MINISTÉRIO DAS RELAÇÕES EXTERIORES

FUTURO ACORDO SOBRE POLUIÇÃO POR PLÁSTICOS – DEFINIÇÕES E CRITÉRIOS

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Element	Definition	Source of the information
High-risk plastics	Plastic products and/or materials with high risk of causing plastic pollution, based on their probability to end up in the environment, and resulting impacts on the environment and human health.	Adapted from WWF, 2023
Avoidable plastics	Plastic products and/or materials for which alternatives have been developed that have equivalent functionality and adequate performance. Systemic alternatives (e.g. avoidance of single-use plastic products through reuse and refill) are often preferable to alternative single-use products from an environmental standpoint.	Adapted from Cousins et al. (2019)
Single-use plastics	Products that are made wholly or partly from plastic and that are not conceived, designed or placed on the market to accomplish, within their life span, multiple trips or rotations by being returned to a producer for refill or re-used for the same purpose for which they were conceived.	EU Directive 2019/904
Short-lived plastics	Plastic products used by consumers during a period (use phase) ranging from over a day to less than 3 years.	Adapted from Eliminating avoidable plastic waste by 2042: a use-based approach to decision and policy making, drawing on Geyer et al. 2017

Comments, if any:

Aliança Resíduo Zero Brasil, the Global Alliance for Incinerator Alternatives (GAIA) and Toxisphera Environmental Health Association prefer the use of the term "high-risk" to "problematic", following the approach followed by WWF based on an analysis conducted by Eunomia, a consultancy firm specialized in the circular economy. Naming a subset of plastics "problematic plastic products" suggests that other plastic products are not problematic, when evidence shows that all plastic products contribute to the plastic pollution crisis, whether from the angle of upstream pollution, microplastics shedding, toxicity or waste management. The difference is one of degree based on available scientific evidence, a notion well captured by the term "high-risk".

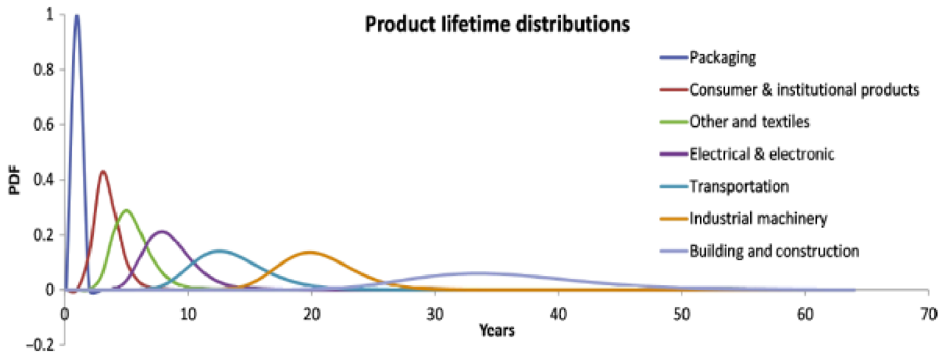
For high-risk plastics, "probability of the plastic ending up in the environment" arises from
1) Higher volumes produced
2) Production, use, or disposal features of the product cycle that result in plastics entering the environment as pollution
3) Potential for long-range or transboundary environmental transport.

The "impacts on the environment and human health when this occurs" arise from:
1) Persistence in the environment
2) Physical properties that encourage spread once pollution occurs
3) Existence of additional evidence of specific harms from format or chemical composition.

The term "avoidable plastics" is preferable to:

- "substitutable plastics", because the latter does not provide for the option where the plastic product in question may not need replacing and can simply be avoided (e.g. plastic straw, in most instances)
- "unnecessary plastics", because the latter implies that plastics that cannot currently be avoided (practical consideration) are somehow "necessary" (notion of importance), causing confusion with the important concept of essential use (that applies to specific uses, not products or materials) that will be needed for Parties to apply for exemptions, similarly to the Montreal Protocol.

For short-lived plastics, the metric is the use phase, meaning the length of time during which the product is used by the consumer, and excludes any storage time following production and prior to the consumer acquiring the product, as shown in the following picture (Geyer et al. 2017).



Note: PDF = probability distribution function.

It is important for the plastic treaty control measures to consider plastic *materials* alongside plastic products, to allow broader and more effective controls of specific plastic materials that are particularly prone to causing severe pollution or harm to human health, such as oxo-degradable plastics, synthetic textiles or plastic foams, due to their acute contribution to microplastic pollution.

“Products” are understood as including both:

- end-user products (e.g. single-use plastic bag)
- intermediate products (e.g. expanded polystyrene beads used as furniture infill)

The draft EU Regulation on Ecodesign for Sustainable Products defines intermediate products as “product that requires further manufacturing or transformation such as mixing, coating or assembling to make it suitable for end-users” (Article 2).

“Plastics” is understood to include all plastic polymers, synthetic and semi-synthetic, in all states of matter and solubility. For more information, see GAIA 2022, Defining plastic products, materials and polymers: a proposal.

Criteria for identifying, categorizing and/or prioritizing the plastic products listed above:

Groups of plastic products, applications and materials could be classified in the following manner, in an adaptation of the proposal by WWF 2023:

Product group	Sub-group 1	Sub-group 2	Sub-group 3	Examples
1. Packaging	Contact-sensitive	Food and beverage	1a. Single-use food & beverage	Beverage bottles, takeaway containers, food packets, sachets, pouches, nets, shrink wrap, other wraps and thin bags, EPS fish boxes, plastic takeaway cup lids, plastic lining on single-use food-contact materials
			1b. Reusable food & beverage	Reusable beverage bottles, containers and foodware (cups, plates, utensils)
		1c. Personal care		Containers: Toothpaste tubes, shampoo and soap bottles, bottles, pots and tubs for creams, lotions and scrubs, make-up containers Synthetic hair and plastic hair accessories (e.g. elastic bands), plastic nails Plastics as ingredients in personal care products (e.g. nail polish, liquid silicones in shampoo, soaps, lotions and serums) Absorbent hygiene products in contact with reproductive organs (e.g., nappies, sanitary pads, incontinence pads, tampons)
		1d. Pharmaceutical & medical		Medication bottles, blister packs for pills, protective casings and inserts for medical devices, IV bags, test tubes Plastics in implants, thread for stitches
		1e. Childrens' toys, clothing and accessories		Toys Children's clothing Pacifiers and teething accessories
		1f. Other contact sensitive		Packaging for animal feed, veterinary devices, hazardous products (including lubricating oil packaging) Plastic components in kitchen appliances (including dishwashers)
	1f. Non-contact-sensitive			Packaging for products not listed above – household goods, stationery including plastic windows in paper envelopes, electronics, plastic carrier bags, secondary or shipping/transport packaging
2. Characteristic-specific products	Single-use/ Short-lived (use phase up to three years)	Fibers/ non-wovens		Absorbent hygiene products (e.g., nappies, sanitary pads, incontinence pads, tampons), PPE (e.g. masks, gowns), filters in engineering systems Wet wipes, cigarette butts, disposable vacuum filters, tea bags, disposable table cloths, single-use plastic makeup removal pads

			Some synthetic clothing (other synthetic clothing may have longer use phases)
		Non-fiber	Contact lenses, bin bags, PPE (e.g. goggles, films, gloves); Balloons, cutlery/plates/ cups, plastic earbuds, disposable e-cigarettes, plastic confetti; Oxo-degradable plastics (cause significant secondary microplastic release, typically single-use) Plastic components in electric toothbrushes, some mobile phones, and some shoes (others may have longer use phases)
	Longer use phase items	2e. Cause significant secondary microplastic release	Tyres, synthetic textiles, paint Plastic foams, e.g. - Polyester foam f insulation (EPS, XPS) - Polyurethane (PU) foam in furniture - Ethylene-vinyl acetate (EVA) foam in footwear Plastic grass (astro turf)
		2f. Other	Furniture, white goods, durable toys, plastic plants
3. Sector-specific products	3a. Fishing & aquaculture		Nets, lines, pots and trawls, plastic mesh, PVC piping, fish aggregating devices (FADs), polyester foam fish boxes (cause significant secondary microplastic release)
	3b. Agriculture		Mulch film, silage wrap, greenhouse tunnels
	3c. Other		Electrical/electronic equipment, construction materials, automotive components, household products
4. Microplastics	Primary microplastics	4a. In application (including intermediate products)	Solid: Microbeads in personal care products; glitter including in cosmetics and in fishing bait; antifouling application on ship hulls; microplastics in printer inks, paints, spray paints, injection moldings, abrasives and other industrial applications; plastic coatings on seeds and fertilizer granules; Water-soluble and non-solid: water-soluble synthetic polymers and liquid synthetic polymers e.g. in personal care products, absorbent hygiene products, wastewater treatment
		4b. Pre-production (virgin or recycled)	Plastic resin pellets, flakes or powders

Comments, if any:

It is important to note that the evidence of plastic pollution that underpins the table above depends on currently-available scientific information. Even where there is incomplete information on the impacts of every type of plastic product and primary microplastics in the atmosphere or in the terrestrial, freshwater or marine environment, existing data already demonstrates the harms from plastic pollution, and it should be expected (in line with the trend to date) that future findings will highlight new and potentially more severe associated impacts. Hence, the treaty should align with the precautionary principle.

Element	Definition	Source of the information
Polymers of concern	Polymers found to be harmful or toxic to human health and the environment, according to its hazard properties and exposure, at any stage of its life cycle.	Aliança Resíduo Zero Brasil
Chemicals of concern	Means any substance, which has an inherent capacity to cause an adverse effect, immediately or in the more distant future, on humans, in particular vulnerable groups, animals or the environment and is present in sufficient concentration to present risks of such an effect.	Adapted from the definition of “substances of concern” from EU Regulation No 528/2012

Comments, if any:

According to UNEP, 2023, there’s still a governance gap from the control measures deployed by MEAs to phase out or regulate chemicals/materials/products. Aspects to take into consideration are:

- Limited coverage of chemicals of concern
- Notable gap from polymers of concern being unaddressed, which is partly explained by a lack of hazard data and/or data on polymer identities.
- Microplastics and nanoplastics also remain unaddressed, despite functioning as vectors for chemical contaminants, and potentially as a chemical threat to human health and the environment.
- High-risk and avoidable plastics are unaddressed at the global level, although UNEA Res. 4/9 highlights the need to address single-use plastic products pollution.
- The production of monomers is not restricted by any global instrument.

Criteria for identifying, categorizing and/or prioritizing polymers and chemicals of concern:

As recommended by IPEN, criteria for identifying chemicals to be controlled under the Treaty could include the following:

a. **Scope**: Chemicals and classes of chemicals associated with plastics, either as plastic ingredients, processing aids, non-intentional additive substances (NIAS), and chemicals unintentionally produced during the plastics life cycle (e.g. dioxins during thermal degradation of PVC).
b. **No data, no market**: Chemicals for which there is no available toxicity data cannot be put on the market.
c. **Safe circularity**: Chemicals that increase barriers to safe reuse or recycling of plastics (such as hard-to-recycle polymers, or additives that are known to interfere with recycling).
d. **Adverse effects on health or the environment**: Chemicals for which there is evidence of known or potential adverse effects for human health or the environment, such as:
    - Substances that are carcinogens, mutagens, or reproductive toxicants.
    - Substances that are endocrine disruptors.
    - Substances that affect the immune system, the neurological system, or a specific organ.
    - Substances that are persistent, bioaccumulative, and toxic in the environment (ecotoxic).
    - Substances that are persistent, mobile, and toxic.

In addition, the following criteria from the Basel Convention's Annex III listing of hazardous characteristics are also relevant:

- "Substance or wastes liable to spontaneous combustion" (H4.2)
- "Capable, by any means, after disposal, of yielding another material, e.g., leachate, which possesses any of the [hazardous] characteristics listed above [in Annex 3 to the Basel Convention]." (H13)

Finally, the following climate-related criteria are also important:

- Direct harm to the climate: GHG emissions (e.g. carbon, methane)
- Indirect harm to the climate e.g. disruption of ocean carbon pump, deforestation
- [Ozone depletion, to the extent that it is not regulated under the Montreal Protocol]

According to HEJSupport, the treaty should ensure a globally harmonized transparency standard for information disclosure of chemicals and polymers in plastics with a binding transparency requirement should be ensured by the plastic treaty. It allows that all stakeholders, irrespective of jurisdiction, have access to the same information. These include stakeholders of the mid-and lower section of value chains. Waste dismantlers, waste sorters and recyclers should also have a disclosure of the chemicals and polymers in plastics.

The treaty should oblige manufacturers of plastic materials and products to provide data on the nature and quantities manufactured and request data on implementation from parties to the Treaty. The secretariat should regularly collate and publish this information, and other research and publicly available data. This will facilitate the monitoring of the effectiveness of each measure implemented and guarantee transparency.

Comments, if any:

Recently, two comprehensive reviews of industrial, scientific, and regulatory data have been conducted to estimate the number of chemicals used in plastics (Aurisano et al., 2021; Wiesinger et al., 2021). The studies identified that 128 chemicals of concern are regulated under MEAs, namely the Stockholm Convention, the Minamata Convention or the Montreal Protocol. This represents around 4% of all identified chemicals of potential concern and 1% of all chemicals used in plastics. Additionally, 960 of the chemicals of potential concern are subject to national/regional restrictions (Wiesinger et al., 2021).

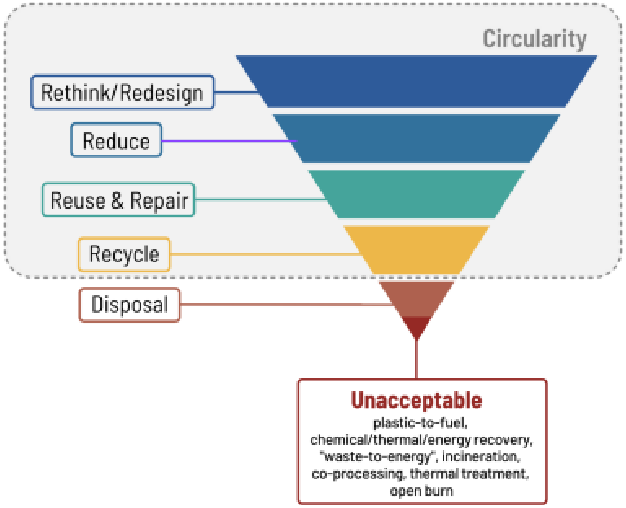
Valuable aspects to consider regarding the regulation of chemicals of concern are:

- There are substances of potential concern that remain unlisted in relevant international or regional regulations. To ensure comprehensive coverage, the treaty should expand the number of substances subjected to regulatory scrutiny.
- The existing regulations do not fully account for negative externalities associated with chemicals throughout their life cycles, such as monitoring costs, potential cleanup costs, public health damages, and impaired ecosystem services.
- Implementing regulations on a substance-by-substance basis might not effectively prevent regrettable substitutions. To address this, it is better to adopt group-based or class-based regulatory approaches, which prevent the substitution of one hazardous substance with another within the same group or class.
- Regional regulations may inadvertently lead to the relocation of chemical pollution to other countries, particularly those with lower incomes. Therefore, it is crucial to establish consistent control measures within the treaty to avoid transferring pollution to countries with less stringent regulations.

Criteria for identifying sustainable alternatives or substitutes for plastics:

To identify sustainable alternatives for plastics, the zero waste hierarchy should be considered, which means prioritizing upstream reduction, alongside the implementation of prevention and precaution principles as well as requirements around reuse could in turn gradually increase the feasibility of elimination measures. It is important to note that elimination strategies should avoid regrettable substitutions (e.g., replacing single-use plastic products with other single-use material). The image below illustrates the zero waste hierarchy (GAIA, 2023):

ZERO WASTE HIERARCHY



According to the zero waste hierarchy, aspects to take into consideration are:

- Recycling is actually the least effective way to conserve materials and achieve circularity compared to reduce, reuse and repair.
- Circularity excludes heat-intensive technologies, that harms both health and climate. It includes open burn, incineration, cement kiln co-incineration, plastic-to-fuel pyrolysis and other waste waste-to-energy processes (CIEL, 2023).

The usual process of mechanical recycling of plastics degrades the properties of the polymer, resulting in downcycled secondary products (Zoé et al., 2018). Therefore, plastics recycling has not been able to mitigate the burden on the environment, as recycled plastics have not significantly replaced primary plastic production. Criteria for sustainable alternatives to plastics to be considered under the Treaty, as well as for minimizing harm from plastics that remain in circulation, should be calibrated to preserve safe and just planetary boundaries as well as inter-generational equity in enjoyment of all human rights including the rights to health and to a healthy environment (see GAIA 2023 Part A: Scope & Principles).

To assess such impacts, it is fundamental for assessments not to limit themselves to single product comparisons (eco-efficiency approach typical of LCAs). Although LCAs are often used to guide policy decisions on substitutions for sustainability, they have many limitations, including:
- issues with data quality and transparency. Secondary datasets, usually derived from industry inventories, are not always updated regularly. Outdated assumptions lead to inaccuracies in the results of the study. In addition, LCA studies and underlying data are rarely published in full.

- does not provide any thresholds or limits for impacts to be used to determine whether a product is 'sustainable' or not
- limited scope that ignores important phases of the product lifecycle
- does not identify any issues related to consumption and consumerism
- excessive focus on certain criteria (e.g. carbon intensity) and complete omission of others (plastic and toxic pollution, human rights). Simplistic approaches do not recognize data quality regarding time, geography and technology criteria
- in cases of conflict of interest in the results presented, studies may lack third-party critical review by independent experts
- failure to account for systemic impacts of product substitution (e.g. impacts on aggregate material production and consumption)

(for more detail, see Eunomia, 2020, Plastics: Can Life Cycle Assessment Rise to the Challenge?).

Instead, sustainability assessments under the plastics treaty must consider overall environmental and human rights impacts, including those caused by implications of a substitution on overall production or consumption levels, while also taking into account qualitative aspects such as adherence to best practice with regard to human rights, environmental justice and Indigenous rights, as only more sophisticated assessments can deliver (Geyer, 2022).

Raw material extraction and primary material production cause the overwhelming majority of global greenhouse gas emissions and other harm to human health, the environment, and human rights. For this reason, reuse has the potential to be the most sustainable alternative system to replace single-use plastics, including but not limited to the packaging sector (University of Portsmouth, 2023). Reuse is the cornerstone of a transition from linear extraction-production-consumption systems to a more circular economy (GAIA, 2023).

It is worth noting that bio-based, biodegradable and compostable plastics are types of plastics, and not alternatives to plastics (GAIA, 2022).

Sustainability criteria could include:

Criterion	**Lifecycle phase**	**Comments & Examples**
Material efficiency	Upstream Downstream	Optimal material efficiency occurs when production can be avoided altogether, for example through alternative refill, reuse and packaging-free systems. While lightweighting is often promoted, it can interfere with durability and reusability of products that cannot be avoided through refill or packaging-free systems. Once a product can no longer be reused or repaired, its safe recyclability in processes with high material efficiency and high-quality recyclate allows the displacement of primary material production. Thermal treatment and plastic-to-fuel processes are not materially efficient, they destroy materials to generate carbon, toxic air pollution and toxic ash or sludge.

Energy efficiency	Upstream Midstream (if reusable) Downstream	Waste-to-energy incineration typically has low energy efficiency and can be endothermic (more energy inputs than outputs) when the share of organic waste in the waste stream is too high, or when operating in countries too warm for direct use of heat to have any value. Waste-to-fuel pyrolysis operations are endothermic (Rollinson & Oladejo, 2019).
Climate change	Upstream Midstream (if reusable) Downstream	Energy and material sourcing choices significantly impact climate change outcomes: the use of fossil-free materials and energy sources can alleviate some of the greenhouse gas impacts from the upstream production phase. Indirect impacts on climate change must also be considered, e.g. via deforestation, microplastic disruption of the ocean carbon pump, and microplastics undermining carbon sequestration in soils (Wang et al., 2022).
Ozone depletion	Upstream Midstream Downstream	Incineration of plastic releases toxins such as chlorine and bromine that contribute to ozone depletion.
Land use & land system change	Upstream Downstream	The sourcing of raw materials for product manufacturing and of energy for processes across the lifecycle of products can have significant land use implications, either from impacts associated with mineral and fossil fuel extraction or from those associated with biomass extraction or production, such as deforestation. Land use and harvesting of biomass cause the release of soil organic carbon to the atmosphere and decreases soil's ability to sequester organic carbon. Extensive land use for bio-based plastics production will make it a competitor with agricultural food production. Assessments should also consider product-specific implications of land use and land system change for biodiversity.
Eutrophication	Upstream	Bio-based and industrially-compostable plastic polylactic acid (PLA) is often presented as a sustainable alternative to fossil-based, non-compostable plastics. However, biomass cultivation such as corn or sugarcane for PLA production generates significant eutrophication and acidification. Assessments should also consider implications of eutrophication and ocean acidification for biodiversity.
Ocean acidification	Upstream	

Water use	Upstream Midstream (if reusable) Downstream	Water use can be significant during the production phase for certain materials (e.g. biomass production) and is also significant during plastic recycling processes (due to washing and sink-float separation), posing particular concerns in water-scarce regions.
Changes to soil structure and composition	Upstream Midstream Downstream	Microplastic pollution in soils affects soil physical, chemical and microbiological properties. Microplastics also undermine soil fertility and crop safety (Wang et al., 2022). Assessments should also consider product-specific implications of changes to soil structure and composition for biodiversity.
Toxics content and emissions	Upstream Midstream Downstream	Mineral and fossil extraction processes for material production, as well as fossil-dependent energy sourcing for processes along the lifecycle of products, are associated with significant toxic emissions. The cultivation of biomass as feedstocks for bio-based plastics can also involve significant use of agrotoxics, with toxic pollution impacts on soil, water bodies, workers and neighboring communities. Food-contact materials made from or containing plant-based materials are not necessarily free from toxics: wood and bamboo items may be coated with toxic melamine-formaldehyde resins. Bio-based plastic items made from PLA also contain toxic PLA oligomers and PBAT oligomers, the latter being added to PLA to improve mechanical properties (Food Packaging Forum 2023). The presence of toxics in products is also a strong barrier to safe recycling and to environmentally-sound waste management. Assessments should also consider product-specific implications of toxics content and emissions for biodiversity.
Pollution from plastics emissions, including microplastics	Upstream Midstream Downstream	Assessment of pollution from plastics emissions must consider direct quantities of emissions (including “littering”, “leakage”, pellet loss, dumping including as a result of waste exports, or as a result of container loss) as well as dispersion and persistence in different environments (Eunomia 2020). Assessments should also consider product-specific implications of plastic pollution for

		biodiversity.
Environmental justice, human rights and Indigenous rights impacts	Upstream Midstream Downstream	Respect of human and Indigenous rights as well as environmental justice may be assessed inter alia by a series of qualitative indicators, including adherence to the following practices: - Establishment of facilities (including biomass cultivation for material production) along the lifecycle of products respect Indigenous communities' rights to consultation and prior and informed consent. - Decisions on where to locate facilities along the lifecycle of products are made in a manner that prevents the accumulation of pollution-generating facilities in overburdened communities. The cumulative impact of all polluting facilities in a given location is considered, not only those associated with the lifecycle of plastics. - The rights of affected communities are upheld, including the rights to information, meaningful participation and consultation in decisions to build or expand industrial facilities along the lifecycle of plastics and sustainable alternatives.
Design for reuse, if applicable, and number of reuse rotations (past the sustainability breakeven point). More broadly, design to extend the use phase (durability, design for repair).	Upstream Midstream	While recycled content is often presented as a key criteria for circularity in ecodesign policies, recycling of single-use products is much less circular and environmentally-beneficial than reuse (GAIA, 2023). For reusable products, the sustainability breakeven point is the critical mass of rotations (reuses) past which the environmental impact of the reusable product is less than a corresponding single-use item - this number is specific to each type of reusable product and can be obtained by performing consequential LCAs with adequate scope and criteria (University of Portsmouth, 2023). Moreover, the longer a product's use phase is, the lower its carbon intensity. The use phase of products can be extended by designing these products and supporting systems to facilitate repair, for instance through ease of disassembly and access to repair manuals and spare parts, particularly for more complex products containing plastics (The Restart Project, 2021).
Transparency on contents including additives, such as through Digital Product Passports		Without information on product composition, reuse becomes risky and safe, high-quality recycling becomes impossible. For this reason, transparency is a valid sustainability and ecodesign criterion, as included by the European Union in its proposed Ecodesign for

		Sustainable Products Regulation.

Numerical references and qualitative criteria could be developed by subsidiary scientific and technical bodies, adopted in an annex to the treaty and updated with evolutions in technology, or degradations in planetary boundaries requiring more strict criteria values.

Comments, if any:

Additional concerns related to the treaty are:

- Establish global targets to minimize production of primary plastic materials and their constituents, including controls on polymers and their precursors and feedstocks, as defined in an annex. To be effective, the target must be global and not nationally-determined. This does not mean identical targets for all countries, but it ensures that the sum of all national production cuts are sufficient to meet global targets and treaty objectives. Without a binding global target, we risk seeing the same debacle as for global climate change policy
- Independent scientific body should be established to input into future annex amendments
- End subsidies and other market incentives for primary plastic materials and their constituents, including polymers, precursors and feedstocks (both fuel and bio-based)
- Establish a global plastics tax as defined in an annex
- Prevent the occurrence of planned obsolescence, in which is defined by situations where products are deliberately produced or designed so that they only last for a certain period of use. This includes the cessation of the supply of repair parts after a certain period of their being placed on the market, by the producer who has programmed the planned obsolescence of their product. This results in the impossibility of reusing or repairing products, reducing the life cycles of products, stimulating increased consumption and the production of waste that impacts the environment and human health. By increasing the risk of shortening the life cycle of plastic materials, planned obsolescence increases the amount of toxic substances added to the plastics chain. Toxic substances added to plastics remain throughout their life cycle, contaminate the environment and harm the health of users, formal and informal workers, remaining in recycled plastics and being released into the atmosphere, water and soil through microplastics.

Life cycle phase	Environmental, safety and transparency control measures
Upstream	● Establish global targets to minimize production of primary plastic materials and their constituents, including controls on polymers and their precursors and feedstocks ● Phase-out avoidable plastics products, materials and applications. For essential use of plastics, establish a whitelist approach to increase effectiveness and ease of enforcement

	• Immediate priority phaseouts of chemicals and polymers of concern • Establish targets, standardization, general and sectoral guidelines to scale up reuse and refill • Prevent use of intentionally added microplastics • Ensure availability of identities, occurrence, composition and toxicity data on chemicals and polymers produced • Extent lifetime of plastics products, avoiding planned obsolescence
Midstream	• Minimize generation of secondary microplastic during use • Minimize waste generation during use
Downstream	• Ban open burning, thermal treatment, plastic-to-fuel and "chemical recycling" (incineration, co-firing in coal-fired power plants and other waste-to-energy processes, co-processing in cement kilns, gasification, pyrolysis, solvolysis) • Detect presence of possible chemicals of concern in recycling streams and ensure that appropriate action is taken

In the latest report The Sustainable Development Goals Report 2023, it mentions that despite multilateral and multi-stakeholder cooperation on sustainable consumption, it has grown since 2015, resulting in transformative and scientifically based policies in several countries. Between 2019 and 2022, 62 countries and the European Union communicated 485 policy instruments to promote the transition to sustainable consumption and production. These initiatives are increasingly connected to global environmental commitments related to climate, biodiversity, pollution, waste and high-impact sectors.

However, reporting related to **SDG 12: Responsible consumption and production** is decreasing annually by about 30% since 2019, evidencing substantial regional imbalances. More than 50% of the policy instruments were communicated by Europe and Central Asia. Despite this, the international community has adopted three ambitious agreements in 2022: the Sharm el-Sheikh Implementation Plan for a new global climate pact, the Kunming-Montreal Global Biodiversity Framework, and the plastics treaty itself. These agreements emphasize the need to adopt a more sustainable and circular approach to consumption and production. This reinforces the need for the regulation mechanism to increasingly strengthen the transparency of production, especially within the plastic treaty.

Potential sources of release of microplastics (applications and sectors) and criteria for prioritization:

According to Rognerud et al. 2022, provisions addressing microplastics should differentiate between categories of microplastics as these differ in regard to routes of leakage and control measures. These categories include:

i) Plastic pellets, flakes and powders: Microplastics produced for the use in manufacturing of plastic products. These may be made from virgin fossil- or bio-based plastic materials or recycled polymers.

ii) Intentionally added microplastics: Microplastics purposefully designed to be small in size for their application and use. This includes as microbeads in cosmetic products, glitter, industrial abrasives, rubber infill materials or polymer encapsulated agricultural products. Such microplastics could also be considered plastic products.

iii) Use-phase secondary microplastics: Microplastics generated during intended product use. Examples include microfibres from synthetic textiles, polymers from tyre, road and brake wear, and the degeneration of paints.

iv) Degradation-based microplastics: Microplastics originating from the degradation and weathering of larger pieces of plastics after deposition in landfills or when lost in the environment. This category also includes microplastics generated unintentionally in the recycling sector.

Pathways and considerations while targeting microplastics releases from each lifecycle stage are:

- Upstream
  - Leakage from production facilities
  - Design considerations to reduce microplastic emissions
  - Industrial emissions to air and wastewater from manufacturing facilities
- Midstream
  - Spills and leakages during loading, unloading, storage and terrestrial and marine transport
  - Direct emissions from use to environment and wastewater systems
- Downstream
  - Emissions to air, soils and wastewater from reprocessing
  - Emissions to soils, waterways and air from the degradation of mismanaged macroplastics and plastics deposited in landfills

Criteria for identifying potential sources of release of microplastics under the Treaty could include the following, in an adaptation of the proposal by Rognerud et al. 2022:

Type		Typical uses/sources and release pathways
Plastic pellets, flakes and powders		Used in the production of other plastic products May be released through spills or other unintentional losses or as residues in industrial effluents
Intentionally added primary microplastics	Microbeads	Used in personal care products Released during or after use, typically in wastewater
	Glitter	Used in arts and crafts or cosmetics May be released during or after use through wastewater or solid waste streams
	Industrial abrasives	Used as an exfoliant in cleaning processes Released during or after use, in wastewater or direct release to the environment
	Rubber infill material	Applied to artificial turf used for sport fields, particularly in Northern countries where it can extend the period of use through winter Transported from fields by wind or water or in removal of snow during winter
	Polymer encapsulated agricultural products	Seeds encapsulated in a polymer coating which contain nutrients or plant protection products Fertilisers and plant protection products encapsulated in a plastic shell which allows for slow or controlled release and therefore reduced (better targeted) use of chemical products Added directly to soils. Non-degradable synthetic polymer components remain after the product use (e.g. germination of seed or release of fertiliser)
Use-phase secondary microplastics	Microfibres	Fibres released from synthetic textiles or semi-synthetic cellulose-based fibers

		during laundering and use Typically released in wastewater or direct releases or the environment
	Tyre, brake and road wear particles	Particles of tyre, brakes, road marking and polymer modified bitumen from the road surface are created by abrasion and typically released in road and tunnel drainage systems, municipal sewer systems or direct releases to the environment through atmospheric deposition or runoff May be directly released to the environment or entered into urban drainage systems
	Agricultural film fragments	Particles can be created during the degradation of films during use, recovery, or waste handling due to weathering or mechanical stress May be directly released to the environment, specifically the soils they are in contact with, or be transferred to the wider environment through water or wind transport
	Fisheries and aquaculture residues	Particles can be created during the degradation of in-use fisheries and aquaculture infrastructure, including vessels, moorings, nets, ropes, aquaculture structures, buoys, etc. May be directly released to the environment
	Paint fragments	Particles of dried paint or coatings can fragment (e.g. from building surfaces or ships) over time May be directly released to the environment or entered into wastewater streams
Degradation-based secondary microplastics		Degradation and weathering of plastic wastes, including from mechanical recycling processes. Direct release to the environment through generation in-situ.

	Microplastic emissions from paper recycling facilities, notably in wastewater, due to high levels of plastic contamination of paper waste streams and plastic components and laminates in paper products. Microplastics in incinerator ash, due to incomplete combustion in presence of flame-retardants and to heterogeneity in temperature inside the burn chamber even when operating at steady-state Best Available Technique (Yang et al., 2021; Shen et al., 2021).

Comments, if any:

Operational provisions while identifying criteria for prioritization are:

- The treaty should incorporate timebound targets, compliance and enforcement measures to phase out all non-essential intentionally added primary microplastics, and it should also impose trade restrictions on exports and imports. Also, the treaty must include measures to reduce secondary microplastic emissions from macroplastics (e.g., synthetic textiles and plastic foams). This should include measures to prevent and reduce the production of avoidable plastic products.
- The agreement must incorporate specific measures aimed at preventing microplastics pollution arising from the incineration ash and recycling processes of plastics.
- A dedicated ad-hoc expert group should be established to identify key global sources of intentionally added primary microplastics. This group should develop criteria for implementing restrictions and compile a shortlist of non-essential uses of these microplastics to be presented to the INC. the expert group could also identify areas where alternative materials, designs, and models need to be developed.
- The treaty should incorporate binding commitments to prevent and collaborate in response to acute plastic pollution events, including accidental spills of plastic pellets. Moreover, it should establish mechanisms to hold polluters accountable for implementing mitigation, remediation, and providing compensation for any pollution incidents.
- The agreement must encompass provisions mandating the reporting of production, composition, and trade details concerning plastic pellets, flakes, and powders.
- Incomplete data around dominant sources of microplastics in many parts of the world necessitate a start-then-strengthen approach. In this regard, sources for which readily available measures exist to eliminate, mitigate, or remediate microplastics should be included in the initial version of the treaty. It is essential to formulate provisions that are adaptable enough to accommodate the inclusion of new control measures as additional sources and pathways of microplastic pollution are identified.

- According to the pilot study recently published in the *Journal of Hazardous Materials Advances*, "recycling plants' wastewater contains a staggering number of microplastic particles. And as explained by *Wired*, all those possibly toxic particulates have to go somewhere, i.e. potentially city water systems, or the larger environment." (...) "This involves sorting, shredding, and melting plastics down into pellets. During those phases of recycling, however, the plastic waste is washed multiple times, which subsequently sheds particles smaller than 5 millimeters along the way. Despite factoring in the plant's state-of-the-art filtration system designed to capture particulates as tiny as 50 microns, the facility still produced as many as 75 billion particles per cubic meter of wastewater."

Additional elements to be considered

Just transition

The global plastics treaty should establish a just transition mechanism to ensure a fair, equitable, and inclusive shift for waste pickers, workers in cooperative settings, and other affected communities. The waste pickers and informal workers play a significant role, handling about 60% of collected and recycled plastic waste globally. The treaty must recognize their historical contributions, protect their right to occupational safety, and ensure a just transition in the face of livelihood loss due to new global regulations.

The framework of a just transition involves recognizing and valuing the contributions of workers throughout the plastic value chain, while respecting their human dignity. The plan for a just transition must support and improve the systems already established by waste pickers, ensuring better and decent work, social protection, training opportunities, technology transfer, infrastructure support, and job security for workers in all stages of the plastic value chain.

Just Transitions should focus on preventing new and similar dependencies from being created by targeting systemic change and setting the framework for equity.

Just transitions must not be used to justify plastic production.

Extended producer responsibility (EPR)

Extended producer responsibility (EPR) policies seek to improve the environmental performance of products by making the producers and brand owners accountable for the entire lifecycle of their products, especially for the take-back, recycling and final disposal of the product. Even with some EPR policies cases developed around the world, strong EPR policies for plastic products and waste still lacks of implementation.

To guarantee strong EPR policies in the treaty, it must ensure strong and measurable requirements to guide producers to phase out avoidable single use materials, and provide that all products on the market are reusable or recyclable in scale. It is also critical to consider the historical and current role of the waste pickers in waste management systems, by including them as co-designer of the policies, prioritizing their inclusion and setting enforceable mandates and targets for integration.

Voting and consensus

Negotiations in the first half of INC-2 were marked by the reopening of the provisionally-agreed upon Rule of Procedure 38.1 that provided the option to vote when consensus cannot be found. The Aliança Resíduo Zero and GAIA are concerned that without the option to vote, a single country could veto any decision and block important provisions, jeopardizing the treaty's overall viability and/or reducing the needed ambition to deliver on the treaty's objective of ending plastic pollution across the whole lifecycle of plastics.

Additionally, in United Nations' negotiating spaces, voting on substantive matters has been a long-standing practice that has been established for decades. Aside from the Minamata Convention on Mercury, which the current draft rules of procedure for the work of the intergovernmental negotiating committee to develop an international legally binding instrument on plastic pollution including in the marine environment is based on, the following UN bodies and negotiating committees that created the below UN conventions relied on INC procedures that included voting as a decision-making procedure for substantive matters.

- UNFCCC (Rule 29)
- UNGA (Rule 85)
- UNEA (Rule 49)
- Stockholm Convention (Rule 37)
- Basel Convention (Rule 34)

For the reason above, having consensus as the only procedure for decision-making on substantive matters during negotiations will subvert an established international practice.