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Options for Trade-Related Cooperation on Problematic and Avoidable Plastics: Building on Existing Experiences with Single-Use Plastics

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TESS Forum on Trade, Environment, & the SDGs

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In 2019, single-use plastics accounted for 35% of the 376 million metric tonnes of plastics produced that year. Of the 133 million metric tonnes of single-use plastics produced, 130 were destined for packaging while the remainder was used to make single-use consumer and institutional products such as disposable food service ware, kitchenware, household and institutional refuse bags, and personal care items. Such single-use plastics account for a high share of leakage of plastics into the environment.

Trade is central to the production and consumption of plastics, playing a key role in international supply chains for a vast range of plastic products, including single-use plastics, used globally. A growing number of governments have been pursuing efforts to tackle plastic pollution through trade-related measures. However, tackling a pollution challenge that is global in scale, with supply chains that are internationally connected, requires more than a fragmented set of national approaches. International cooperation has a critical role to play to ensure approaches to trade-related action are ambitious, effective, and fair.

Single-use plastics are widely recognized as a major contributor to plastic pollution and form a subset of a larger group commonly termed as "unnecessary or harmful" or "problematic and avoidable" plastics and plastic products. Within this broader range of plastics and plastic products of concern, a diversity of countries recognize the particular contribution of single-use plastics to plastic pollution and are already taking action to reduce, restrict, or eliminate specific items, including through trade-related action.

At the international level, plastics and plastic products of concern have been the focus of a range of submissions by governments and stakeholders on potential obligations and control measures for inclusion in a new international legally binding instrument on plastic pollution (the plastics treaty). In submissions to the International Negotiating Committee (INC), a broad diversity of governments have called for specific obligations in the treaty to eliminate, restrict, and reduce the manufacture, consumption, and trade of these plastics and plastic products of concern as part of a range of measures required to reduce plastic pollution and promote more sustainable production and consumption.

Meanwhile, at the World Trade Organization (WTO), 76 members representing around 75% of plastics trade have co-sponsored a Dialogue on Plastics Pollution (DPP). Among other priorities, the initiative has established dedicated discussions among members with a view to identifying best practices and sharing experiences on "how trade-related cooperation could help to support efforts to reduce unnecessary or harmful plastics and plastic products, including single-use plastics and plastic packaging associated with international trade that are not essential for medical or sanitary purposes, with special attention to issues and challenges arising for developing members."

Recognizing the need for immediate steps by countries to reduce or eliminate all types of problematic, harmful, and avoidable plastics, this policy brief aims to inform discussion on options for trade-related cooperation and action on single-use plastics that could be pursued through international processes, including through the plastics treaty and the WTO, among others.

Key takeaways from the paper on options for trade-related cooperation to address plastic pollution associated with single-use plastics include the need for:

- Cooperation on developing a common set of guiding criteria to identify single-use plastics, alongside a broader group of plastic polymers, chemicals, and plastic products of concern, for the purpose of creating control measures to eliminate, restrict, and reduce them.
- Identification of a set of priority categories of single-use plastics or specific single-use plastics that are problematic for which countries could consider taking immediate action on an individual or collective basis while waiting for an outcome from the plastics treaty negotiations; such action could also be undertaken or pledged in the context of discussions within the DPP.[1]
- Cooperation on the use of trade-related measures to eliminate, restrict, and reduce the use of single-use plastics, including import and export bans and restrictions, import tariffs, regulations and standards, environmental fees, charges and taxes, as well as licensing and government procurement arrangements.
- Cooperation around the design and implementation of measures aimed to support eco-design and reuse, including on tariff incentives or disincentives, coordination and transparency of regulations, standards, and conformity assessments, as well as government procurement policies to stimulate redesign and reuse.
- Cooperation to promote production and trade in environmentally sound and safe non-plastic substitutes for a range of single-use plastics, including by reducing tariffs and non-tariff barriers, eliminating or reducing subsidies that incentivize the use of plastics, advancing policies that incentivize a switch to the use of environmentally sound and safe non-plastic substitutes, facilitating investments in domestic production and environmentally sound waste management of substitutes, cooperating on regulations, standards, and conformity assessments to facilitate diffusion and trade in substitutes, and implementing government procurement measures that promote demand for substitutes.
- Cooperation on broader measures to address policies and practices that promote production and trade of single-use plastics, including disciplining subsidies for fossil fuels and plastic production.
- Promotion of aid for trade initiatives that can support trade-led efforts to address plastic pollution, including support for customs officials and digital technologies that can help identify and track goods, as well as support for the design and implementation of trade-related aspects of plastic pollution policies.

Options for multilateral trade-related cooperation on single-use plastics range from including trade-related obligations and control measures in the plastics treaty to complementary collective action being pursued through the DPP as well as trade-related cooperation initiatives pursued at the regional level.

Across all of these areas, there is an ongoing need to foster cooperation among organizations that work to address the trade-dimensions of plastic pollution, including the WTO, WCO, UNEP, UNCTAD, the International Organization for Standardization, the Basel, Rotterdam, and Stockholm conventions, and Interpol. Where trade-related action is pursued, a key priority will be to ensure transparency of measures, consultation, careful environmental and socio-economic assessments, and cooperation so that measures to tackle plastic pollution are ambitious, effective, and fair, taking into consideration wider sustainable development priorities.

1. Examples of problematic single-use plastic categories that countries could consider listing include, among others, single-use packaging, single-use products made with polymers of concern (i.e. using virgin polymers, non-recyclable polymers, and harmful additives, or those containing microplastics), single-use plastic products that can be readily replaced by affordable non-plastic substitutes, and specific products deemed problematic (such as being prone to littering) in a national or regional context. Examples of problematic specific single-use plastics that countries could consider listing include, among others, sachets, expanded polystyrene packaging, or cigarette butts.

Abbreviations

CGF	Consumer Goods Forum
DPP	Dialogue on Plastics Pollution
EC	European Commission
EDB	Environmental Database
EIA	Environmental Investigation Agency
EMF	Ellen MacArthur Foundation
EPR	Extended Producer Responsibility
EU	European Union
GDRs	Golden Design Rules for Packaging
HS	Harmonized System
INC	International Negotiating Committee
Mt	Metric Tonne
OECD	Organisation for Economic Co-operation and Development
R&D	Research and Development
TrPMs	Trade-Related Policy Measures
UNEP	United Nations Environment Programme
WCO	World Customs Organization
WTO	World Trade Organization
WWF	World Wide Fund for Nature

1. Introduction

The world produces 430 million metric tonnes (Mts) of plastics annually (UNEP, 2023b), of which more than two-thirds are short-lived products, including single-use products, that soon become waste. Indeed, a growing amount of plastic (more than 130 million Mts in 2021) becomes waste after one use (Charles & Kimman, 2023). In 2019, single-use plastics accounted for 35% of the 376 million Mts of plastics produced that year (Landrigan et al., 20223).

Packaging, much of it single-use, accounts for a high share of plastic pollution. An estimated 35–40% of plastic production is used in single-use items. This share is expected to grow rapidly, with the production of single-use plastics predicted to increase by 30% (70 million Mts) between 2020 and 2025 (Landrigan et al., 20223). Of the 133 million Mts of single-use plastics produced in 2019, 130 Mts was destined for packaging while the remainder was used to make single-use consumer and institutional products such as disposable food service ware, kitchenware, household and institutional refuse bags, and personal care items (Landrigan et al., 2023).

Such single-use plastics also account for a high share of leakage of plastics into the environment. Flexible packaging (bags, films, pouches, etc.), multilayer/multimaterial plastics (sachets, diapers, beverage cartons, etc.), and microplastics account for a disproportionate share of plastic pollution at an estimated 47%, 25%, and 11% of the leakage mass of plastics respectively in the marine environment (The Pew Charitable Trusts & SYSTEMIQ, 2020).[2] According to Pew and SYSTEMIQ (2020), focusing efforts on reducing multilayer/multimaterial flexibles, business-to-business packaging, films, bottles, carrier bags, and food service disposables, along with the elimination of unnecessary items and over-packaging, can achieve 86% of the avoidable growth in plastic waste by 2040. Such efforts would also entail replacement of these materials with environmentally safe non-plastic substitutes as well as reuse of plastics and plastic products as feasible, and new product delivery models that reduce consumption of these items.

Trade is central to the production and consumption of plastics, playing a key role in international supply chains for a vast range of plastic products, including single-use products. A growing number of governments across the world have been pursuing efforts to tackle problematic and avoidable plastics, including single-use plastics, through trade-related measures. However, tackling a plastic pollution challenge that is global in scale, with supply chains that are internationally connected, requires more than a fragmented set of national approaches. International cooperation has a critical role to play to ensure approaches to trade-related action that are ambitious, effective, and fair.

Single-use plastics are widely recognized as a major contributor to plastic pollution and form a subset of a larger group commonly termed as "unnecessary or harmful" or "problematic and avoidable" plastics and plastic products (see Box 1). Problematic plastics, for instance, may include single-use as well as short-lived plastics and those that are harmful to the environment and human health. The term problematic plastics is also used to describe plastics that are difficult to manage at their end of life, such as due to the presence of harmful chemicals that impede environmentally sound and safe recycling or disposal. Other examples of problematic plastics include microplastic beads added to cosmetics or plastic products that contain chemicals and additives harmful to human health. For the purposes of this policy brief, the term "plastics and plastic products of concern" will be used to capture these two broad groupings that also contain single-use plastics.

2. The ranges for these three percentages are respectively 34–58%, 17–34%, and 6–17%.

Within this broader range of plastics and plastic products of concern, a diversity of countries recognize the particular contribution of single-use plastics to plastic pollution and are already taking action to reduce or eliminate specific items, including through trade-related action.[3] While definitions of single-use plastics vary widely, the United Nations Environment Programme (UNEP) (n.d.) has described them as "commonly used plastic items intended to be used only once before they are thrown away or recycled." Examples include grocery bags, food packaging, bottles, straws, containers, cups, and cutlery.[4]

At the international level, plastics and plastic products of concern have been the focus of a range of submissions by governments and stakeholders on potential obligations and control measures for inclusion in a new international legally binding instrument on plastic pollution (hereafter the plastics treaty).[5] In submissions to the International Negotiating Committee (INC) for the treaty and in their statements during INC sessions, a broad diversity of governments have called for specific obligations in the treaty to eliminate, restrict, and reduce the manufacture, consumption, and trade of plastics and plastic products of concern, including single-use plastics, as part of a range of measures required to reduce plastic pollution and promote more sustainable production and consumption.

Meanwhile, at the World Trade Organization (WTO), 76 members (as of October 2023) representing around 75% of plastics trade have co-sponsored a Dialogue on Plastics Pollution (DPP) (WTO, 2021a). Among other priorities, their 2021 Ministerial Statement on Plastics Pollution and Environmentally Sustainable Plastics Trade established dedicated discussions among members with a view to identifying best practices and sharing experiences on "how trade-related cooperation could help to support efforts to reduce unnecessary or harmful plastics and plastic products, including single-use plastics and plastic packaging associated with international trade that are not essential for medical or sanitary purposes, with special attention to issues and challenges arising for developing members."[6]

Recognizing the need for immediate steps by countries to reduce or eliminate all types of problematic, harmful, and avoidable plastics, this policy brief aims to inform discussion on options for trade-related cooperation and action on single-use plastics that could be pursued through international processes, including through the plastics treaty as well as through trade-related cooperation at the WTO, such as in the context of the DPP. While the need to address the broader problem of plastics and plastic products of concern will be highlighted to provide an overall broad context, the focus of the paper is on addressing single-use plastics.

Section 2 presents an overview of the diversity of single-use plastics and the ways they can be categorized for policymaking purposes, drawing on existing national legislation, country and stakeholder submissions to the plastics treaty process, and discussions in the DPP. Section 3 reviews various criteria as well as actions that have been proposed to eliminate or reduce single-use plastics. Section 4 presents a set of options for trade-related cooperation and action on single-

3. By July 2018, at least 127 countries had passed policies to prevent single-use plastics (UNEP, 2018).
4. The European Union's Single-Use Plastics Directive, for instance, says that "'single-use plastic product' means a product that is made wholly or partly from plastic and that is not conceived, designed or placed on the market to accomplish, within its life span, multiple trips or rotations by being returned to a producer for refill or reused for the same purpose for which it was conceived." See European Union, *Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment*, OJ L 155, 12.6.2019.
5. In March 2022, 175 governments agreed at the United Nations Environment Assembly to launch negotiations on a legally binding instrument on plastic pollution, including in the marine environment, with the goal of addressing the full life cycle of plastics and concluding an agreement by the end of 2024. See United Nations Environment Assembly, *End plastic pollution: Towards an international legally binding instrument*, UNEP/EA.5/Res.14 (2 March 2022). As part of the work of the International Negotiating Committee (INC) created to advance the negotiations, governments were invited to contribute submissions on different options for elements on the treaty in advance of the second session of the committee (INC-2).
6. World Trade Organization, *Ministerial Statement on Plastics Pollution and Environmentally Sustainable Plastics Trade*, WTO Doc. WT/MIN (21)/8/Rev.2 (10 December 2021).

use plastics that could be pursued through international processes. To provide context, Box 1 first introduces the state of play of discussions with regard to key terms and definitions relevant to single-use plastics used in the INC and DPP, and in this policy brief.

Box 1. Terms and Concepts Relevant to Single-Use Plastics Used in the DPP and INC

At the WTO, the 2021 Ministerial Statement on Plastics Pollution and Environmentally Sustainable Plastics Trade refers to "unnecessary or harmful plastics and plastic products, including single-use plastics and plastic packaging associated with international trade that are not essential for medical or sanitary purposes." To date, however, there has not been a focus in the context of the DPP discussions to develop a universally accepted understanding of what the terms "unnecessary or harmful" mean, although discussions have clearly indicated that Members regard single-use plastics as one subset of a broader category of "unnecessary or harmful" plastics (WTO, 2021a).

At the INC, the "Zero draft text" of the plastics treaty refers to "problematic and avoidable plastic products including short-lived and single-use plastic products and intentionally added microplastics," noting that a definition of "problematic and avoidable plastic products" may be needed. The zero draft also provides (in Annex B) an option for members to list criteria to identify problematic and avoidable plastic products, including short-lived and single-use plastic products (UNEP, 2023c).

An earlier INC Secretariat paper on "Potential options for elements towards an international legally binding instrument, based on a comprehensive approach that addresses the full life cycle of plastics as called for by United Nations Environment Assembly resolution 5/14" (hereafter the "INC Secretariat options paper") mentions submissions by members that "referred to a number of additional terms to describe problematic and avoidable plastic products that Member States may wish to consider, including 'single-use', 'short-lived' and 'unnecessary'" (UNEP, 2023a). At the same time, INC discussions have shown that many members consider single-use, short-lived, and unnecessary plastic products as part of a broader basket of problematic and avoidable plastic products.

For the purposes of this policy brief, the term "plastics and plastic products of concern" will be used to refer to these two broad categories discussed in the context of the DPP and INC, namely "unnecessary or harmful plastics and plastic products" and "problematic and avoidable plastic products." No universally accepted definition of "single-use plastics" exists that has been adopted or endorsed by an intergovernmental process.

Notably, the "Potential options for elements" paper also refers to the "Plastics Science note by the secretariat", which in Appendix 1 lays out definitions of key terms such as "problematic or unnecessary plastic packaging or plastic packaging components", "short-lived plastic products", and "single-use plastic products" (the note makes clear that no definition of these terms has been adopted or endorsed by an intergovernmental process) (UNEP, 2022).

2. Single-Use Plastics: Landscape and Categories

To address the challenge of ending plastic pollution associated with single-use products, a classification of the many types of single-use plastics is vital. A review of national legislation, government and stakeholder submissions to the INC, and discussions in the DPP reveals three commonly used approaches: a product-specific approach identifying specific single-use plastics that present environmental challenges; an open-ended approach using product examples or criteria; and an approach defining specific single-use plastic categories and subcategories.

Product-Specific Approach Identifying Specific Single-Use Plastics That Present Environmental Challenges, Particularly in a Local or Regional Context

Regulators at the national level, both in developed and developing countries, commonly take a product-specific approach. A review of the products already listed for control measures within domestic policy and legislative action, such as prohibitions, reductions, or phase-outs, reveals a strong focus, for instance, on specific products associated with marine plastic pollution in a national or regional context. This product-specific approach is also evident in examples of various trade-related policy measures (TrPMs) including regulations adopted by WTO members and notified to the WTO (IISD, 2023; WTO, 2023a).[7]

The European Union (EU) directive on single-use plastics, for example, focuses its market prohibition only on single-use plastic products that are found the most on beaches in the EU as well as on fishing gear (which is not necessarily single-use) containing plastics and products made from oxo-degradable plastics. The plastic products covered by measures under the directive represent an estimated 86% of the single-use plastics found on beaches in the EU.[8] For other types of single-use plastics, the directive includes measures to reduce consumption over time as well as measures that require compulsory labelling or extended producer responsibility.[9] The directive also instructs the European Commission to develop guidelines to further clarify whether a product is to be considered single-use for the purposes of the directive (see Box 2).[10]

Open-Ended Approach Using Product Examples or Criteria

Some countries are adopting an open-ended approach, using product examples or criteria to identify single-use plastics. In Vietnam, for instance, the term "single-use plastic products" is defined using specific product examples, but the coverage is left open-ended with bans or reductions introduced over time applying to the entire open-ended category.[11] Another

7. See, for example, TrPMs adopted by countries such as New Zealand (2022), Australia (2021), and Maldives (2021).
8. The European Commission (2018) study conducted by ICF and Eunomia that underpins the impact assessment carried out by the European Commission for its directive states that counts are based mostly on disaggregated items as reported in data sources gathered on beach litter. However, for reporting purposes where it was not important to distinguish between relatively similar items, some items were grouped together. For example, regarding material composition, manufacturing, usage, and policy approach, it was not considered necessary to distinguish between crisp packets and sweet wrappers. It was only possible to use the disaggregation method for categories that contained items reported individually elsewhere in the data sources used by ICF and Eunomia (European Commission, 2018). Cups and cup lids, such as straws and stirrers, are always grouped together so there are no data to indicate what proportion are cups or lids. Where no suitable evidence was available to allow ICF and Eunomia to further disaggregate the data, it was decided to retain the original group.
9. Extended producer responsibility (EPR) generally refers to policies that extend the producer's responsibility for a product to the waste stage of that product's life cycle. "In practice, EPR involves producers taking responsibility for the management of products after they become waste, including collection; pre-treatment, e.g. sorting, dismantling or depollution; (preparation for) reuse; recovery (including recycling and energy recovery) or final disposal. EPR systems can allow producers to exercise their responsibility by providing the financial resources required and/or by taking over the operational aspects of the process from municipalities. They assume the responsibility voluntarily or mandatorily; EPR systems can be implemented individually or collectively" (UNEP, 2023b).
10. European Union, *Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment*.
11. In the case of Vietnam (2022), the Decree on "Elaboration of several articles of the law on environmental protection" provides for the gradual reduction of production and import of single-use plastic products, non-biodegradable plastic packaging, and products and goods containing microplastics with a termination of the production and import of single-use plastics together with various other problematic categories after 31 December 2030. The decree says that "single-use plastic products" means "products (other than non-replaceable attachments) including trays, food containers, bowls, chopsticks, glasses, cups, knives, spoons, forks, straws and other cutlery with plastic components which are designed and marketed with the intention to be used once before being discharged into the environment" (Vietnam, 2022).

Box 2. Definitions Set Out in the European Commission Guidelines on Single-Use Plastic Products

The "European Commission guidelines on single-use plastic products in accordance with Directive (EU) 2019/904 of the European Parliament and of the Council on the reduction of the impact of certain plastic products on the environment" (henceforth termed as "the EC guidelines") provides guidance on the interpretation and implementation of the EU's directive on single-use plastics. The guidelines also sets out definitions of plastics and polymers as well as single-use plastics.

According to the EC guidelines, "plastic" means a material consisting of **a polymer as defined in point (5) of Article 3 of Regulation (EC) No 1907/2006 of the European Parliament and of the Council**, to which additives or other substances may have been added, and which **can function as a main structural component** of final products, with **the exception of natural polymers that have not been chemically modified**" [emphasis added] (European Union, 2019).

The EC guidelines thus make it clear that plastics manufactured with **modified natural polymers**, or plastics manufactured from **bio-based, fossil, or synthetic starting substances, are not naturally occurring** and should therefore be addressed by the EU's directive on single-use plastic products. The guidelines also say the adapted definition of plastics should **cover polymer-based rubber items and bio-based and biodegradable plastics** regardless of whether they are derived from biomass or are intended to biodegrade over time (European Union, 2021).

Point (2) of Article 3 of the EU directive provides the following definition for a single-use plastic product:

"a product that is made **wholly or partly** from plastic and that is **not conceived, designed or placed on the market** to accomplish, **within its life span, multiple trips or rotations by being returned to a producer for refill or reused for the same purpose for which it was conceived**" [emphasis added] (European Union, 2019).

The EC guidelines also provide additional explanation and guidance on single-use plastics, notably on key terms such as: plastic content: wholly or partly made from plastic; single-use; and refillable and reusable nature of the product.

Another key aspect is the importance of design. The EC guidelines say that:

"product design characteristics can help to determine whether a product should be considered as single- or multiple-use. Whether a product is conceived, designed and placed on the market for reuse, can be assessed by considering the product's expected functional life, i.e. whether it is intended and designed to be used several times before final disposal, without losing product functionality, physical capacity or quality, and whether consumers typically conceive, perceive and use it as a reusable product. Relevant product design characteristics include material composition, washability and reparability, which would allow multiple trips and rotations for the same purpose as for which the product was

Box 2. (Continued)

originally conceived. For a receptacle, which is packaging, its reusable nature can be determined in accordance with the essential requirements under the Packaging and Packaging Waste Directive*, including any declaration attesting to the conformity of the packaging with those essential requirements and related standards" (European Union, 2021).

The European Commission guidelines also lay down product description and criteria as provided for in the directive and offer an overview of products with illustrative examples for the various single-use plastics covered by the directive, notably food containers, packets and wrappers, cutlery, plates, straws and stirrers, beverage containers, beverage bottles and cups for beverages (including their caps, covers, and lids), lightweight plastic carrier bags, cotton bud sticks, balloons and balloon sticks, sanitary towels (pads), tampons and tampon applicators, wet wipes, and tobacco products with filters and filters marketed for use in combination with tobacco products (European Union, 2021).

* European Union, *European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste*, OJ L 365, 31.12.1994, p. 10

approach taken by some countries is to set criteria for specific products such as plastic bags or other types of packaging to be considered "single-use". For example, the Australian Capital Territory (2021) Plastic Reduction Act defines detailed criteria for plastic shopping bags to be considered single-use, including the existence of regulation, thickness (i.e. less than 35 microns[12]), and type of polymer material used (made fully or partly of polyethylene). The act also highlights the importance of design and intention, stating that "for the purposes of the act a single-use plastic product is a plastic product that is designed or intended to be used once only." Thus, a product would still be considered "single-use" even if a consumer reused it after the first use or if the product had multiple purposes within the first use.[13]

A review of national regulations also reveals divergent approaches to products included or excluded within the scope of single-use plastics. For example, Australian Capital Territory (2021) excludes compostable bags from the category of single-use plastics while the Maldives (2021), through its Single-Use Phase out Plan, also considers products labelled as bioplastics, compostable, or biodegradable plastics as single-use plastics if the use is intended for one time only.

Approach Defining Specific Single-Use Plastic Categories and Subcategories

While many countries have adopted national legislation using a product-specific or open-ended approach without attempting to categorize various types of single-use plastics, they have

12. A standard unit of measure, micron is a commonly used term for a micrometre, which is a unit of length measuring one-millionth of a metre or one-thousandth of a millimetre (0.001mm) (Label Planet, 2020).
13. An example of a single-use plastic product being used for multiple purposes includes plastic sleeves used to portion fresh herbs for sale, though such plastic sleeves also have other purposes such as protecting the herbs during transport to the supermarket, extending the shelf life of the herbs at the supermarket, protecting the herbs during purchase, and transporting them to the home of the ultimate consumer (Australian Capital Territory, 2021).

often taken a broader approach with regard to single-use packaging prioritized for elimination or reduction. In addition, a review of national and stakeholder submissions to the second session of the INC (INC-2) as well as discussions within the DPP reveals interest in another approach, namely that of identifying single-use-plastic-specific subcategories (WTO, 2023a). These include:

- subcategories of single-use plastics based on specific end-use sectors—e.g. single-use packaging used in personal hygienic kits and other household products (Philippines, 2023), and
- "concept" subcategories where single-use plastics are differentiated according to crosscutting characteristics (such as recyclability) and other terms that are open to interpretation (such as avoidable and unnecessary)—e.g. avoidable, unnecessary, and unrecyclable single-use plastics (Indonesia, 2023; Nigeria, 2023; European Union, 2023).

Contributions by stakeholders to the plastics treaty negotiations has provided additional inputs on the possible categorization of problematic products. The Environmental Investigation Agency (EIA), for example, argues in favour of the concept of "short-lived" plastic products as opposed to "single-use" plastic products with regard to specific categories of problematic and avoidable plastic products, and urges against trying to define "problematic" and "avoidable" as this can be context-dependent (EIA, 2023b).

Another approach to categorization of problematic plastics focuses on product applications and their relevance to reducing plastic waste, which includes many single-use products but not exclusively single-use items. For instance, The Pew Charitable Trusts and SYSTEMIQ (2020) have applied the following categories in their modelling, based on waste characterization data: (i) sachets and multilayer flexibles; (ii) business-to-business packaging; (iii) monomaterial films; (iv) bottles; (v) carrier bags; (vi) food service disposables; and (vii) others.

A submission to the INC by the Ellen MacArthur Foundation (2022) calls for the reduction of plastic production and use focusing on those plastics that have high leakage rates, are short-lived, and are made using fossil-based virgin resources. A similar approach is reflected in a separate submission by the Business Coalition for a Global Plastics Treaty (2023), which emphasizes numerous problematic polymers as well as single-use plastic items based on their high leakage rates and their not being recyclable in practice or at scale.[14] The EMF`s list of products includes single-use plastic cutlery/serve ware, single-use plastic straws, single-use plastic stirrers, and single-use cotton buds with plastic stems (EMF, 2022).

The Organisation for Economic Co-operation and Development (OECD) has not proposed a formal categorization but has referred to end-use sectors to describe various types of single-use plastics. These include consumer goods (e.g. carrier bags, toiletry items), packaging items (e.g. food containers), as well as applications in the agricultural sector (e.g. grain bags and bale wrap, or "single-season" plastic film for mulching) and the medical sector (e.g. blood bags, intravenous tubing, syringes) (OECD, 2021). Numerous scientific experts and environmental non-governmental organizations have also underlined the importance of banning and phasing out single-use plastics that are harmful to health, such as certain plastic packaging materials that contain toxic chemicals. A briefing released by the Scientists' Coalition for an Effective Plastics Treaty (2023) has emphasized the need for clear, consistent definitions of bio-based, biodegradable, and compostable plastics, and accurate labelling based on international independent standards including information on renewable feedstock content, transparency regarding associated chemicals, and disposal. These could be relevant to single-use products made of such plastics. Specific considerations relevant to biodegradable and compostable plastics include:

14. This also reflects the definition of recyclability as laid out by the Ellen McArthur Foundation as "the ease with which a material can be recycled in practice and at scale" (EMF, n.d.-a).

- Whether complete mineralization is achieved within an appropriate product-specific timescale, and also that chemicals and intermediate degradation products such as particles do not result in environmental harm.
- The rate of biodegradation, particularly in the natural environment (to be clarified based on standards), rather than just within industrial facilities.

Specific considerations relevant to bio-based plastics include use of renewable or carbon-based energy, use of land, water, and chemicals like fertilizers and pesticides, competing use with food crops, and prevention of organic waste matter returning to the soil (Scientists' Coalition for an Effective Plastics Treaty, 2023).

A Eunomia Foundation report based on research commissioned by the World Wide Fund for Nature (WWF) identifies various categories of problematic products among 17 core product groups, including a number of single-use-plastic-related product groups, based on various criteria such as properties, uses (or applications), pathways to the environment, and potential for harm when in the environment (WWF, 2023).[15] While the focus of the criteria has been to provide guidance for control measures to address single-use plastics (discussed in Section 3 of this paper), they are also relevant to a discussion on ways to categorize single-use plastics. Some key single-use-plastic-related subcategories identified in that report are illustrated in Table 2 (see Section 3).

While recognizing that additional single-use plastic categories could be envisaged, many of these can already fit into the categories developed in the 2023 WWF study. For example, the Minderoo Foundation in its Plastic Waste Makers Index categorizes single-use plastics into: (i) food bottles; (ii) food packaging; (iii) film packaging; (iv) retail bags; (v) trash bags; (vi) sheet packaging; (vii) non-food bottles; (viii) industrial bags; (ix) laminated packaging; (x) caps and closures; (xi) cups and containers; and (xii) others (Charles et al., 2021).

For "problematic or unnecessary plastic packaging or plastic packaging components", Appendix 1 of the "Plastics Science note by the secretariat" (see Box 1) cites criteria proposed by the New Plastics Economy Global Commitment for their identification (UNEP, 2022).[16] These include:

- It is not reusable, recyclable, or compostable (as per Global Commitment definitions).
- It contains, or its manufacturing requires, hazardous chemicals that pose a significant risk to human health or the environment (applying the precautionary principle).
- It can be avoided (or replaced by a reuse model) while maintaining utility.
- It hinders or disrupts the recyclability or compostability of other items.
- It has a high likelihood of becoming litter or ending up in the natural environment.

Appendix 1 of the "Plastics Science note" advises that "short-lived plastic products" refers to "plastics in packaging and consumer products with the shortest average use cycles – 0.5 and 3 years. The categorization is based on average life span, so some products will have longer life spans. This category includes "single-use plastic products." Appendix 1 says that "single-use plastic products" are "designed and produced to be used once before being thrown away or recycled."

A Chatham House (2023) briefing report for INC-3 on the results of an informal technical dialogue co-chaired by the UK Government and Government of Brazil has also reviewed potential criteria for identifying chemicals and polymers of concern and problematic plastic products. Among these, the criteria to identify

15. The feasibility of control measures for these problematic plastics was then assessed against three additional criteria: (i) technical feasibility (e.g. the availability and viability of alternative materials or processes); (ii) socio-economic feasibility (e.g. the affordability and acceptability of changes, including differential impacts for specific countries or demographic groups); and (iii) likelihood of unintended consequences (e.g. the risk that substitution/reduction/management may have other problematic or worse environmental outcomes). Based on these, certain subgroups of problematic plastic types (including single-use plastics) were identified for which production, consumption, and trade could be either reduced or eliminated without significant negative consequences within a decade of the life of a global plastics treaty (i.e. by 2035) (WWF, 2023).
16. Led by the Ellen MacArthur Foundation, in collaboration with UNEP, the Global Commitment unites more than 500 organizations behind a common vision of a circular economy for plastics (Ellen MacArthur Foundation, 2022).

problematic plastic products and evaluate their environmental and socio-economic impacts which achieved the highest levels of agreement among the group of nominated experts include the following:

- The product has a high propensity for being littered or ending up in the environment with low probability of degradation to safe chemicals.
- The product has a high propensity for being littered or ending up in the environment.
- The product contains microplastics that were generated and/or added during production (to obtain new product characteristics).
- The product is made of oxo-degradable plastics that easily break down into microplastics.
- The product has a high potential for being avoided (or replaced by a reuse model) while maintaining utility.
- The product is not reusable, recyclable, or compostable in practice and at scale.
- The product has a propensity to create entanglement (especially marine animals).
- The product hinders or disrupts the recyclability or composability of other items.
- The product has a propensity to be ingested by animals and microorganisms (aquatic and terrestrial).
- The product contains polymers and chemicals of concern (subject to criteria being determined).

3. Criteria and Proposed Action to Eliminate or Reduce Single-Use Plastics

While the previous section discussed stand-alone approaches, including criteria to define and categorize single-use plastics, this section focuses on criteria that have been proposed to guide action to eliminate or reduce single-use plastics. There is inevitably some degree of overlap in the criteria discussed in these sections. The criteria discussed below have a number of policy purposes including to: clearly define the scope of regulatory action; provide clarity to producers and consumers; and ensure environmental effectiveness as well as practical considerations.[17]

3.1 Existing Criteria in Domestic Legislation on Single-Use Plastics

Domestic legislative action to eliminate or reduce single-use plastic pollution has been guided by several criteria that vary among countries.[18] These include:

(i) Product- and packaging-specific characteristics, such as:

- Polymer types used as the main structural component of plastics, including single-use plastics.
- Polymer types used in single-use plastics (e.g. prohibiting bags of polyethylene, polystyrene containers, or packaging made partly or wholly of polypropylene foam in some countries). In some cases, the single-use plastic definition includes packaging made wholly or in part of expanded polystyrene foam.
- Design characteristics for products (e.g. exemption from prohibition based on whether or not caps or lids are attached to containers or whether metal and glass beverage containers have plastic lids or not) and packaging (e.g. exemption from prohibition based on whether

17. These practical considerations include ensuring that the proposed measures do not create inconvenience due to a lack of viable or affordable alternatives or affect the realization of important objectives such as public health and food safety.
18. Examples of domestic regulations reviewed include those of Malta (2020), Bahamas (2019), Barbados (2019), Rwanda (2019), Jamaica (2018), and the EU's directive on single-use plastic products (European Union, 2019).

single-use packaging such as beverage containers are reusable, recoverable, and recyclable).

- Characteristics related to a range of different environmental sustainability objectives based on domestic policies and legislation (e.g. the EU directive refers to sustainability objectives such as ensuring biodegradability, including in the marine environment, and the need to avoid contributing to microplastic pollution, introducing EPR in line with the polluter-pays principle, promoting both sustainable alternatives and the transition towards a circular economy through innovative solutions such as more sustainable business models, reuse alternatives, and substitution of material).
- Implications for human health, such as presence of specific chemicals harmful to human health.

(ii) Other guiding criteria (e.g. including socio-economic considerations and end-use):

- Availability of affordable, reasonable, or suitable alternatives and substitutes that are more sustainable.
- Feasibility of changing consumption patterns.
- Exemption of containers used for food or medical purposes.
- Exemptions based on whether a product is used for specific purposes (such as medical and health purposes, to contain live aquatic creatures, to store certain food items such as agricultural produce, fish, meat, or poultry, or for the disposal of waste).

3.2 Single-Use Plastic Categories and Possible Approaches for Guiding Control Measures in the Plastics Treaty Context

In the plastics treaty context, many governments have voiced support for consideration of options to ban, phase out, and/or reduce the use of problematic and avoidable plastic products. After the second session of negotiations for the plastics treaty (INC-2), which took place from 29 May–2 June 2023 in Paris, an official summary of the proceedings said "there was broad support for establishing criteria to determine and prioritize problematic and avoidable plastic products, including unnecessary or short-lived products. Some members viewed this option as complementary to or a prerequisite for measures to ban, phase out, reduce or control the production, sale, distribution, trade and use of specific problematic and avoidable plastic products by identified dates. Several members also supported setting up an inventory" (INC Secretariat, 2023). In addition, some members noted the need for exemptions for certain categories of plastic products, such as those vital in the health sector and those for which alternatives are not available or accessible. Further, a few members favoured a gradual phase-in of measures (INC Secretariat, 2023).

Many governments also underlined the importance of a clear definition of problematic and avoidable plastic products informed by science-based evidence. On process, some supported calls for intersessional work during the treaty negotiation process to further identify criteria for such products, while others said criteria should be nationally determined. Some governments suggested that annexes could include criteria and lists of plastic products to be phased out or banned, for subsequent amendment over time through an evidence-based assessment process, following the example of a number of existing multilateral environmental agreements. Several governments also highlighted the importance of greater transparency and labelling of all plastic products to provide information about the material and chemical composition of products, which is relevant to their environmental and health implications as well as to their management at end of life (INC Secretariat, 2023).

A review of country and stakeholder submissions to INC-2 reveals a range of proposals on

guiding criteria for identifying specific plastic polymers, chemicals, and plastic products of concern (including single-use plastics) that could be listed in an annex of a future plastics treaty for the purpose of control measures to eliminate and restrict them. These are reflected in the submissions by various governments and groupings including the High Ambition Coalition to End Plastic Pollution (see Box 3).[19] In terms of criteria, some members also called for the inclusion of issues such as the leakage and littering potential of plastic products (INC Secretariat, 2023).

Box 3. Criteria Proposed in Submissions to INC-2 Relevant to Identifying Polymers, Chemicals of Concern, and Plastic Products for Elimination or Restriction

Sample of suggestions in INC submissions on criteria for polymers, chemicals of concern, and plastic products (also relevant to single-use plastics):

- **Harmful to the environment and human health.** Possible criteria for identifying polymers and chemicals include, based on inherent properties, substances that have slow or no degradation in the environment, bioaccumulate, and/or have long-term toxic effects (e.g. carcinogenic, mutagenic, reprotoxic, endocrine disruptors).
- **Impeding circularity.** Possible criteria for identifying polymers, chemicals, and/or products that hinder recyclability or reuse could include composition and polymer mix (e.g. mixed polymer or mixed material packaging).
- **Risk of release to the environment.** Possible criteria for identifying plastic products could include high litter risk and/or the necessity of products and/or the possibility for recycling and/or the availability of environmentally sound substitutes and/or content of intentionally added microplastics.
- **Importance of the plastic application in the plastic value chain.** This should take account of its function and the ability to avoid or replace its use (redundancy).
- **Recyclability.** The ability to collect, sort, and recycle the plastic material in an environmentally sound manner.

Sample of criteria noted in INC submissions relevant to single-use plastics:

- Avoidable, unnecessary, and unrecyclable single-use plastics that can also be replaced.
- Problematic and unnecessary single-use plastics.
- Unnecessary single-use plastics prone to becoming litter.
- Single-use plastics where alternatives are available, accessible, and affordable.
- Products that are harmful to human health and the environment, and that impede the transition to safe circularity in the plastics sector.

Source: High Ambition Coalition to End Plastic Pollution (2023); Indonesia (2023); Nigeria (2023); Egypt (2023), European Union (2023), Sierra Leone (2023); Switzerland (2023); Africa Group (2023); Uganda (2023); Malaysia (2023).

19. A group of like-minded countries formed the High Ambition Coalition to End Plastic Pollution after the United Nations Environment Assembly adopted the resolution in March 2022 to launch negotiations on a legally binding international instrument on plastic pollution. Norway and Rwanda co-chair the coalition, which (as of October 2023) has 60 members from a broad diversity of regions and levels of economic development committed to developing an ambitious international legally binding instrument to end plastic pollution by 2040 (High Ambition Coalition to End Plastic Pollution, n.d.).

In the INC process, a range of stakeholders have also proposed criteria for products and materials to be eliminated or restricted, including proposals for the inclusion or exclusion of specific products in an annex to the plastics treaty, many of which are also relevant to certain single-use plastics. Among the various proposals are:

- Eco-criteria for plastic products and packaging for listing in an annex or registry. Such eco-criteria could be general (e.g. durability, biodegradability, compostability, recyclability, reusability, circularity, safety) or product- and sector-specific (e.g. recycled content, packaging, agriculture, fishing gear), and also including labelling requirements (EIA, 2023a).
- Use of unstainable feedstock in the manufacture of plastic products and not meeting recycled content targets, which could trigger potential measures such as levies, taxes, and duties on non-compliant polymer producers and virgin fossil fuel plastic product manufacturers (Minderoo Foundation, 2023).
- Production limits on polymers, products, and packaging that cannot be viably recycled at scale, with non-recyclable plastics being limited to essential applications only, where the composition that determines non-recyclability is necessary for the given application, with no viable alternatives (Minderoo Foundation, 2023).
- Focusing initially on priority products (e.g. those with high leakage rates or that are difficult to collect and recycle) (EIA, 2023b).
- Focusing on products with high leakage rates that are short-lived and made using fossil-based virgin resources (Business Coalition for a Global Plastics Treaty, 2023).
- Prioritizing unnecessary or non-essential plastic applications (IPEN, 2023).
- Taking a comprehensive life-cycle assessment comparison of plastics (including single-use) to non-plastic alternatives to determine the environmental and socio-economic impacts, in a fair, equitable, and balanced manner (including, for instance, the impact on food security for biodegradable plastics (OPEC, 2023).

As noted earlier, decision-making on the regulation of single-use plastics has an important end-use dimension, including in regard to specific sectors, such as packaging, agriculture, or healthcare (OECD, 2021). Within the broad categories identified, there are also sectoral subcategories that will warrant specific approaches. In the packaging sector, for example, it could be useful to distinguish between unnecessary and additional packaging for pre-packaged goods and packaging that may be important for product preservation, safety, and transport—particularly for perishables such as vegetables, fruit, fish, and meat. In the consumer goods sector, specific single-use plastic subcategories such as single-use toys could be substituted with environmentally sustainable alternatives, including reusable ones.

In the textile sector, concern is growing about various short-lived products associated with "fast fashion" which, while not necessarily single-use, are used only for a few times before disposal. In the construction sector, many plastics could be considered as single-use in that they are only used once (e.g. housing insulation or tubes and pipes used for plumbing), but they are not "short-lived" as they remain in use over a long period. Within environmentally sensitive sectors such as agriculture and fisheries, there is scope for differentiating products that are single-use or short-lived (with a high risk of leakage into the soil or water) from products that are used only once but stay out of the environment for many years or decades. Global cooperation to tackle single-use plastics will need to account for and address such nuances.

In addition, health considerations are vital to consider when seeking to address single-use plastics. Harmful health-related impacts linked to single-use plastics exist across the life cycle of these plastics. A report by the Minderoo Monaco Commission highlights that workers

may face increased risk of various cancers across the production process for plastics. There can be negative health impacts on people resulting from use of plastic products, such as endocrine function disruption caused by plastic additives. Chemical-laden micro and nano plastic particles formed through the environmental degradation of plastic waste can enter living organisms, including humans, with growing evidence of their physical and toxicological effects (Landrigan et al., 2023).

Proposals for intersessional work at INC-2 included calls for discussion among members of "criteria to identify specific problematic and avoidable plastic products for ban, phase out, reduce or control the production, sale, distribution, trade and use" as well as study by the Secretariat to compile a list of "problematic single-use plastics" banned by governments and existing criteria used by governments (INC Secretariat, 2023).

Control Measures Related to Trade

A broad range of countries have adopted and are implementing trade-related control measures related to single-use plastics. In terms of specific measures to eliminate, reduce, and restrict single-use plastics, most of the national legislation reviewed provides for bans or prohibitions on the manufacture, sale, and/or import of specific types of single-use plastics in the short term. Some countries also include the eventual phase-out of certain single-use plastics by a target date. In some cases, countries such as Canada and Mauritius have specifically included a ban on exports of single-use plastics as well as a ban on domestic manufacturing and imports, while others such as Bahrain have exempted exports while banning single-use plastic bags domestically (WTO, n.d.-a.; INC Secretariat, 2023; UNEP, 2018; Duke University, n.d.; University of Portsmouth, n.d.; De Anzizu, 2023).

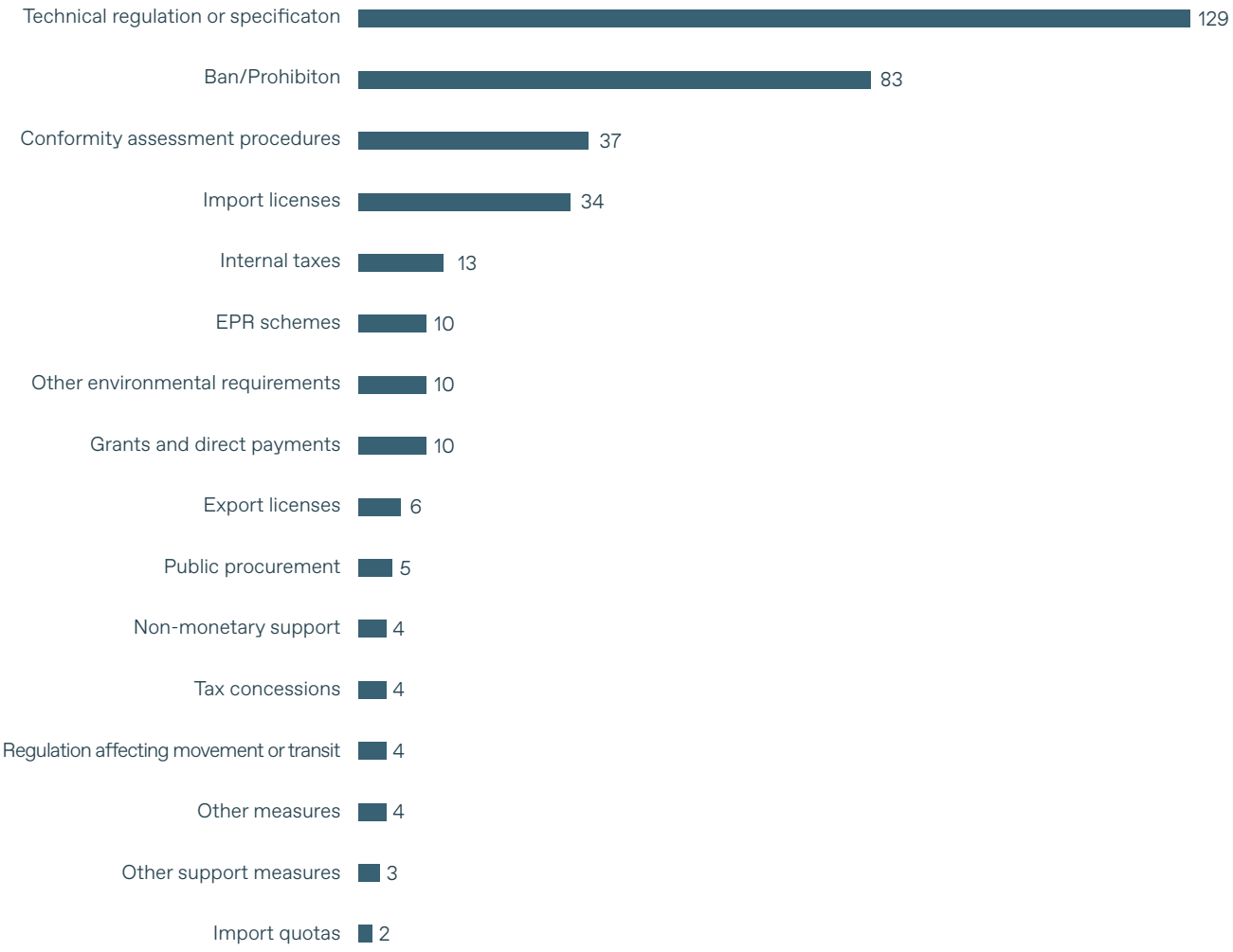
The WTO Secretariat has compiled an overview of various trade-related policy measures (TrPMs) based on data available in the WTO's Environmental Database (EDB) as well as others that were obtained through a survey of trade-related measures of WTO members.[20] Addressing single-use plastics was the second most common objective pursued by TrPMs.[21] These TrPMs were often comprised of one or more harmonized type of measures listed in the WTO`s EDB such as bans, technical regulations, or import licensing measures (see Figure 1).[22] Of the various measures targeting single-use plastics notified to the WTO between 2009–2021 and shared by DPP co-sponsors as per the survey, two-thirds (60 of 93) were bans and prohibitions. Some targeted single-use plastics, particularly plastic bags as well as other single-use products such as food containers and tableware, straws, cotton buds, and plastic bottles (IISD, 2023).

Submissions to INC-2 have also emphasized that trade measures could be among the control measures to eliminate or reduce problematic plastics or those of concern (including single-use plastics). Among measures proposed for inclusion in the plastics treaty, for instance, are the elimination or phase-out of manufacturing, import, export, and placing on the market of plastic products.[23]

Figure 1 provides illustrative examples of various types of TrPMs to eliminate, reduce, and/or restrict production and trade in single-use plastics that have been introduced in national legislation or proposed in submissions by countries to the INC process.

20. "The EDB contains all environment-related notifications submitted by all WTO Members in a given year as well as environmental measures and policies mentioned in the Trade Policy Reviews of WTO Members.
Data in the EDB is available for notifications made between 2009-2021" (WTO, 2023e).
21. For example, 63% of bans targeted single-use plastics, followed by technical regulations or specifications (included in 49 TrPMs addressing single-use plastics, often combined with a ban), internal taxes, and EPR schemes (13 TrPMs), import licences (10 TrPMs), and support measures (9 TrPMs) such as grants, tax concessions, and government procurement (WTO, 2023e).
22. The total number of TrPMs between 2009–2021 gathered from both sources amounted to 223 obtained from 85 different WTO members. Each of these TrPMs can (and often does) include more than one harmonized type of measures used for the WTO`s EDB. For example, one TrPM could include both a technical regulation and a conformity assessment measure. Therefore, the total count of measures exceeds the total number of TrPMs.
23. For example, the Africa Group (2023) submission provides for measures to reduce trade of specific plastic products, polymers, and additives, and the submission emphasizes a "ban or control of specific plastic products, including single-use plastics, where alternatives are available, accessible and affordable with corresponding annexes." The EU (2023) submission also states that "the instrument should contain measures restricting the import of plastic products regulated (not meeting the instrument's requirements and standards) under the instrument from non-parties."

Figure 1. Harmonized Types of Measures Relevant to Addressing Plastic Pollution (2009–2021)



Note: The numbers represent the counts of various measures targeting single-use plastics that appear in TrPMs notified to the WTO between 2009–2021 and shared by DPP co-sponsors through a survey as reported by the WTO. Each TrPM can (and often does) include more than one element fitting a harmonized type and thus the total count exceeds the total number of TrPMs.

Source: WTO (2023e).

Figure 2. Illustrative Examples of Trade-Related Policy Measures to Address Single-Use Plastics

National Legislation

Trade-related policies directly targeting single-use plastics

- Ban on the manufacture, use, import, or sales of single-use plastic items
- Levy on single-use carrier bags
- Levy on single-use items
- Technical regulations and specifications
- Internal taxes and EPR schemes
- Import licences
- Government procurement preferences to substitutes and alternatives
- Support measures such as grants, tax concessions, and government procurement

Trade-related policies targeting plastics that directly impact single-use plastics

- Ban on the manufacture, use, import, or sale of all polythene bags
- Ban on the production, import, marketing, and use of plastic bags and oxo-biodegradable films
- Ban on the sale of plastic carrier bags of less than 50µ (microns)
- Ban on the export, import, manufacture, and sale of bags <30µ (microns)
- Ban on the manufacture, import, and distribution of plastic utensils and polystyrene boxes
- Ban on the import, manufacture, sale, and distribution of plastic bags, plastic beverage bottles less than 1.5 litres, plastic straws, polystyrene plates, cups and take-away containers, plastic cutlery, plastic sheet for food wrapping, plastic flags
- Levy on consumer goods packaged in polythene bags
- Levy on non-biodegradable plastic bags
- Labelling requirements

Trade-related policies that indirectly impact single-use plastics

- Removal of value-added tax from biodegradable alternatives to lower cost
- Tax exemptions for materials such as (sugar cane, bamboo, paper, and potato starch) to encourage the manufacture of alternatives to single-use bags.

Country Submissions to the Plastics Treaty Process

Trade-related policies directly targeting single-use plastics

- Ban on or control of export and import of single-use plastics

Trade-related policies targeting plastics that directly impact single-use plastics

- Measures to reduce/phase-out trade of specific plastic products, polymers and additives
- Import and export restrictions, including from non-parties
- Standards and criteria for design of products placed on market and for product and delivery systems that reduce plastics use
- Transparency of the material and chemical composition of products

Trade-related policies that indirectly impact single-use plastics

- Removal of fossil fuel subsidies and negative fiscal incentives, such as subsidies that support expansion of plastics production including virgin polymers

Source: INC Secretariat (2023); Duke University (n.d.); University of Portsmouth (n.d.); De Anzizu (2023).

Some submissions specifically reflect export instruments or export-related measures (e.g. Switzerland (2023) and Ecuador (2023)) to ensure that countries that have banned sales or imports domestically do not continue to export them. In addition to export and import bans, proposals related to standards also seek to address pollution from single-use plastics. For instance, Ecuador (2023) has called for provisions in the treaty to "encourage the eco-design of plastic products through the adoption of eco-criteria (e.g. related to durability, biodegradability, compostability, recyclability, reusability, circularity, safety) as well as for product and service delivery systems that reduce the overall use of plastics, and in line with guidance adopted by the Conference of the Parties."

Criteria and Considerations for Trade-Related Polices in the WTO

Discussions on criteria and considerations for trade-related policies have also been ongoing in the context of the WTO's DPP. An initial analysis by the WTO Secretariat of the 39 trade-related policies and measures restricting the use, production, consumption, and/or trade of the specific case of single-use plastic bags reveals that while all measures had roughly the same objectives and mechanisms (i.e. bans coupled with certain exceptions and specifications), they varied considerably on how they identified single-use plastic bags. The measures used one or more of four criteria to identify such bags, namely: (i) thickness of material (e.g. < 50 microns); (ii) usage (e.g. purpose or capacity); (iii) polymer input (e.g. bio or polymer-based); and (iv) end-of-life properties (e.g. degradability). The Secretariat noted (as highlighted earlier) that there were important variations in each criterion. For example, TrPMs that relied on the "thickness" criterion varied from as low as 15 microns to as much as 100 microns to differentiate single-use plastic bags (WTO, 2023c).

Among stakeholder contributions at the DPP, The Pew Charitable Trusts applied several criteria for potential interventions to address plastic pollution that are also relevant both to identifying interventions to eliminate and reduce problematic single-use plastics and promoting their substitutes and alternatives (WTO, 2023b). These include:

- Technology readiness level: Is a solution available today?
- Performance: Does the intervention satisfy performance and health requirements?
- Convenience: Is the intervention acceptable for lifestyle and convenience?
- Affordability: Are the cost implications of the alternative acceptable?

The WTO Secretariat has compiled criteria mentioned in the DPP discussions, which it has noted as a potential basis for harmonized approaches and prioritization of trade-related action on unnecessary and harmful plastics, plastic products, and other goods (including single-use plastics) (see Table 1).

Table 1. WTO Secretariat Compilation of Harmonized Criteria Used when Prioritizing Trade Action on Unnecessary or Harmful Plastics, Plastic Products, and Other Goods

Relative importance in leakage
Relative importance in total plastics waste generation
Environmental damage
Relative importance of material flows of plastics moved by trade
Risk of pollution
Substitutability for the same functionality and cost effectiveness (including in the health system)
Human health
Technical and economic viability of recycling the product
Food security
Potential to negatively impede circularity
Single vs. multi-use goods
Embedded and related (e.g. transport) greenhouse gas emissions
Multimaterial, multipolymer structure
Negative impact in non-plastic materials industries being substituted by plastics
Other: Costs of cleaning up and losses for tourism, fisheries, and shipping

Note: The WTO Secretariat advanced the effort to draw together harmonized criteria to help structure and compute the written submissions provided by delegations and stakeholders in response to the guiding questions prepared for an exploratory workshop on reduction and circularity to tackle plastic pollution organized in cooperation with UNEP on 27 April 2023.

Source: WTO (2023c).

A range of delegations and stakeholders at the WTO have highlighted the positive contribution trade-related policies could make to reduce plastic pollution and potential actions that could be taken. Some members have expressed interest in pursuing collective actions, including pledges or voluntary actions, that could spur action and impact, including in ways that support the plastics treaty process by providing concrete examples of what countries can do in this space. The WTO Secretariat has noted, for instance, that "several delegations shared their domestic plans seeking the gradual reduction [or elimination] of trade, production and/or consumption of [all or certain] single-use plastic products to protect life, health, the environment and/or important economic sectors" (WTO, 2023c).

At the WTO, a diversity of delegations have also advanced suggestions and considerations with regard to enhanced cooperation on trade policies that could be pursued under the DPP and that are relevant to the reduction of single-use plastics. These include: identifying (through a survey) best practices and policies in terms of TrPMs; exploring voluntary principles related to the design of trade-related measures to address plastic pollution, such as transparent information on labelling, including harmonizing labels and product identifiers; identifying (effective) measures (in particular adopted by developing members) that would help reduce the most harmful or damaging plastics, and encourage or support their adoption (including through self-reviews); increasing aid for trade,

trade, and investments in waste management and other relevant technologies in least develop countries and other developing members, which could be relevant to tackling pollution associated with single-use plastics; developing guidelines for eliminating single-use plastics and harmonizing policies on recycling and plastic packaging standards; considering commitments focused on bans and levies in order to address harmful and unnecessary plastics such as single-use plastics and problematic plastics; further examining well-coordinated measures to address the issue of inefficient public support for fossil fuel-based polymers, while taking into account the situation in each economy and industry (WTO, 2023c).

In addition, stakeholders engaged in the DPP process have proposed trade-related options for enhanced cooperation that are relevant to single-use plastics. These include: coordinated regional or domestic bans on certain products or problematic polymers, reducing subsidies to fossil fuels/virgin plastics production, and facilitating technology transfer for refill and recycling technologies (The Pew Charitable Trusts); limiting fossil fuel production and consumption, increasing the circularity of plastic products and materials, and investing in environmentally sound waste management (Minderoo Foundation); promoting packaging that is 100% reusable, recyclable, or compostable and free of hazardous chemicals, and promoting reuse models (Ellen McArthur Foundation); and packageless delivery systems (Quaker United Nations Office), including through international standards and by harmonizing definitions. The Centre for International Environmental Law has noted that unnecessary and problematic plastic products also warrant policy attention, including in the trade arena. These include recyclable plastics that, in practice, are uneconomic or too difficult to recycle due to their size or how they are combined or multi-layered with other plastics. The centre has proposed regulating single-use plastic goods through a "positive list" setting out the plastics allowed to be produced and traded, along with some conditions and a few exceptions for necessary uses (WTO, 2023c).

In the DPP discussions, some stakeholders also suggested that WTO members could examine the policies they have already enacted and consider how they could be expanded to other countries with experience-sharing helping to foster coherence around best approaches (WTO, 2023b; IISD, 2023). Policies could also be expanded thematically to cover additional products. Given geographic differences in terms of the items that contribute most to plastic leakage, regional differentiation and alignment in which products are targeted by countries may help maximize the impact of measures.

Various challenges were noted during DPP discussions for consideration as governments work to tackle single-use-plastic-related pollution through trade-related measures. These include:

- Global plastic production and consumption far exceeding the capacity of waste treatment facilities.
- Fragmented regulatory approaches, lack of global regulations, and the lack of granular data (including clear Harmonized System (HS) product codes) to support and inform the development of domestic and international approaches to plastics and facilitate the transition to a circular economic model.
- Adaptation challenges for companies facing major changes in their business model including: challenges to access technologies and knowledge for the development of new products; and (ii) the difficulty differentiating products, both at the level of their tariff headings and through internationally recognized certifications and labelling highlighting the value of products with less plastic content.
- The availability of alternatives to single-use plastics at reasonable cost (WTO, 2023c).

- Ensuring consideration of the local environmental and socio-economic context in developing countries to ensure that measures taken reflect wider sustainable development concerns, including implications for participation in international supply chains and sectors important to the trade opportunities of developing countries.

In addition to the DPP, discussions have also taken place in the WTO Committee on Trade and Environment around trade-related regulatory measures on single-use plastics such as bans (WTO, 2021b; WTO, 2023c). In the Committee of Technical Barriers to Trade, countries have also shared experiences and good practices in plastics regulation and policy including domestic regulatory initiatives to prohibit or phase out single-use plastics (WTO, 2023d).

Criteria and Options to Guide Future Action on Single-Use Plastics Over Different Timeframes

Future actions on single-use plastics, including those taken pursuant to INC negotiations and DPP discussions would benefit from greater definitional clarity. Such clarity could be based on the various criteria proposed by countries (in the context of their domestic regulations and submissions to the INC) as well as by stakeholders.

For example, the definition for single-use plastics developed in the context of the EU directive on single-use plastic products could offer useful guidance for countries seeking to further develop and clarify their own definitions based on various criteria. A submission by the Ellen McArthur Foundation (2023) to the third session of the INC notes that there is already significant alignment regarding the plastic materials, formats, and components most frequently identified as unnecessary or problematic.

Following is a list of criteria used by Global Commitment signatories (which includes businesses representing more than 20% of the global plastic packaging market and 50 governments) and members of the Plastics Pact Network (national initiatives across five continents including developing countries[24]) to help identify problematic or unnecessary plastic packaging or plastic packaging components. This list of criteria is also relevant to identify categories of single-use plastics that are priorities for action:

- It is not reusable, recyclable, or compostable in practice and at scale.
- It contains, or its manufacturing requires, hazardous chemicals that pose a significant risk to human health or the environment (applying the precautionary principle).
- It can be avoided (or replaced by a reuse model) while maintaining utility.
- It hinders or disrupts the recyclability or compostability of other items.
- It has a high likelihood of being littered or ending up in the natural environment (EMF, 2023).

In addition, according to the Ellen MacArthur Foundation (2023) submission, members of the Consumer Goods Forum (CGF) have aligned on Golden Design Rules for Plastic Packaging (GDRs), including a largely overlapping list of "problematic elements" to be removed from packaging.[25] This could also include single-use packaging. The EMF submission also provides an illustrative list of such plastic types and items most frequently identified as unnecessary or problematic by relevant voluntary initiatives, namely the Global Commitment signatories and a number of plastics pacts, with some also reflected in the CGF GDR for plastic packaging (see Annex Table A.5).

In the context of packaging, certain specific problematic single-use plastics which are not

24. See EMF (n.d.-b). Plastics pacts that have published a list of problematic and unnecessary plastic types and items include Canada, Chile, France, Kenya, Poland, Portugal, South Africa, United Kingdom, and United States (EMF, 2023).
25. The Consumer Goods Forum is an organization that brings together consumer goods retailers and manufacturers together globally. The GDRs were developed by the CGF Plastic Waste Coalition of Action. The GDRs aim to change the way packaging is designed to keep it in the economy and out of the environment. The nine GDRs provide a framework that aims to drive innovation and scalable actions that will result in less plastic packaging overall and easier to recycle plastic packaging by 2025 (Canada Plastics Pact, n.d.).

recyclable in practice and at scale have also been identified. These include sachets and expanded polystyrene packaging. There are also problematic items such as asthma inhalers designed in a non-refillable manner (World Against Single Use Plastic, 2023), and cigarette butts (the most littered item globally) with plastic filters made from cellulose acetate that are photodegradable but not biodegradable, taking up to 15 years to break down, during which thousands of plastic microfibres are created (No More Butts, 2023).

Another stakeholder-developed approach is laid out in the Eunomia Foundation report based on research commissioned by the WWF (2023). As referenced in Section 2, the report identifies various categories of problematic products among 17 core product groups, including some single-use-plastic-related product groups, based on various criteria such as properties, uses (or applications), pathways to the environment, and potential for harm when in the environment. These criteria provide a basis for further action that could include:

- Immediate or near-term measures including elimination, restriction, or reduction. These are particularly relevant to single-use plastics that may be deemed unnecessary and could be substituted by environmentally sound and functionally effective and affordable non-plastic substitutes or alternatives.
- Medium-term measures including elimination, restriction, or reduction based on additional considerations such as where substitution may depend on the development of environmentally sound and functionally effective and affordable non-plastic substitutes or alternatives that may not be available immediately and take time to develop.
- Maintaining exemptions, particularly for single-use plastics warranting special consideration due to public health applications and where replacement by environmentally sound and functionally effective and affordable non-plastic substitutes or alternatives is not considered to be feasible in the near to medium term.

These possible approaches are illustrated in Table 2 with specific examples of single-use plastic categories and illustrative examples of products that could be covered. Drawing on the categorizations of single-use plastics discussed in Section 2, as well as key considerations found in country and stakeholder submissions to the plastics treaty process, Annex Table A.1 includes the categories of single-use plastics listed in Table 2, and further adds to it by listing specific considerations relevant to determining the type of action and timeline including technical and socio-economic feasibility and the likelihood of unintended consequences.

Table 2. Possible Approaches to Single-Use Plastic-Related Categories with Illustrative

	Single-use plastics for immediate or near-term elimination, restriction, or reduction	*Single-use plastics relevant for medium-term elimination, restriction, or reduction based on additional considerations*	*Single-use plastics warranting special consideration due to public health applications*
Product group	**Product subgroups**		
Packaging	Single-use plastic packaging used for food and beverage take-outs and delivery, including Styrofoam. Unnecessary, excessive, or problematic single-use or short-lived plastic packaging used for beverages, pre-packaged foods (including sachets and multimaterial, multipolymer packaging. Unnecessary or excessive single-use business-to-consumer packaging for cosmetics and household products (e.g. individually plastic wrapped magazines and newspapers, plastic carrier bags, plastic sample bottles of personal care products, plastic packaging used for distribution of online consumer purchases).	Single-use plastic packaging for long-distance transport of food, beverages, and fresh produce including perishables such as meat and fish.	Single-use plastic packaging for personal protective equipment, medical devices, pharmaceuticals.
Specific plastic items	Single-use and short-lived items such as plastic balloons, cutlery, plates, cups, disposable cigarettes, earbud sticks. Single-use, short-lived items that use plastic fibres, such as wet wipes, cigarette butts, disposable vacuum filters, plastic tea bags.		Single-use, short-lived plastic fibres, such as filters in engineering systems, personal protective equipment masks.
Other single-use plastic categories for priority consideration	Single-use plastic products made with polymers of concern (i.e. using virgin polymers, non-recyclable polymers, and harmful additives or those containing microplastics). Single-use plastic products that may be deemed problematic (such as being prone to littering) in a national or regional context.		

Source: Authors' adaptation building on WWF (2023) classification and materials reviewed for this paper.

4. Options for Trade-Related Cooperation and Action on Single-Use Plastics in International Policy Processes

Numerous pathways exist for countries to eliminate, restrict, reduce, and/or phase out the production, sale, use, export, and/or import of single-use plastic categories along varying timeframes based on the considerations outlined in Annex Table A.1. This can include action involving control measures taken domestically, collectively through regional initiatives, or through international cooperation. Examples of such control measures are identified in Annex Tables A.2 and A.3 and include trade policy options aimed at eliminating or phasing out as well as restricting and reducing the use of single-use plastics.

In terms of trade-related cooperation and action, countries have many options at the bilateral, regional, and multilateral levels. At the multilateral level, this could involve legally binding obligations that address single-use plastics in the larger context of eliminating or restricting problematic, harmful, and avoidable plastics within the plastics treaty. It could also include cooperative action pursued through the WTO's DPP, as well as WTO committees such as the Committee on Trade and Environment and the Committee on Technical Barriers to Trade. In addition, stronger cooperation and synergies can be pursued among organizations whose work is relevant to tackling plastic pollution.

The range of options and pathways are further discussed in this section, starting with those that could be pursued in the context of the WTO and the plastics treaty process then others that could be pursued though initiatives outside of these fora.

4.1 Options and Pathways for Trade-Related Cooperation on Control Measures in the Context of the WTO and the Plastics Treaty

Based on the criteria and considerations for trade-related cooperation on control measures discussed in Section 3, Annex Tables A.2, A.3, and A.4 illustrate options for trade-related cooperation that could be pursued to eliminate and/or restrict production, consumption, and trade in the context of the plastics treaty and the WTO. These include:

- Elimination and/or phase-out of single-use plastics focusing on production and trade in single-use food and beverage packaging; unnecessary, excessive, or problematic single-use or short-lived packaging; single-use, short-lived fibres; and other single-use and short-lived items.
- Restriction and/or reduction of the production, consumption, import, and export of single-use plastics focusing on other necessary single-use, short-lived items.
- Reuse and substitution of single-use plastics, including through promoting alternative business models such as those based on reuse and refill as well as environmentally sustainable and effective non-plastic substitutes and alternatives. Transparency could also be improved by expanding notification efforts on non-tariff measures applicable to plastic substitutes for single-use plastics. In addition, cooperation could be pursued on common criteria or standards for the design of products placed on the market, for alternative business models based on reuse, "plastic free", "packageless", and for environmentally sound and effective non-plastic substitutes (including based on their life cycle environmental impact).

Governments may wish to tailor some of these options by varying timeframes for implementation, ranging from immediate elimination of certain single-use plastic product categories[26] to restrictions and longer-term phase-out targets for other categories based on technical, socio-economic, and environmental impact considerations as outlined in Annex Table A.1. They could also expand successful single-use-plastic-specific policies to a larger group of countries and/or target additional single-use plastic categories that may have been excluded from existing legislation, including those considered problematic in a national and regional context (IISD, 2023).

Within the DPP, one option for participating WTO members is to make a compilation of specific categories or groups of problematic single-use plastics as a complement to DPP ministerial statements that could be open-ended and evolving (TESS, 2023). This could include specific single-use plastics as well as broader single-use plastic categories. Such a compilation could include products or categories where most countries are already taking measures (e.g. single-use plastic bags and other forms of single-use plastic packaging). It could also contain products or categories for which countries may be considering action, individually, collectively, or regionally in the near future, while waiting for a multilaterally agreed outcome from the plastics treaty negotiations and based on scientific and stakeholder-led evidence.

Examples of specific problematic products that members participating in the DPP could consider including in an illustrative and evolving compilation include sachets, expanded polystyrene packaging, or cigarette butts. Illustrative examples of problematic single-use plastic categories that DPP participating members could consider include:

- Single-use packaging.
- Single-use plastic products made with polymers of concern (i.e. using virgin polymers, non-recyclable polymers, and harmful additives, or those containing microplastics).
- Single-use products that can be readily replaced by affordable non-plastic substitutes
- Specific products deemed problematic (such as being prone to littering) in a national or regional context such as sachets or asthma inhalers.

Given the evolving and open-ended nature of such a compilation, additional products and categories could be added, including those on which countries may decide to prioritize action on control measures pursuant to a plastics treaty.

Specific trade-related instruments that are relevant for countries to consider include import and export bans and restrictions, import tariffs, environmental fees, charges and taxes, and licensing arrangements. Other trade-related measures can include technical regulations and standards that support environmentally sustainable and safe products and business models as well as disciplines to address subsidies for fossil fuels and plastics.[27]

26. For example, they may wish to take note of a submission made to the DPP by The Pew Charitable Trusts that calls for greater focus on tackling, including through trade policies, five product categories that make up 85% of all plastic pollution into the ocean: monomaterial films, bottles, sachets, multilayer films, and household goods (WTO, 2023. According to Pew's modelling, the "reduce" intervention is essential to tackle these categories, meaning reduction policies are needed to address 25% of monomaterial films, 45% of carrier bags, 43% of bottles, and 44% of sachets and multilayer films.
27. In the context of discussions in the DPP, delegates have discussed challenges and considerations with regard to substitutes and alternatives including the importance of avoiding substituting one environmental problem with another and the need to assess the full life-cycle consequences of substitutes and alternatives when imposing restrictions on plastics and plastic products. Delegates have also stressed the importance of easy availability of alternatives that were affordable. The United Nations Conference and Trade and Development has also pointed out the higher tariffs often faced by substitutes (in addition to their already high costs compared to conventional plastic products) and stressed the need to reduce applied tariffs on substitutes and expand notification efforts on non-tariff measures applicable to plastic substitutes (WTO, 2023c).

4.2 Options and Pathways for Trade-Related Cooperation in Other Fora

Beyond the plastics treaty and WTO processes, trade-related cooperation on single-used plastics will also benefit from cooperation with a range of international organizations with expertise and activities relevant to the transparency and better monitoring of trade flows and the strengthening of national regulatory and implementation capacity. These organizations and initiatives include:

- The World Customs Organization (WCO), where the HS could be amended in ways that disaggregate a wider range of single-use plastics, focusing on those identified in national legislation as of high concern from the perspective of plastic pollution, and to reveal information about "hidden" single-use plastic packaging associated with trade in certain products. The current HS amendment cycle at the WCO provides an immediate and critical opportunity for governments to strengthen the empirical foundation for national policies and trade-related cooperation to tackle plastic pollution (Eyzaguirre & Birkbeck, 2022).
- The International Organization for Standardization could help in identifying and addressing "standards gaps" where additional international standards and criteria will be required for production and sustainability in trade across the life cycle of plastics, including for objectives such as product design, reuse, refill systems, environmental labelling, recycling, and substitute materials as well as support for their development and implementation (Deere Birkbeck et al., 2023).
- The Basel, Rotterdam, and Stockholm conventions that regulate trade in plastic waste and harmful chemicals, where the scope and coverage of these conventions could be strengthened or expanded to include harmful chemicals and additives that may be present in single-use plastics and to cover a wider range of plastic wastes associated with short-lived textiles.
- The Green Customs Initiative, where the secretariats of the Basel, Rotterdam, and Stockholm conventions partner with the WCO, Interpol, and UNEP to enhance the capacity of customs and other border control officers to monitor and facilitate legal trade and to detect and prevent illegal trade covered by relevant international conventions (Deere Birkbeck et al., 2022). This could be expanded to include problematic single-use plastics that trade policy measures address and where identification at the border may be facilitated by reform of HS codes at the WCO or through harmonized standards and labelling initiatives.
- Strengthened capacity building for customs officials and adequate infrastructure such as digital technologies could also be facilitated through aid for trade initiatives supported by bilateral donors and international institutions including the World Bank (Sugathan, 2022).

Other potential avenues include pursuing and strengthening cooperation at a regional level, where various governments in regions such as Africa, the Caribbean, Latin America, the Pacific, South Asia, and Southeast Asia already collaborate regularly on trade and environmental cooperation issues. Such regional cooperation arrangements could be vehicles to pursue trade-related cooperation to address problematic and avoidable plastics, including single-use plastics. Concrete examples could include regional approaches to the regulation and trade of plastic products, as well as promoting trade in environmentally sustainable and effective substitutes on a regional basis; cross-border approaches to the promotion of business models based on reuse and refill or setting up regional hubs for environmentally sound recycling.

5. Key Takeaways

Single-use plastics are an important subgroup of problematic, unnecessary, avoidable, or harmful plastics. Certain types of single-use plastics, particularly packaging, account for a disproportionately high share of the global plastic pollution burden. While steps are already being taken at the national level to eliminate, phase-out, reduce, and restrict the production, consumption, sale, and trade of single-use plastics, coordinated action involving international cooperation at a global level is needed in order to support action that is effective, transparent and fair, taking into account wider sustainable development considerations.

Key takeaways from this paper on options for trade-related cooperation to address plastic pollution associated with single-use plastics include the need for:

- **Cooperation on developing a common set of guiding criteria to identify single-use plastics**, alongside a broader group of plastic polymers, chemicals, and plastic products of concern, for the purpose of creating control measures to eliminate, restrict, and reduce them. **This would include cooperation on a common approach to categorizing groups of single-use plastics** to address the proliferation of divergent definitions and approaches.
- **Identification of a set of priority categories of single-use plastics or specific single-use plastics that are problematic** where countries could consider taking immediate action on an individual or collective basis while waiting for an outcome from the plastics treaty negotiations; such action could also be undertaken or pledged in the context of discussions within the DPP.[28]
- **Cooperation on the use of trade-related measures to eliminate, restrict, and reduce the use of single-use plastics**, such as import and export bans and restrictions, import tariffs, regulations and standards, environmental fees, charges and taxes, as well as licensing and government procurement arrangements.
- **Cooperation around the design and implementation of measures aimed to support eco-design and reuse**, such as on tariff incentives or disincentives based on eco-design and the environmental performance of products, investments in new business models, eco-modulated EPR fees, coordination and transparency of regulations, standards, and conformity assessments (including through the development of international standards), as well as government procurement policies to stimulate redesign and reuse.
- **Cooperation to promote production and trade in environmentally sound and safe non-plastic substitutes for a range of single-use plastics, such as single-use packaging and short-lived textiles**, including by reducing tariffs and non-tariff barriers; eliminating or reducing subsidies that incentivize the use of plastics; advancing policies that incentivize a switch to the use of environmentally sound and safe non-plastic substitutes as well as product and service delivery models that reduce or eliminate use of plastics, including research and development (R&D), fiscal incentives, and technology transfer; facilitating investments in domestic production and environmentally sound waste management of substitutes; cooperating on regulations, standards, and conformity assessments to facilitate diffusion and trade in substitutes; and implementing government procurement measures that promote demand for substitutes.

28. Examples of problematic single-use plastic categories that countries could consider listing include, among others, single-use packaging, single-use products made with polymers of concern (i.e. using virgin polymers, non-recyclable polymers, and harmful additives, or those containing microplastics), single-use plastic products that can be readily replaced by affordable non-plastic substitutes, and specific products deemed problematic (such as being prone to littering) in a national or regional context. Examples of problematic specific single-use plastics that countries could consider listing include, among others, sachets, expanded polystyrene packaging, or cigarette butts.

- **Cooperation on broader measures to address policies and practices that promote production and trade of single-use plastics**, such as disciplining subsidies for fossil fuels and plastic production.
- **Promotion of aid for trade initiatives that can support trade-led efforts by developing countries to address plastic pollution**, including support for customs officials and digital technologies that can help identify and track goods at the border, and support for the design and implementation of trade-related aspects of plastic pollution policies.

Options for multilateral trade-related cooperation on single-use plastics range from including trade-related obligations and control measures in the plastics treaty to complementary collective action through the DPP as well as trade-related cooperation initiatives at the regional level.

Across all of these areas, there is an ongoing need to foster cooperation among organizations that work to address the trade-dimensions of plastic pollution, including the WTO, WCO, UNEP, UNCTAD, the International Organization for Standardization, the Basel, Rotterdam, and Stockholm conventions, and Interpol. Where trade-related action is pursued, a key priority will be to ensure transparency of measures, consultation, careful environmental and socio-economic assessments, and cooperation to ensure that measures to tackle plastic pollution are ambitious, effective, and fair, taking into consideration wider sustainable development priorities.

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Annex

Table A.1. Categorization of Single-Use Plastics and Feasibility and Timeframes for Control Measures

Product group	Product subgroup and examples	Feasible for near-term elimination, reduction, or restriction	Feasible for longer-term action depending on additional considerations	For special consideration due to public health applications	Considerations to determine action type and timeline
Packaging	Single-use plastic packaging for food and beverage take-outs and delivery including Styrofoam	✓			**Technical feasibility** - Ability to phase out/ avoid product - Ability to reduce plastic in the product group substantially - Availability and accessibility of plastic alternatives in the given product group - Ability of alternatives to meet functional requirements of their plastic counterpart - Ready scalability of alternatives to meet demand by 2035 - Well-demonstrated policy solutions to enable shift to alternatives within product group in a country context **Socio-economic feasibility** - Whether tackling the pollution from this plastic group is likely to have a disproportionately adverse effect on certain demographic groups or communities, bearing in mind differing contexts with and between countries **Likelihood of unintended consequences** Environmental impacts of any alternatives that may arise, or be encouraged, to take the place of the plastic product that has been subject to elimination/ reduction
	Unnecessary, excessive, or problematic single-use or short-lived plastic packaging used for beverages, pre-packaged foods (including sachets and multimaterial, multipolymer packaging), business-to-consumer packaging for cosmetics, and household products such as individually plastic wrapped magazines and newspapers	✓			
	Excessive or unnecessary single-use business-to-consumer packaging such as plastic wrapping for magazines and newspapers, plastic carrier bags, plastic sample bottles of personal care products, and plastic packaging used for distribution of online consumer purchases	✓			
	Single-use plastic packaging for long distance transport of food, beverages, and fresh produce including perishables such as meat and fish		✓		
Specific plastic items	Single-use, short-lived plastic fibres such as filters in engineering systems and personal protective equipment masks			✓	
	Single-use, short-lived items that use plastic fibres such as wet wipes, cigarette butts, disposable vacuum filters, and plastic tea bags	✓			
	Single-use and short-lived items such as plastic balloons, cutlery, plates, cups, disposable cigarettes, and earbud sticks	✓			
Other single-use plastic categories for priority consideration	Single-use plastic products made with polymers of concern (i.e. using virgin polymers, non-recyclable polymers, and harmful additives or those containing microplastics)	✓			
	Single-use plastic products deemed problematic (such as being prone to littering) in a national or regional context, such as asthma inhaler devices	✓			

Source: Authors' elaboration, drawing on WWF (2023) and other sources reviewed for this paper.

Table A.2. Overview of Trade-Related Policy Options to Eliminate and Phase out Single-Use Plastics

Trade-related measures / Objectives	Border measures				Economic measures		Regulatory measures	
	Import bans an quantitative restrictions	Tariff and non-tariff measures	Export prohibition & restrictions	Trade & investment facilitation	Loans & subsidies	Environmental taxes, fees & charges	Regulations, standards & conformity assessment	Government procurement
Single-use packaging								
Eliminate/ phase out production and trade in single-use food and beverage packaging	Import bans	Import tariffs or licences on certain plastics products	Export bans		Reduction/ end of subsidies for fossil fuels and plastics	Taxes on carbon, fossil fuels, or virgin plastics Environmental fees, taxes, and charges on domestic production of single-use packaging	Regulations and standards defining which products fall within the scope of the bans Regulatory requirements and standards to reduce plastics use (such as single-use food and beverage packaging) and improve transparency of the material composition of products	
Eliminate/ phase out production and trade in unnecessary, excessive, or problematic single-use or short-lived packaging	Import bans	Import tariffs or licences on certain plas-tics products	Export bans		Reduction/ end of subsi-dies for fossil fuels and plastics	Taxes on carbon, fossil fuels, or virgin plastics Environmental fees, taxes, and charges on domestic production of single-use packaging	Regulations and standards defining which products fall in the scope of the bans Regulatory requirements and standards to reduce plastics use (such as unnecessary single-use packaging) and improve transparency of the material composition of products	

Table A.2. (Continued)

Trade-related measures / Objectives	Border measures				Economic measures		Regulatory measures	
	Import bans an quantitative restrictions	Tariff and non-tariff measures	Export prohibition & restrictions	Trade & investment facilitation	Loans & subsidies	Environmental taxes, fees & charges	Regulations, standards & conformity assessment	Government procurement
Specific single-use plastic items: Non-necessary single-use or short-lived fibres								
Eliminate production and trade in single-use, short-lived fibres	Import bans		Import bans		Reduction/ end of subsidies for fossil fuels and plastics	Taxes on carbon, fossil fuels, or virgin plastics Environmental fees, taxes, and charges on domestic production of single-use, short-lived fibres/non-woven	Regulations and standards defining which products fall within the scope of the bans Regulatory requirements and standards to reduce plastics use (such as single-use, short-lived fibres/ non-woven) and improve transparency of the material composition of products	
Specific single-use plastic items: Other non-necessary single-use or short-lived items								
Eliminate other single-use and short-lived items	Import bans		Export bans		Reduction/ end of subsidies for fossil fuels and plastics	Taxes on carbon, fossil fuels, or virgin plastics Environmental fees, taxes, and charges on domestic production of other non-necessary single-use, short-lived items	Regulations and standards defining which products fall within the scope of the bans Regulatory requirements and standards to reduce plastics use (such other non-necessary single-use, short-lived items) and improve transparency of the material composition of products	

Source: Authors' elaboration.

Table A.3. Overview of Trade-Related Policy Options to Restrict and Reduce Single-Use Plastics

Trade-related measures / Objectives	Border measures				Economic measures		Regulatory measures	
	Import bans an quantitative restrictions	Tariff and non-tariff measures	Export prohibition & restrictions	Trade & investment facilitation	Loans & subsidies	Environmental taxes, fees & charges	Regulations, standards & conformity assessment	Government procurement
Specific single-use or short-lived plastic Items								
Reduce and restrict production and trade in other necessary single-use, short-lived items		Import tariffs or licences on certain plastics products			Reduction/ end of subsidies to fossil fuel and plastics	Taxes on carbon, fossil fuels, or virgin plastics Environmental fees, taxes, and charges on domestic production of single-use packaging	Regulations and standards defining which products fall within the scope of export or import bans and restrictions, higher import tariffs, or licences Regulatory requirements and standards to reduce plastics use (such as other necessary single-use, short-lived items), and improve transparency of the material and chemical composition of products	

Source: Authors' elaboration.

Table A.4. Overview of Trade-Related Policy Options to Promote Redesign, Reuse, and Substitution of Single-Use Plastics

Trade-related measures / Objectives	Border measures				Economic measures		Regulatory measures	
	Import bans an quantitative restrictions	Tariff and non-tariff measures	Export prohibition & restrictions	Trade & investment facilitation	Loans & subsidies	Environmental taxes, fees & charges	Regulations, standards & conformity assessment	Government procurement
All single-use plastics categories								
Eco-designing products (e.g. fewer "non-recyclable" single-use plastics, share of recycled content, non-toxic, recyclable in an environmentally sound and safe manner)	Import restrictions or bans on products that do not meet minimum eco-design criteria or standards	Reduce tariffs for products that meet high eco-design criteria			Green subsidies, tax breaks, R&D for goods that are less polluting or that can be recycled in an environmentally sound and safe manner	Eco-modulated EPR fees based on product's design (e.g. to ensure reuse or reduction in the use of virgin polymers) or recyclability	Circular economy regulations, standards, and conformity assessment (such as mandatory recycled content), and labelling schemes.	Requirements to procure only plastics that can be recycled in an environmentally and safe sound manner
Reusing plastics, extending durability of products, and promoting "reuse and refill," "plastic free," and "packageless" business models[29]				Facilitate investment in business models and supply chains that promote reuse and refill, as well as "plastic free" and "packageless" business models	Green subsidies, tax breaks, R&D, and tech transfer for products that are less polluting or can be recycled in environmentally sound and safe ways as well as for new business models such as "reuse and refill," "plastic free," and "packageless"	Eco-modulated EPR fees based on product's durability, reparability, reusability, and recyclability	Regulations, standards, and conformity assessments that relate to reusable and repairable products Regulations and standards for deposit return systems	Requirement not to purchase single-use plastics and to purchase only reusable products, e.g. reusable cups and plates Requirements to purchase from "plastic free" and "packageless" businesses whenever feasible

29. See also QUNO (2023).

Table A.4. (Continued)

Trade-related measures / Objectives	Border measures				Economic measures		Regulatory measures	
	Import bans an quantitative restrictions	Tariff and non-tariff measures	Export prohibition & restrictions	Trade & investment facilitation	Loans & subsidies	Environmental taxes, fees & charges	Regulations, standards & conformity assessment	Government procurement
Sectoral approaches: Single-use packaging								
Promote production and trade in environmentally sound and safe non-plastic substitutes for single-use food and beverage packaging		Reduce tariffs and non-tariff barriers to environmentally sustainable and effective non-plastic substitutes to single-use food and beverage packaging		Facilitate investment in domestic production and waste management	Green subsidies, tax breaks, R&D, and technology transfer for the production and use of non-plastic substitutes		Standards for responsible sourcing and waste management of substitutes, and regulations requiring use of non-plastic substitutes in domestic production	Requirements to use environmentally sound and effective non-plastic substitutes
Promote production and trade in environmentally sound and safe non-plastic substitutes for unnecessary single-use packaging		Reduce tariffs and non-tariff barriers to environmentally sustainable and effective non-plastic substitutes for unnecessary single-use packaging		Facilitate investment in domestic production and waste management	Green subsidies, tax breaks, R&D, and technology transfer for the production and use of non-plastic substitutes		Standards for responsible sourcing and waste management of substitutes, and regulations requiring use of non-plastic substitutes in domestic production	Requirements to use environmentally sound and effective non-plastic substitutes
Sectoral approaches: Short-lived textiles								
Promote production and trade in environmentally sound and safe non-plastic substitutes for single-use, short-lived fibres		Reduce tariffs and non-tariff barriers to environmentally sustainable and effective non-plastic substitutes to single-use, short-lived fibres		Facilitate investment in domestic production and waste management	Green subsidies, tax breaks, R&D, and technology transfer for the production and use of non-plastic substitutes		Standards for responsible sourcing and waste management of substitutes, and regulations requiring use of non-plastic substitutes in domestic production	Requirements to use environmentally sound and effective non-plastic substitutes
Trade-related cooperation on substitutes for specific single-use or short-lived plastic items widely deemed to serve necessary uses								
Promote production and trade in environmentally sound and safe non-plastic substitutes for other single-use, short-lived items		Reduce tariffs and non-tariff barriers to environmentally sustainable and effective non-plastic substitutes to other necessary single-use, short-lived items		Facilitate investment in domestic production and waste management	Green subsidies, tax breaks, R&D, and technology transfer for the production and use of non-plastic substitutes		Standards for responsible sourcing and waste management of substitutes, and regulations requiring use of non-plastic substitutes in domestic production	Requirements to use environmentally sound and effective non-plastic substitutes

Source: Authors' elaboration.

Table A.5. Plastic Types and Items Most Frequently Identified as Unnecessary or Problematic by Relevant Voluntary Initiatives*

	Rationale quoted by selected stakeholders	Rationale quoted by selected stakeholders[30]**	Number of Plastics Pacts[31]	CGF GDR[32]
Materials/Additives				
Expanded polystyrene packaging	**CGF GDR/Kenya Pact**: Too uncommon to make recycling economically viable. The material is rarely sorted from household waste and recycled. Most of the material is incinerated and landfilled.	80%	7	X
Polyvinyl chloride packaging	**CGF GDR/UK Plastics Pact/South Africa Pact**: Not recyclable and acts as a contaminant if it enters the recycling system. Its presence negatively affects the quality of other recyclates.	76%	9	X
Carbon black pigment	**CGF GDR/French Plastics Pact**: Undetectable in the sorting process when using near infra-red technology, which prevents it from being recycled. Most of the material is incinerated and landfilled.	70%	5	X
Polyvinylidene chloride or polyvinylidene dichloride)	**CGF GDR/Poland Pact:** The presence of these materials in packaging interferes with the recycling of other plastics, negatively affecting the quality of other recyclates.	61%	4	X
Polystyrene packaging	**CGF GDR/UK Plastics Pact**: Too uncommon to make recycling economically viable. The material is rarely sorted from household waste and recycled. Most of the material is incinerated and landfilled.	56%	8	X

30. EMF (2022).
31. EMF (n.d.-b).
32. CGF (n.d.).

Table A.5. (Continued)

	Rationale quoted by selected stakeholders	Rationale quoted by selected stakeholders[30]**	Number of Plastics Pacts[31]	CGF GDR[32]
Materials/Additives				
Multilayer materials (multimaterial)	**Portugal Pact:** These are packages containing several layers of plastics, often of different and incompatible types. It is highly difficult to recycle.	44%	5	
Polyethylene terephthalate (PET) glycol	**CGF GDR/Kenya Pact/ Poland Pact**: Acts as a contaminant if present in the PET recycling stream, hindering the recyclability and value of PET materials.	43%	5	X
Oxo-degradable packaging	**CGF GDR/South Africa Pact/Kenya Pact**: Fragments into microplastics, contributing to plastic pollution. Not suited for long-term reuse, recycling at scale, or composting.	Not accounted***	7	X
Formats				
Single-use plastic cutlery/serve ware	**South Africa Pact**: High leakage into the environment and very unlikely to be recycled.	64%	5	
Single-use plastic straws	**UK Plastics Pact/Kenya Pact/Portugal Pact**: High leakage into the environment and their small size prevents them from being recycled	31%	5	
Single-use plastic stirrers	**Kenya Pact**: High leakage into the environment and their small size prevents them from being recycled.	Not accounted***	5	
Single-use cotton buds with plastic stems	**UK Plastics Pact/Kenya Pact**: High leakage into the environment.	Not accounted***	4	

*These items are identified by at least 30% of Global Commitment signatories, found in at least four Plastics Pacts, and found within the complete list from GDR.
**Percentage of Global Commitment signatories that have the category as part of their portfolio and reporting that they are eliminating reducing the category.
***Not accounted by industry members, but government signatories are reporting bans on these categories.

Source: Authors' adaptation of EMF (2023, p.8).

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