and automated notification and documentation for PIC procedures. A Basel Convention report, mandated by a related working group, has encouraged parties to use United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) standards – an agency focused on trade facilitation and e-business – for the electronic interchange of waste movement related to data. Paying serious attention to capacity building will be important, however, to avoid the classic situation of dual systems where use of both electronic and paper systems is needed in the trade process.

Lastly, given the prevalence of illegal trade in plastic waste, more work is needed to identify the scale, mechanics and weak points of the system. Countries should work together to share information and develop an action plan to combat this challenge.

Box 4: Digitalized phytosanitary certificates

The Global Alliance for Trade Facilitation and the International Plant Protection Convention are collaborating to help developing and least developed countries introduce electronic phytosanitary certificates, also known as ePhytos. Phytosanitary certificates are government-issued documents required for trade in plants, plant products and other regulated goods.[44]

Shifting from paper-based to electronic certificates will ease some of the costs and risks associated with exchanging physical phytosanitary certificates. For example, there is less likelihood of errors, loss, theft and counterfeiting. The use of ePhytos will expedite administrative processes for border agencies and businesses, encouraging more trade in perishable goods.

There are currently two digital platforms that countries can use to exchange ePhytos. The first option is exchange through the United Nations International Computing Centre (UNICC) Hub, and the second is the IPPC's General ePhyto National System (GeNS) – an online application. Although they are currently in use for phytosanitary measures, their function can be developed further to enable countries to exchange a more varied range of data, and potentially amplify transparency and trade in a broader range of regulated articles. Introducing ePhytos in countries requires effective collaboration between national governments and business. The Alliance and the IPPC secretariat work with these partners on business process analysis, training and capacity building.

B. Internal measures

Certain trade policies operate away from the border but nonetheless have an impact on trade flows and investment decisions. Trade commitments can be used to enable foreign services providers to offer recycling services within a market and grant them the same treatment as national players in order to create competition.

FTAs provide an important opportunity to liberalize recycling services between the parties. Undertaking relevant commitments (under a negative list approach) or avoiding reservations (under a positive list approach) ensures that service suppliers are granted market access and that foreign services and service suppliers cannot be discriminated against.[45] In some markets, for example, recycling services require certifications or a licence to operate.

Further work could be done on creating a robust investment climate for these recycling services, including exploring financial or regulatory incentives for the production and consumption of recycled plastics. Development aid and technical assistance could be explored to support the development of recycling services and waste management in emerging economies in conjunction – which may also be a component of combatting illicit or informal trade.

The paper has also highlighted the role of international standards in encouraging recycling and innovation, and avoiding non-tariff barriers. Once standards are agreed, trade policy can promote use and adaption. Standards can be encouraged in trade deals as a guide for domestic regulatory initiatives, avoiding arbitrary discrimination, promoting regulatory convergence, etc. Within international trade law, international standards enjoy a privileged status, since they are encouraged for use as a basis of technical regulations. Countries using them can also more easily defend technical regulations in the case of trade disputes as these are presumed not to create an unnecessary obstacle to trade.[46]

Areas ripe for standardization work include labelling requirements, product design standards (minimum recycled content, regulating components of plastics and end products), product bans (e.g. single-use plastics) and recycling standards, including process elements. In some areas, work is already ongoing in countries or regions and could be further internationalized – a comprehensive mapping would be needed. Standardization efforts should be based on open, transparent processes that include stakeholder engagement and meaningful consultation in order to ensure the development of practical, adaptable, science-based models.

C. Transparency

Transparency on domestic measures is critical for business to engage in trade and develop cross-border markets. It could also serve as a tool to help countries identify additional commitments to increase circular plastics. Countries could agree, whether at a global level through the WTO or elsewhere, to share information on trade-related measures and sustainability standards relevant to plastic production, waste and recycling. If using the former, consideration is needed on whether existing WTO notification requirements are enough in terms of scope and commitments, or what would need to be supplemented. WTO members could equally use the Committee on Trade and Environment (CTE), or another structure as appropriate, to discuss national approaches to plastic pollution and opportunities for joint approaches.

These efforts could be flanked by data sharing on recycling rates as well as monitoring and analysis of trends in global recycled plastic production. There is also a need to better trace cross-border flows of plastics and plastic waste at a sufficiently disaggregated level (facilitated by a refined HS classification system, as discussed above). Firms interviewed for this briefing confirmed that there is no common platform in this area and, recalling the frictions caused by the lack of standards and limited data, agreed on the importance of information exchange.

D. Taking action

1) International trade instruments

Assuming further research establishes the efficacy of the above interventions, there are different trade instruments through which countries and other stakeholders can advance collaboration. At the global level, WTO members could work together either through the existing CTE, a decision, declaration or understanding, or as a club of the interested (known as a plurilateral in trade terms). The latter may wish to shape a deal – whether specific to trade and plastics, as part of a trade and circular economy initiative, or more broadly on trade and environment.

Connections with flanking initiatives could also be used: For example, some WTO members are negotiating disciplines on reducing and eliminating fossil fuel subsidies.[47] Removing such support would go some way to evening the cost differentials between virgin and recycled plastic. Links to the WTO investment facilitation negotiations and TFA implementation have been highlighted.

One WTO instrument to consider is the idea of a "reference paper" to outline regulatory principles that countries may take on as additional commitments to reinforce market access obligations. WTO members used this approach on telecommunications, which resulted in the development of domestic governance processes in more than 80 markets that are largely considered the most effective methodologies from a competitiveness standpoint by both industry and governments.[48] Detailed thinking would be needed, however, on what should go into a reference paper on plastic waste or more generally on the circular economy and trade. Developing this could be one way to systematically scale the recovery and reuse of materials.

FTAs could offer another useful avenue for collaboration, whether through the environment chapter or mainstreamed, particularly to create markets specific to regional conditions. Notably, Article 11 of the Basel Convention allows parties to enter into bilateral, multilateral or regional agreements on the transboundary movement of controlled wastes – including with non-parties. The provisions of the convention will not affect these transboundary movements if the deals are compatible with requirements on environmentally sound management.[49]

2) Regulatory cooperation

In assembling this briefing, firms noted the importance of regulatory cooperation whether on standards, rules on materials treatment or chemicals governance. Trade policy can encourage regulatory cooperation, signalling a commitment to business that the parties will use available channels to achieve the stated aims, with that work then taking place through relevant structures outside of a trade agreement.

OECD research, for example, recommends several areas for regulatory cooperation that would help plastic waste management and support markets for recycled plastics. G7 or G20 governments could encourage or commit to recycled content standards or recycled content labelling, create certification standards for recycled plastics or facilitate better coordination and communication across the plastics value chain, including through the promotion of chemical information systems.[50] Asia-Pacific Economic Cooperation (APEC) may be another forum for cooperation along these lines.

4. Conclusion

This briefing note offers an initial overview of the state of play on circular plastics and global trade. It is the start of a conversation to build a bridge between communities operating in different spaces. There are many different regulatory areas and stakeholder groups working to address plastic pollution and move to a more circular system. Meaningfully scaling the circular economy for plastics requires systemic change beyond the areas of waste management and recycling, which have been a predominant focus of this paper. Critical downstream needs, however, could likely be supported by trade policy as it acts on the levers influencing production and consumption patterns. Indonesia's strategy for tackling plastic pollution offers an example of a practical strategy involving actions across the three Rs – envisaging an acceleration of recycling in a first phase followed by reduction and substitution.[51]

Each of the general trade policy and regulatory cooperation options put forward needs further exploration. Economic research could also be done; for example, to assess whether increasing plastic recycling facilities for imports in developing countries would create employment and act as an input to manufacturing. Other research is already ongoing on opportunities for developing countries as suppliers of materials for plastic substitutes.[52] Greater understanding is required on the policies that will have the most balanced impact for the environment, job creation and development.

In the future, the business and expert community can assist this effort by aligning on priority issues and solutions. Organizations such as the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) among others can be useful channels for multistakeholder action, while industry and experts should continue to provide inputs to policy forums such as the WTO, OECD and others.

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Endnotes

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