GAIA submission: Part B - Input on the potential areas of intersessional work to inform the INC-3: Further information

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I. Potential areas for intersessional work - Contact Group 1

Note: some information below is also relevant for Part A: Elements not discussed - additional considerations.

1. Plastic production freeze and phasedown

Intersessional work must prioritize upstream measures, starting with the package of measures that can deliver a freeze and phasedown of plastic production to sustainable levels that ensure safe and just planetary boundaries compatible with the respect of all human rights of current and future generations. These measures include:

- Freeze and phasedown targets and schedules and a moratorium on new plastic production capacity
- Removal of subsidy distortions and a global plastics tax.

Freeze and phase down targets and schedules

Plastic production freeze and phasedown targets and schedules must respect **safe and just planetary boundaries as well as as current and future human rights**, and should be defined in a treaty annex. A **moratorium on new plastic production capacity** would be an effective way to jumpstart the production freeze, show good faith and build trust for phasedown.

Quantifying the extent and pace of plastics phasedown to sustainable levels will require accurate plastic production data. The coverage and granularity of plastic production data will improve over time as future treaty Parties comply with disclosure and transparency obligations, including disclosure of inventories, production and trade volumes. Any targets and schedules agreed initially can be updated in light of advances in data, hence value of locating targets and schedules in annexes that can be amended.

The extent and pace of the plastic freeze and phasedown must ensure safe and just planetary boundaries compatible with the respect of all human rights of current and future generations. Nine planetary boundaries have been identified to date: climate change, stratospheric ozone depletion, atmospheric aerosol loading, ocean acidification, altered biogeochemical flows (phosphorus and nitrogen cycles), freshwater use, land-system change, loss of biosphere integrity, and novel entities. Plastics are a type of novel entities, and contribute to weakening all other boundaries, as illustrated in the diagram below from Villarrubia-Gómez et al. (2022).

While we can currently model the direct contribution of plastics to the climate boundary and how much phasedown is needed to ensure a safe climate boundary, this is not the same as a just climate boundary and does not guarantee the integrity of any other planetary boundaries. Plastics production phasedown targets and schedules will have to be updated to reflect progress on quantifying and modeling the way in which plastics interact with other planetary boundaries, and what safe and just levels look like.

The process for reviewing and updating freeze and phasedown targets and schedules must be robust and science-based, and involve the treaty scientific body free from conflicts of interest with businesses in the plastics value chain. This is particularly important given the complexity of the impacts of plastics on all planetary boundaries, and evolving science in this regard.

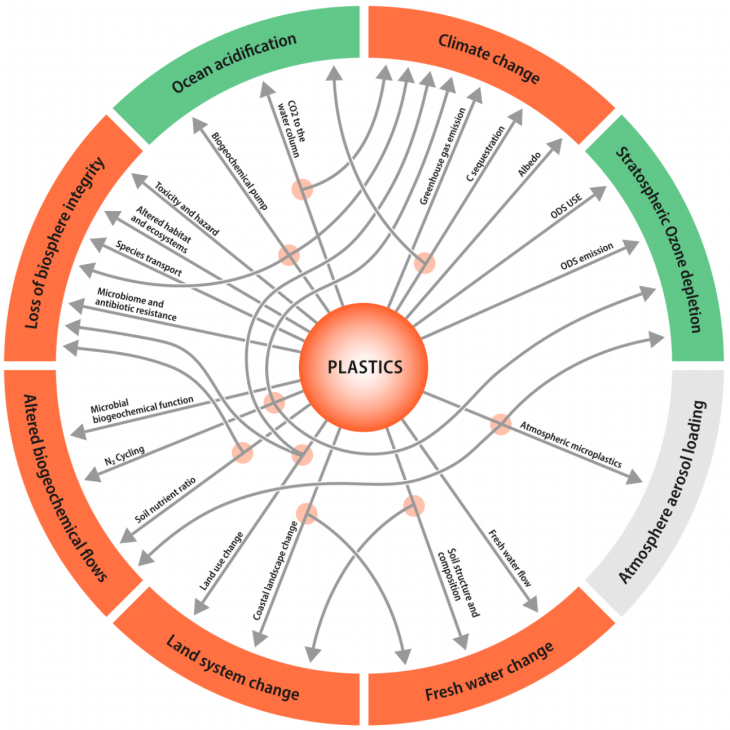

Figure 2. The plastics planetary boundary as a novel entity and cross-interactions with Earth System Components. Concept based on Gleeson et al. 2020. GHG = greenhouse gas emissions; ODS = Ozone depleting substances

To be effective, the target must be global and not nationally-determined. This 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. Trade requirements for non-parties will be key to avoid loopholes and ensure a level playing field. They will also help ensure producers don't transfer production to other countries to evade phasedown obligations.

Corresponding obligations for treaty Parties will represent consistent percentage reductions of national production from a historic baseline. In this sense, reduction obligations will be proportionate to the size of the national plastics production capacity, and will not disproportionately burden small producers.

Meanwhile, finance should be made available on a differential basis, especially to scale up alternative systems (including reuse and refill) and implement just transition programmes, two key factors for successful freeze and phasedown of plastic production.

Removal of plastic production subsidies, global plastics tax

Intersessional work must also consider market-based measures that could support a plastic production phasedown to sustainable levels. Priority should be given to consideration of the **removal of subsidies** that artificially lower the cost of plastics production and consumption, and make it difficult for sustainable alternative systems (e.g. reuse) and materials to compete.

The scope of the upstream plastics lifecycle where subsidies should be removed includes:

- The extraction and trade of raw materials necessary for the production of chemical precursors of plastics (e.g. crude oil and fossil gas);

- The production and trade of chemical precursors of plastics (e.g. monomers and additives);
- The production and trade of plastic polymers;
- The production and trade of primary plastic materials (e.g. pellets);
- The production and trade of plastic products.

Examples of subsidies in the plastics production chain that could be phased out include, inter alia :

- **Subsidized prices** for crude petroleum, fossil gas, ethane, naphtha, propane and other substances and chemical precursors to plastics;
- **Subsidized energy** for extraction and production facilities
- **Direct transfers (e.g. grants, advantageous loans, export subsidies)** to extraction and production facilities or for trade
- **Tax breaks** for extraction and production facilities or trade
- **Other government forgone revenue such as under-pricing of government lands or natural resources** for extraction and production facilities or trade
- **Transfer of risk to government and tax-payers,** for example through government coverage of the cost of accidents and occupational health.

See Steenblik, 2021 for more detail.

Intersessional work should also discuss a **global plastics tax**, the monetary value of which would be set in a treaty annex. The OECD recommends a tax of at least USD 1 500 per tonne for plastics, and USD 2 000 per tonne for plastic packaging (including composites). The tax could be phased in progressively and increased subsequently (see OECD, 2022).

2. Avoidable and high-risk groups of plastic products and materials

The treaty will need a robust system and process to categorize and assess plastic products and materials in order to bring plastic production down to sustainable levels and phase out products and materials that pose high risks to human health and the environment. Bans, phaseouts and the overall phasedown can be staggered for effective implementation.

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.

Post-INC3 intersessional work on this matter should include work to define a **robust process** for the assessment of plastic products and materials based on criteria used to evaluate harm to human health and the environment. A treaty scientific and technical subsidiary body free from conflicts of interest with businesses in the plastics value chain should hold a central role in that process. Such a body must include equitable and appropriate representation of Indigenous science and knowledge systems given the unique contributions they offer in ending plastic pollution, including circular systems, material, relational, ecological, conservation, economic, and intergenerational knowledge.

Intersessional work should also consider:

- How to classify plastic products, and materials **by group** to avoid loopholes and allow for efficient control. Those groups should include plastic components of other products (e.g. plastic windows in paper envelopes) to avoid loopholes (see **Table 1** below).

- A set of **criteria** for the assessment of the groups of plastic products, and and materials that present the highest risks for human health and the environment. WWF (2023a) define high risk as "most likely to be directly or indirectly introduced into the environment, and to cause resultant negative effects". Such criteria could be included in a dedicated treaty annex and could be expanded upon following recommendations by future Parties or the treaty scientific body (see **Table 2** below).

- What plastic products and materials are already **avoidable** based on whether sustainable alternative systems (e.g. reuse or refill) or sustainable alternative products or materials are available (see **section 5** below on sustainability), if they are indeed needed (in some contexts, some products or materials may be avoided without substitution, with no prejudice).

- The **menu of control measures** available under the treaty to control plastic products, and materials, from immediate bans to gradual phaseouts, market-based measures (subsidies removal, fees) and design requirements (see **Table 3** below).

- A set of **priority plastic products and materials** to be considered for immediate action upon treaty entry into force, in light of the severity of their documented impacts on the environment and human health, and the extent to which they can currently be avoided or substituted.

- The possibility for either general or country-specific and time-bound **exemptions** from bans and phaseouts (see **section 4** below on essential use).

Such intersessional work would place a treaty scientific and technical body in a position to promptly begin work, once established. Such work would include:

- Conducting assessments of groups of plastic product and materials based on criteria for the identification of high-risk plastics
- Translating such assessments into non-exhaustive lists of specific products and materials for ease of implementation
- Assessing what plastic products and materials are currently **avoidable** based on the availability of alternative systems, products or materials (in some contexts, some products or materials may be avoided without the need for system or material substitution);
- Updating risk evaluation criteria and classification systems (groups of plastic products and materials) in light of new science as well as product and material innovations.

Groups of plastic products, and materials

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

Table 1: Classification of plastic products and materials by groups

Groups	Sub-group 1	Sub-group 2	Sub-group 3	Examples of specific products or materials
1. Packaging	Contact-sensitive	Food and beverage	1a. Single-use food & beverage	*Beverage bottles, cups, plates, utensils/cutlery, 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. Multi-use food & beverage	*Reusable beverage bottles, containers and foodware (cups, plates, utensils)*
		1c. Personal care		*-Bottles, tubes, pots and other containers for toothpaste, shampoo, soap, creams, lotions, scrubs, make-up* *-Synthetic hair and plastic hair accessories, 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)*
		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, childrens' clothing, pacifiers and teething accessories*
		1f. Other contact sensitive		*Packaging for animal feed, veterinary devices, hazardous products, plastic components in kitchen appliances*
	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	Single-use/ Short 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*
		Non-fiber		*-Shopping/carrier bags, balloons, plastic earbuds, disposable e-cigarettes, plastic confetti, contact lenses, bin bags, PPE (e.g. goggles, films, gloves)* *-Oxo-degradable plastics (cause significant secondary microplastic release, typically single-use)*
	Longer use phase items	2e. Cause significant secondary microplastic release		*-Tyres, synthetic textiles, paint, plastic grass (astro turf)* *- Plastic foams, e.g. EPS, XPS (e.g. foam and insulation), PU foam (e.g. furniture), EVA foam (e.g. footwear)* *- Water-soluble plastics (e.g. detergent pods)*
		2f. Other		*Furniture, white goods, durable toys, plastic plants*
3. Sector -specific	3a. Fishing & aquaculture			*Nets, lines, pots and trawls, plastic mesh, PVC piping, fish aggregating devices (FADs)*
	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		*-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*

Framework and criteria to **identify and control high-risk groups** of plastic products and materials

Drawing on how existing multilateral environmental agreements define pollution and pollutants, WWF (2023a) propose a framework to identify groups of high-risk plastic products or materials that could be prioritized for urgent treaty action, by assessing the interaction between:

- the scale of plastic pollution
- the level of harm to health and/or the environment

Risk level = scale of pollution (quantity, leakage, mobility, persistence) **x harm** per unit of pollution

Those groups of plastic products or materials most likely to cause more harm to health or the environment on a larger scale (due to production and leakage volumes as well as mobility and persistence) are identified as **high-risk groups** and prioritized for action. Remaining groups can be phased down at a later date following a start-and-strengthen approach, based on assessments by a treaty scientific and technical body.

Criteria for to identify high-risk groups of plastic products and materials are streamlined by nature since they are intended to guide rapid action, and plastics that don't represent high risk according to this definition can by no means be assumed to be sustainable. Examples of criteria to identify high-risk plastics include the following:

Table 2: Examples of criteria for high-risk plastic products and materials

Examples of criteria			**Examples of groups of plastic products or materials**
Scale criteria	Production volume		Single use plastics (e.g. all packaging, foodware, PPEs), synthetic textiles
	Leakage potential (macroplastics)		**-Lightweight plastic materials, small plastic products and components** (mobility, potential for long-range transport): e.g. bags, film, wrap, foams, cigarette butts, small macroplastics **-Plastics used in sensitive locations**:e.g. plastics in fishing and aquaculture, plastics used in natural reserves and marine-protected areas
	Leakage potential (primary microplastics)		-Pre-production primary microplastics pellets, flakes or powders -In application solid primary microplastics
	Leakage potential (secondary microplastics)		Tyres, synthetic textiles, paint, oxo-degradable plastics, plastic foams, water-soluble plastics (Rolsky & Kelkar, 2021)
	Leakage potential (non-solid plastics)		Water-soluble and non-solid plastics are found in wastewater from use in personal care (e.g. liquid silicones), absorbent hygiene products and wastewater treatment, with a high risk of leakage to water bodies where they may be ecotoxic (Hossain et al. 2021). Leakage is also increased during application of wastewater sludge to land (Plastic Soup Foundation, 2022).
Harm criteria	Harm to human health	Carcinogenicity, mutagenicity, reproductive toxicity, specific organ toxicity, endocrine disruption	**-Contact-sensitive** plastic products and components due to heightened risk of absorption of chemicals and microplastics. Risk is further heightened when exposed populations are **children**. E.g. childrens' clothing is particularly likely to contain prints made from phthalate-containing PVC (Rovira & Domingo, 2019). *-Note: these harms stem from chemical composition - see chemicals and polymers of concern in following section.*
		Amplifies infectious disease	Tyres and plastic containers accumulate water and provide breeding grounds for dengue-infected mosquitoes (Gainor et al., 2022)
	Harm to the environment	Ecotoxicity	-All groups of plastic products with high leakage criteria (see above) *-Note: ecotoxicity stems from chemical composition - see chemicals and polymers of concern in following section.*
		Environmental persistence, bioaccumulation potential and mobility, including	**-Mobility & long-range transport, including to protected locations**: All lightweight plastic materials, small plastic products and components, and microplastics **-Persistence**: all plastics including **non-solid plastics**, e.g. liquid silicones in personal

		long-range transport	care products (Teixeira et al., 2005), acrylate-based super-absorbent polymers in absorbent hygiene products (Chen et al., 2022)
		Climate change	Both direct and indirect impacts must be considered, e.g. how microplastics disrupt ocean carbon sequestration (Shen et al., 2020).
		Basel Convention Annex III characteristic H13: "Capable, by any means, after disposal, of yielding another material, e.g., leachate, which possesses any of the [hazardous] characteristics listed above [in Annex III to the Basel Convention]."	-**Halogenated plastics** (particularly chlorine and bromine e.g. PVC, bleach containers, plastics with brominated flame-retardants) are a source of dioxins and furans upon combustion. This harm occurs most acutely in open-burn situations and during landfill fires or fires involving stockpiled plastic waste awaiting recovery operations, but also happens during controlled thermal treatment (IPEN & International Pellet Watch, 2021). -**Toxic plastics** can also emit toxic leachate particularly when open-dumped or when in sub-standard landfills. *-Note: H13 Basel characteristics stems from chemical composition - see chemicals and polymers of concern in following section.*

Table 3: Control measures plastic products and materials based on high-risk status and avoidability

Plastic materials and products	**High-risk**	**Not high-risk**
Currently avoidable	-**Ban** upon treaty entry into force -High priority to subsidize and scale up sustainable alternative materials & processes if needed *E.g.* *- primary microplastics: plastic microbeads, plastic glitter and confetti* *- single-use plastics (fiber): plastic wet wipes, cellulose acetate cigarette butts, disposable plastic vacuum filters, plastic tea bags* *- single-use plastics (non-fiber): bags, balloons, foodware, plastic earbud sticks, disposable e-cigarettes, small sachets*	-**End subsidies** upon entry into force -Taxes upon entry into force until medium-term date (e.g. 2030) -Phaseout by medium-term date (e.g. 2030) -Apply plastics sustainability criteria to all lifecycle phases until phaseout
Not yet avoidable	-**End subsidies** upon entry into force -Taxes upon entry into force until medium-longer-term date (e.g. 2035) -High priority to develop, subsidize and scale up sustainable alternative materials & processes -Phaseout by medium-longer-term date (e.g. 2035) -Apply plastics sustainability criteria to all lifecycle phases until phaseout	-**End subsidies** upon entry into force -Taxes upon entry into force until longer-term date (e.g. 2040) -Regular priority to develop, subsidize and scale up sustainable alternative materials & processes -Phaseout by longer-term date (e.g. 2040) -Apply plastics sustainability criteria to all lifecycle phases until phaseout
Essential uses *(only for products or materials in specific context of use)*	-High priority to develop & scale up sustainable alternative materials & processes -Total volume must be consistent with production phasedown to sustainable levels -Apply plastics sustainability criteria to all lifecycle phases *Examples of possible general essential use exemptions* *- Durable plastics in renewable energy, in electronic mobility infrastructure and vehicles, where no sustainable alternative is available* *- Single-use plastic PPE where no sustainable alternative is available* *- Polycarbonate lenses for prescription glasses where no sustainable alternative is available* *Examples of possible country-specific and timebound essential use exemptions:* *- Single-use drinking water sachets and bottles in countries with poor potable water access* *- Drums for water dispensers in countries with poor potable water access* **See section below on essential use for more detail.**	

3. Plastic chemicals of concern, including polymers

Intersessional work on chemicals of concern should guarantee a robust process for the evaluation of chemicals including polymers associated with plastics by defining a **central role for a subsidiary scientific body** that would:

- assess chemicals and groups of chemicals based on the criteria for chemicals of concern, and propose controls based on such assessments;
- elaborate of non-exhaustive lists of chemicals where appropriate to facilitate implementation;
- propose updates to criteria for the evaluation of chemicals of concern, based on emerging science.

The treaty should privilege assessments and controls **by group** to avoid loopholes and regrettable substitution. Both criteria for chemicals of concern and lists should be included in treaty annexes to facilitate updating in line with new scientific findings.

GAIA does not believe it is appropriate or effective for INC Members to engage in intersessional work on comprehensive lists of plastic chemicals and polymers of concern, because of the level of scientific work required for the determination of risks from chemicals, with mixture effects and adsorption of environmental toxicants bringing additional layers of complexity.

Nevertheless, intersessional work could discuss potential criteria to identify chemicals of concern, including polymers, that fall under the scope for control under the plastics treaty, as recommended by IPEN, 2023:

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 deserve consideration:

- characteristic H13 from the Basel Convention's Annex III listing of hazardous characteristics is also relevant: "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]."
- Climate change criteria, including direct harm through GHG emissions (e.g. carbon, methane), and indirect harm e.g. disruption of ocean carbon pump, deforestation.

Intersessional work should also consider **priority bans and phaseouts of plastic polymers and chemicals of concern already regulated** at the national, regional or international levels, as well as chemicals listed under the Stockholm Convention and those highlighted by the WHO International Agency for Research on Cancer (IARC) as carcinogenic to humans, including and not limited to:

- PVC
- Phthalates
- Bisphenols
- PFAS chemicals and other fluorinated polymers
- Brominated flame-retardants
- Asbestos (e.g. as a flame-retardant filler in PVC flooring).
  See IPEN, 2023 for a longer list.

4. The essential use approach

Essential use is a **systematic approach to managing chemicals or substances of concern**, such as plastics, that only allows their use when it is essential for society. It is more elegant, efficient and systematic, and less burdensome, than a chemical-by-chemical risk-management approach. It reduces harm to human health and the environment by not allowing non-essential uses, while ensuring that critical functions for society are allowed, until alternative chemicals or technologies are developed that fulfill those critical functions. **An essential use approach is consistent with a freeze and phasedown of plastic production to sustainable levels**, because it still requires controls over the volume of plastic needed for exempted uses, and still requires that sustainability criteria are applied to exempted uses. It also offers a more predictable and stable regulatory environment for industry by clearly signaling that only the use of chemicals that are safe for human health and the environment should be expected to be authorized in the long term.

The Montreal Convention defined **essential use criteria** its Decision IV/25 (1992):

> The *Fourth Meeting of the Parties* decided in *Dec. IV/25*:
>
> 1. to apply the following criteria and procedure in assessing an essential use for the purposes of control measures in Article 2 of the Protocol:
>   1. that a use of a controlled substance should qualify as "essential" only if:
>   1. it is necessary for the health, safety or is critical for the functioning of society (encompassing cultural and intellectual aspects); and
>   2. there are no available technically and economically feasible alternatives or substitutes that are acceptable from the standpoint of environment and health;

The European Union refined this approach under its Chemicals Strategy for Sustainability Towards a Toxic-Free Environment where it set out to *"define criteria for essential uses to ensure that the most harmful chemicals are only allowed* ***if their use is necessary for health, safety or is critical for the functioning of society*** *and* ***if there are no alternatives*** *that are acceptable from the standpoint of environment and health"* (European Commission 2023, emphasis added).

Essential use exemptions do not apply directly to broad types of plastics chemicals, materials or products as such, but to **specific uses of specific plastics in specific contexts for a specific time period**, in the

absence of sustainable alternatives (Cousins et al., 2021). In that sense, although they are exemptions to bans and phaseouts, essential use exemptions are not a whitelist or positive list of products and materials that can be produced with no controls.

Drawing on similar dispositions under the Montreal Protocol, the treaty could grant **general essential use exemptions** for specific uses of plastic products, applications, materials or chemicals that are likely to remain critical for society across the globe in the long term, e.g. durable plastics in the transport and renewable energy infrastructure sectors, durable plastics and some single-use plastics in healthcare and laboratory settings, where no sustainable alternative is available. In addition, Parties could apply for **country-specific and time-bound essential use exemptions** for critical uses that don't apply globally, e.g. single-use plastics for distribution of drinking water in countries with poor access to safe piped drinking water.

Having a **robust process for granting essential use exemptions** is key. Plastics treaty scientific and technical bodies would assess applications for exemptions, and proposed decisions on the applications would also be reviewed by technical committees that would emit recommendations to the Conference of the Parties, where final decisions would be made, as is the case under the Montreal Protocol. The combination of relatively broad criteria ("critical for the functioning of society") and a robust assessment process would allow for a flexible yet thorough approach to granting exemptions that could take into account both unplanned global events and geographic specificities.

Once essential use exemptions are granted, conditions must still apply such as, as suggested for the EU's Chemicals Strategy for Sustainability (European Commission 2023) :

- **Minimizing the volume of essential use** to comply with reducing plastic production to sustainable levels;
- Minimizing harm to human health and the environment and emissions into the environment, including by applying sustainability criteria across the lifecycle of plastics
- Incentivising research into and scaling up of alternative substances and systems/technologies (such as reuse systems)
- A time-bound review process to reassess whether essential use still stands.

The Montreal Protocol also set requirements for the production and consumption of controlled substances for essential use in its Decision IV/25 (1992):

> 2. that production and consumption, if any, of a controlled substance for essential uses should be permitted only if:
>   1. all economically feasible steps have been taken to minimize the essential use and any associated emission of the controlled substance; and
>   2. the controlled substance is not available in sufficient quantity and quality from existing stocks of banked or recycled controlled substances, also bearing in mind the developing countries' need for controlled substances;

The global plastics treaty could also adopt additional guidance on essential use criteria in annexes at future Conferences of Parties meetings.

5. Scaling up reuse systems, sustainability criteria

The successful reduction of plastic production to sustainable levels will depend greatly on the effective scaling up of sustainable alternative systems and materials. For this reason, intersessional work must include consideration of **scaling up reuse systems**, as well as discussion of **sustainability criteria to assess the impact of materials on human health and the environment** across their full lifecycle, that a subsidiary scientific and technical body would use to assess both plastics that remain in circulation as well as alternative materials used to replace plastics.

Scaling up reuse systems

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 is often the most sustainable alternative system** to replace single-use plastics, including ino the packaging sector (Global Plastics Policy Centre, 2023). Reuse is the cornerstone of a transition from linear extraction-production-consumption systems to a more circular economy (GAIA, 2023a).

Intersessional work on scaling up reuse systems should consider the following:

- **Reuse targets** for different groups of products and sectors in treaty annexes to allow their updating:
    - For packaging: consider requiring 50% of all plastic packaging placed on the market to be reusable by 2030, to jump-start an economy-wide shift to reuse. Dedicated targets can be assigned for specific sectors such as beverages, retail, and the hospitality sector (hotels, restaurants and cafés or "HoReCa").
    - Consider reduction targets and refill targets.

- **Standardization** through general and sectoral reuse guidelines, encouraging the use of economic incentives, defining requirements for pooled systems and providing guidance on their set-up and operation.
    - For reusable packaging and system design, standardize minimum number of cycles, labeling, digital tagging, reuse symbols and return incentives, to allow cross-company sharing of container collection points, washing facilities, and logistics

  For more information, see Zero Waste Europe (2022) and Global Plastics Policy Centre (2023).

Sustainability criteria

Criteria for sustainable alternatives to plastics to be considered under the plastics 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 to go **beyond an eco-efficiency approach limited to product-to-product comparisons**, typical of LCAs. Instead, sustainability assessments under the plastics treaty must consider **overall environmental and human rights impacts**, including increases of overall material production triggered by substitutions, 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).

Although LCAs are often used to guide policy decisions on substitutions for sustainability, they have many limitations (see Eunomia, 2020 and Eunomia, 2023), including:

- Issues with data quality and transparency: secondary datasets, usually derived from industry inventories, are not always updated regularly, leading to inaccurate results. LCA studies and underlying data are rarely published in full.
- Limited scope that ignores important lifecycle phases
- Failure to consider overall material production and consumption
- Bias through excessive focus on certain criteria (e.g. carbon intensity) and complete omission of others (plastic and toxic pollution, human rights)
- Many LCAs are compromised by conflicts of interest with businesses in the plastics value chain and lack third-party critical review by independent experts

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

Sustainability criteria refer both to **intrinsic material and process qualities**, and to **impacts on planetary boundaries and human rights**. Quantitative thresholds and qualitative indicators could be developed by a subsidiary scientific and technical body for each criterion, adopted in a treaty annex and updated following evolutions in technology, or further planetary boundary degradation requiring more strict values.

Table 4: Examples of sustainability criteria to assess plastics within sustainable production levels and sustainable alternative systems and materials

Criteria		Comments
Product and process design	**Material efficiency**	Avoiding production in the first place is optimal material efficiency (e.g. refill, reuse). Materials and products must be designed so that once products no longer can be reused or repaired, they can undergo high-quality recycling (safe, high material efficiency and high-quality recyclate), so that the recyclate has a chance to truly displaces virgin plastic, which is currently rarely the case (GAIA, 2023a). 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 production processes and midstream processes (e.g. washing and logistics for reuse) must be energy-efficient. Energy efficiency is also important downstream, during waste management. Despite its label, so-called "waste-to-energy" incineration typically has low energy efficiency and can be endothermic (net waste of energy) 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. Waste-to-fuel pyrolysis operations are also endothermic and as such, energy inefficient (Rollinson & Oladejo, 2019).
	Design for reuse or to extend the use phase	Reuse us most circular and environmentally-beneficial (GAIA, 2023a). 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 (Global Plastics Policy Centre, 2023). The longer a product's use phase, the lower its carbon intensity. Use phase can be extended by designing for repair, for instance through ease of disassembly and access to repair manuals and spare parts (The Restart Project, 2021).
	Transparency on contents	Information gaps on product composition prevent safe reuse and high-quality recycling. Transparency is a key sustainability and eco-design criterion, as included by the European Union in its proposed Ecodesign for Sustainable Products Regulation. It can be achieved through Digital Product Passports.

Harm to planetary boundaries, human rights	**Climate change**	Upstream energy and material sourcing choices significantly impact climate change outcomes. The use of fossil-free materials and energy sources can reduce greenhouse gas emissions, depending on how these materials and energy sources are produced. Carbon intensity threshold values considered to be "sustainable" should decline over time, consistently with the Paris Agreement. Carbon intensity reduction through carbon capture or offsetting must be excluded from assessments. 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	Ozone-depleting chemical CFC-11 is banned under the Montreal Protocol but remains in use in some countries in the manufacturing of polyurethane foam (Peplow, 2018). The CFC-11 that remains in the foam is released during the lifetime of the product, and emissions accelerate if the foam is shredded (Kjeldsen & Jensen, 2001). Recycling of plastics from electronic waste has ozone-depleting impacts (Liu et al., 2022) while incineration of plastic releases chlorine and bromine that contribute to ozone depletion.
	Land use & land system change	The sourcing of raw materials for product manufacturing and 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 jeopardizes agricultural food production.
	Eutrophication and ocean acidification	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.
	Water use	Water use can be significant during the production phase for certain materials (e.g. biomass production) and is also significant during reuse (washing), as well as plastic recycling processes (washing and sink-float separation), posing particular challenges in water-scarce regions.
	Changes to soil structure, composition	Microplastic pollution in soils affects soil physical, chemical and microbiological properties. Microplastics also undermine soil fertility and crop safety (Wang et al., 2022).
	Toxics content, emissions and impacts	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 agro-toxics, with toxic pollution impacts on soil, water bodies, workers and neighboring communities. During the midstream phase, it is worth noting that 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. Assessment of toxicity impacts includes ecotoxicity, carcinogenicity, mutagenicity, reproductive toxicity, specific organ toxicity and endocrine disruption.
	Biodiversity loss	Though biodiversity loss may stem from various criteria above, it deserves its own criterion to allow for a comprehensive assessment of biodiversity impacts.
	Leakage potential	Assessment of pollution from leakage, including of microplastics, must consider direct quantities of emissions (including "littering", "leakage", pellet loss, use phase emissions 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).
	Environmental justice, human rights and Indigenous rights impacts	While harms to human health (including carcinogenicity, mutagenicity, reproductive toxicity, specific organ toxicity and endocrine disruption) are a useful proxy to assess the human right to health, qualitative assessments are also needed. 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, including to information, meaningful participation and consultation, are upheld in decisions to build or expand industrial facilities along the lifecycle of plastics their alternatives.

7. EPR guidelines

Despite the attention they receive in the policy world, EPR schemes currently are often ineffective, voluntary arrangements that ignore the zero waste hierarchy, giving at best marginal support for reuse. When they have eco-modulation of fees, the scale is too insignificant to drive design decisions, and they have funded tokenistic reuse and repair rather than supported system change away from single-use (GAIA, 2023b). They often deprive informal waste workers of employment and livelihoods they built on access to waste streams prior to the establishment of EPR, and provide only a fraction of the true cost of plastic waste management.

While no intersessional work is needed on EPR, the treaty could require mandatory EPR schemes at the national level that:

- Require companies assume **full financial responsibility for all costs** associated with plastic waste management, including collection, transport and processing costs of both recyclable and residual fractions, public communication and education, independent auditing and oversight, and administrative costs.
- Are **piloted by governments, with public oversight** on compliance, enforcement, reporting, and require spaces for public input and participatory planning
- **Include waste pickers and other waste workers** that support existing municipal waste management systems, recognize the preexistence of these stakeholders in places where they work, involve them in policy design and provide them with decent livelihoods and risk protection.
- **Uphold the waste hierarchy** by using effectively-priced eco-modulation to reward redesign for reduction and reuse, and penalize single-use products; and by allocating EPR funding along the waste hierarchy, prioritizing reduction and reuse.

Beyond those elements, future treaty COPs could adopt guidance that builds on existing Basel Convention guidance.

8. Just transition

While intersessional work on just transition may not be needed, guidance on just transition may be developed after treaty adoption for consideration by future treaty COPs. A just transition should focus on preventing new and similar dependencies from being created by targeting systemic change and setting the framework for equity.

The global plastics treaty must secure the **rights of both formal and informal workers** who work with plastic waste. Informal waste pickers and workers in cooperative settings in particular have made and continue to make a colossal **contribution to waste collection and sorting**, handling about 60% of all plastic waste that is collected and recycled globally and reducing plastic pollution. These workers also have endured historical socio-economic marginalization and consistent exposure to toxics in plastic wastes and fumes from open-burning at dumpsites. The global plastics treaty must acknowledge their historical contribution, protect workers' right to occupational safety during waste-management operations and their right to a just transition in the event of loss of livelihood resulting from new global regulations.

The following **occupational health issues** must be addressed, especially in facilities where thermal treatment, extrusion and grinding take place: exposures to microplastics, heavy metals, volatile organic chemicals and dioxins, heat stress and accidents. Workers' access to healthcare and other social benefits

must be guaranteed regardless of labor or migration status. Adherence to international standards on child labour must be ensured.

Adequate compensation for the waste collection and sorting services provided by waste workers, including in the informal sector, is a pressing need. **Just transition** for informal waste workers should involve access to capital, infrastructure and training to support entrepreneurship or employment further up the waste hierarchy with higher income and fewer occupational health burdens, and be supported by appropriate legislation. The transition must ensure full integration into the systems that will replace or complement plastic recycling, including **repair, refill and reuse systems**, including for high-value durable goods. Additional options for alternative economic activities include organics management and the operation, maintenance and repair of sustainable infrastructure.

9. Information on definitions

It is premature to dedicate intersessional or INC negotiating time to final agreement on definitions. A glossary of terms for the plastics treaty could be adopted as an annex during the early COPs, grouping definitions and defining criteria from different control measures and provide clarity for adequate implementation where needed.

The following working definitions may be helpful for negotiators in the context of discussions on related control measures:

Plastic pollution and plastics

Plastic pollution is not limited to the unintended or unlawful presence of plastic in the environment, but also includes toxic pollution from plastics (from GAIA, 2022).

Plastic product: A product made wholly or partly from plastic materials (adapted from Directive (EU) 2019/904 on the reduction of the impact of certain plastic products on the environment).

Plastic materials consist of plastic polymers and additives, both unintentional and intentional, including fillers (from GAIA, 2022).

Plastic polymers include all synthetic polymers (organic, inorganic and hybrid) as well as all semi-synthetic polymers, in their diverse states of matter, water solubility and water absorbency (from GAIA, 2022).

Semi-synthetic polymers are natural polymers that have been modified in a manner that affects polymer properties (e.g. vulcanization, viscose process, lyocell process) (from GAIA, 2022).

For more information, see GAIA 2022, Defining plastic products, materials and polymers: a proposal.

Control criteria

High-risk plastic product or material: Plastic product or material with high risk of causing plastic pollution, based on its probability of the plastic to end up in the environment, and resulting impacts on the environment and human health (adapted from WWF, 2023a).

Avoidable plastic product or material: A plastic or material product 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 product: A product 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 (adapted from Directive (EU) 2019/904 on the reduction of the impact of certain plastic products on the environment).

Short-lived product: A product with a use phase of less than three years.

Essential use: Use considered essential because it is necessary for health or safety or critical for the functioning of society and for which there are no alternatives that are acceptable from the standpoint of environment and health (adapted from the European Union Chemicals Strategy for Sustainability Towards a Toxic-Free Environment which draws on the Montreal Protocol Decision IV/25).

Sustainable alternatives

Reuse system: A comprehensive system designed for multiple circulations of reusable packaging which remains in the ownership of the reuse system and loaned to the consumer (from Global Plastics Policy Centre, 2023).

Refill: The action of using a container that is owned by the consumer and is either refilled in the shop or refilled at home (from DUH & ZWE, 2022).

II. Potential areas for intersessional work - Contact Group 2

Further work to consider how a potential financing mechanism could work

The treaty could establish a **dedicated fund** to ensure most funding and dedicated administrative capacity, and further intersessional work to make progress on arrangements for a financial mechanism would be important to ensure that Member States, especially developing countries and economies in transition, have assurances that they can access adequate, stable and predictable funding at the moment of ratification.

Further intersessional work could seek to define **activities** to be funded or excluded by the treaty finance mechanism:

- Include incremental compliance costs, institutional strengthening, policy development, just transition funding for waste workers (reskilling, access to capital & equipment), reuse pilot projects
- Exclude waste-management technologies that are not environmentally sound (e.g. incineration including in cement kilns, "chemical recycling"), plastics alternatives that are not sustainable (e.g. single-use bio-based plastics)

Such work could also discuss the way in which the dedicated fund is replenished and who will benefit from it, and in particular the extent to which the principle of common but differentiated responsibilities should apply.

While alternative sources of finance for national governments can include taxes, levies and EPR schemes, **no carbon or plastic credits must be considered**, to avoid greenwash of plastic production, plastic pollution and polluting waste management.

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GAIA is a global network of grassroots groups and national and regional alliances representing more than 1000 organizations from 92 countries. We envision a just, zero waste world built on respect for ecological limits and community rights, where people are free from the burden of toxic pollution, and resources are sustainably conserved, not burned or dumped. We work to catalyze a global shift towards environmental justice by strengthening grassroots social movements that advance solutions to waste and pollution.

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