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DIALOGUE ON PLASTICS POLLUTION AND ENVIRONMENTALLY SUSTAINABLE PLASTICS TRADE

SUBMISSION BY THE FORUM ON TRADE, ENVIRONMENT & THE SDGS (TESS)

Workshop on Plastic Substitutes - 6 December 2022

DOCUMENT DE SÉANCE NON OFFICIEL[1]

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WORKSHOP ON SUSTAINABLE AND EFFECTIVE SUBSTITUTES AND ALTERNATIVES FOR PLASTICS

Questions for written submissions by delegations and stakeholders

Submission from the Forum on Trade, Environment and the SDGs (TESS)

5 December 2022

1) Working definitions

Q. What are the concepts for which a "working definition" could help the identification of "environmentally sustainable and effective substitutes and alternatives" (please select all that apply). For each, what are the key elements that should be included in a working definition?

	concept	Key elements	Potential source
☐	plastic		
☐	microplastics		
☐	plastics substitutes	• Contains naturally occuring polymers (of plant or animal origin) or non-renewable mineral substances found in nature • Minimal or simple processing or transformation that does not create synthetic or semi-synthetic polymers • Does not contain harmful chemicals or additives • Does not require special composting facilities to enable "end of life" composting (for animal and plant-based materials) • Does not have any toxic or harmful impact upon disposal or leakage into the environment (both land and oceans) • Time taken for biodegradation in natural environment may also be important to consider (too long of a time can still cause damage in terrestrial and marine environment to species). For instance, plastic substitutes must demonstrate disintegration and inherent biodegradation during marine water exposure and must not exhibit any adverse environmental impacts on the survival of marine organisms while in the marine environment	• United Nations Conference on Trade and Development. (2021). *Material substitutes to address marine plastic pollution and support a circular economy: Issues and options for trade policymakers*. https://unctad.org/system/files/official-document/ditctedinf2021d5_en.pdf • Oceana (2022). *Bioplastic Remains Plastic:Bio-based, biodegradable and compostable plastics*. https://europe.oceana.org/wp-content/uploads/sites/26/2022/11/FACTSHEET-BIOPLASTIC-REMAINS-PLASTIC.pdf
☐	plastic alternatives	• Irrespective of feedstock source, are composed of	• United Nations Conference on Trade and Development. (2021). *Material substitutes to address*

		synthetic or semi-synthetic polymers. • Can include products made of recycled plastics • Do not contain harmful chemicals or additives • Can require special composting facilities to enable "end of life" composting • Have same impact as conventional plastics in case of leakage into the environment. • Time taken for biodegradation in natural environment may vary and is important to consider (too long of a time can still cause damage in terrestrial and marine environment, including through degradation into microplastics)	*marine plastic pollution and support a circular economy: Issues and options for trade policymakers*. https://unctad.org/system/files/official-document/ditctedinf2021d5_en.pdf • Oceana (2022). *Bioplastic Remains Plastic: Bio-based, biodegradable and compostable plastics*. https://europe.oceana.org/wp-content/uploads/sites/26/2022/11/FACTSHEET-BIOPLASTIC-REMAINS-PLASTIC.pdf
☐	environmentally sustainable	• Often depends on life-cycle variables that are also country-specific (like energy mix) so cannot have an absolute determination • Variables such as energy-mix or presence of adequate waste management facilities can also change over time • No agreed single LCA methodology that can be applied	United Nations Conference on Trade and Development. (2022). Substitutes for Single-Use Plastics in Sub-Saharan Africa and South Asia: Case Studies from Bangladesh, Kenya and Nigeria. https://unctad.org/system/files/official-document/tcsditcinf2022d3_en.pdf
☐	effective (including cost and functionally effective)	• Specific end-use of the plastic material it is meant to replace • Costs need to be viewed in a broader context (especially in the presence of fossil fuel subsidies that keep prices of virgin plastics feedstocks low)	
☐	single use		
☐	re-usable	• Re-use means use of a product more than once in its original form.	Term included in UNEP glossary for INC-1. https://wedocs.unep.org/bitstream/handle/20.500.11822/41266/Glossary_Key_Terms_E.pdf
☐	biodegradable	• The degradation time required for items to be labelled as "biodegradable" should be short enough to prevent any harmful effects on biota and/or the environment. • Biodegradability labels should ensure actual biodegradability of products in all kinds of environments, includingg the deep sea • Future testing standards should be adapted to replicate the actual conditions where plastics	Oceana (2022). Bioplastic Remains Plastic: Bio-based, biodegradable and compostable plastics. https://europe.oceana.org/wp-content/uploads/sites/26/2022/11/FACTSHEET-BIOPLASTIC-REMAINS-PLASTIC.pdf

		accumulate and consider degradation time as a key criterion for biodegradable plastics.	
☐	erodible		
☐	recyclable	• A key question related to the designation of products as recyclable is whether adequate capacity exists within a certain jurisdiction or other arrangements have been made to ensure that recyclable products are in fact recycled. • A further question is whether they require special sorting capacities or recycling facilities? (such as for products made with mixed polymers or materials). • A further question is relates to the toxicity of recyclable products and the material composition of products, which impacts whether or not these can be safely recycled. • Key considerations are whether that there is a threshold for the number of times the product can be recycled for the same functional end-use • There is a need to define the threshold of the minimum number of times a polymer can be recycled without losing much of its functional value and qualities such as durability • There is a need to specify the material content of recycled materials, including the material composition, such as presence and concentration of additives. • A further questions relates to the environmental impacts and cost-effectiveness of recycling processes used (including GHG emissions) and an integration of this into LCA assessments of products.	
☐	recycled content	• Key considerations are whether that there is a threshold for the number of times the product can be recycled for the same functional end-use • There is a need to define the threshold of the minimum number of times a polymer can be recycled without losing much of its functional value and qualities such as durability • There is a need to specify the material content of recycled materials, including the	

		material composition, such as presence and concentration of additives. • A further consideration is whether variations in threshold levels among countries for recycled content requirements are appropriate.	
☐	compostable	▪ Differentiation is needed on whether a product is naturally compostable or home compostable (under what conditions and in what time frame) or if there is a need for special composting facilities ▪ Producers and vendors of 'compostable' plastics should be required to specify that these are "compostable for industrial composting" where they do not decompose in the natural environment and have similarly damaging effects to other plastics (Oceana, 2022). ▪ According to the EU, "Compostable packaging means packaging capable of undergoing physical, chemical, thermal or biological decomposition such that most of the finished compost ultimately decomposes into carbon dioxide, mineral salts, biomass and water,[…] and does not hinder the separate collection and the composting process or activity into which it is introduced in industrially controlled condition" (European Commission, 2022).	• Oceana (2022). Bioplastic Remains Plastic: Bio-based, biodegradable and compostable plastics. https://europe.oceana.org/wp-content/uploads/sites/26/2022/11/FACTSHEET-BIOPLASTIC-REMAINS-PLASTIC.pdf • European Commission (2022). Commission proposal on packaging and packaging waste, amending Regulation (EU) 2019/1020 and Directive (EU) 2019/904, and repealing Directive 94/62/EC. Under Article 3- "Definitions" on page 53
☐	plastic-related emissions	▪ This terms covers all emissions across the life cycle of a plastic product, including emissions in terms of air, water or terrestrial pollution linked to production through to end of life.	
☐	waste management technologies	This term refers to a broad range of technologies for sorting, collection, management, recycling and clean up of plastic waste. The sustainability credentials of different waste management technologies varies, including their appropriateness for local employment and social circumstances and priorities, as well as their environmental implications. The GHG emissions intensity of different waste management technologies varies as do chemical emissions and toxicity of the waste	

		management processes and the products generated. In short, not all waste management technologies are environmentally sound and their effectiveness and environmental credibility will depend on local regulatory systems and enforcement, as well as on capacities for the operation and maintenance of technologies.	
☐	Other		

2) HS code identification exercise, and trade-related measures enabling substitution of single-use plastic products (SUPP) and other "problematic" goods by sustainable materials.

Q. Please indicate what "environmentally sustainable and effective substitutes and alternatives" are already being traded – even if not perfect/ideal solutions – and their identification codes under the Harmonized Commodity Description and Coding System (HS) – even if those codes currently cover other products.

As noted in a 2022 report from UNCTAD:

> "From a trade-policy perspective, identifying plastic substitutes, particularly end-use products, within the Harmonized Commodity Coding and Description System (HS) is not easy. Whereas some natural fibre feedstocks such as jute and sisal have their own specific HS code at the six-digit level (the most detailed level at which product codes are harmonized globally), others such as banana and areca leaves are "hidden" within broader six-digit codes that include a large number of vegetable plaiting materials such as bamboo, reeds and rushes. Similarly, although paper, paperboard, and products made from paper and paperboard are relatively easy to identify, drinking straws made from wheat fibre are classified under a broader category that includes baskets and other articles made from vegetable materials. This makes it challenging to calculate precisely the global trade flows in these straws" (UNCTAD, 2022).

Illustrative examples are highlighted in the tables below.

Non-plastic Substitutes - Feedstocks (Illustrative Examples)		
Feedstock *[Category]*	**HS code**	**HS subheading description**
Paper and cardboard ***[Natural Fibres]***	**4811.90**	Other paper, paperboard, cellulose wadding and webs of cellulose fibres
Jute ***[Natural Fibres]***	**5303.10**	Jute and other textile bast fibres, raw or retted
Sisal	**5607.21**	Binder or baler twine;Of sisal
[Natural Fibres]	**5607.29**	Other;Of sisal
Banana leaves ***[Agriculture by-product]***	**1401.90**	Vegetable materials of a kind used primarily for plaiting (for example, bamboos, rattans, reeds, rushes, osier, raffia, cleaned, bleached or dyed cereal straw, and lime bark);Other
Cotton [***[Natural Fibres]***	**5201.00**	Cotton;not carded or combed
Hemp ***[Natural Fibres]***	**5302.10**	True hemp, raw or retted
Coconut Husks ***[Natural Fibre]***	**5305.00**	Coconut, abaca (Manila hemp or Musa textilis Nee), ramie and other vegetable textile fibres, not elsewhere specified or included, raw or processed but not spun; tow, noils and waste of these fibres (including yarn waste and garnetted stock)
Areca leaf ***[Agriculture by-product]***	**1401.90**	Vegetable materials of a kind used primarily for plaiting (for example, bamboos, rattans, reeds, rushes, osier, raffia, cleaned, bleached or dyed cereal straw, and lime bark);Other
Wheat husks ***[Agriculture by-product]***	**1213.00**	Cereal straw and husks, unprepared, whether or not chopped, ground, pressed or in the form of pellets

Bamboo wood ***[Natural vegetable material]***	**4409.21**	Wood (including strips and friezes for parquet flooring, not assembled) continuously shaped (tongued, grooved, rebated, chamfered, V-jointed, beaded, moulded, rounded or the like) along any of its edges, ends or faces, whether or not planed, sanded or end-jointed. -Of Bamboo
	4412.10	Plywood, veneered panels and similar laminated wood -Of bamboo
Glass ***[Mineral Product]***	**7001.00**	Cullet and other waste and scrap of glass; glass in the mass
Aluminium ***[Mineral Product]***	**7601**	Unwrought aluminium
	7602	Aluminium waste and scrap

Non-plastic Substitutes - Products		
Compostable or recyclable substitute	**HS code**	**HS subheading description**
Grocery and other bags (paper) ***[Grocery bags/packaging]***	**4819.30**	Sacks and bags, having a base of a width of 40 cm or more; of paper, paperboard, cellulose wadding or webs of cellulose fibres
	4819.40	Other sacks and bags, including cones; of paper, paperboard, cellulose wadding or webs of cellulose fibres
Grocery and other bags (jute) ***[Grocery bags/packaging]***	**6305.10**	Sacks and bags, of a kind used for the packing of goods; Of jute or of other textile bast fibres of heading 5303
Grocery and other bags (cotton) ***[Grocery bags/packaging]***	**6305.20**	Sacks and bags, of a kind used for the packing of goods; Of Cotton
Grocery and other bags (hemp) ***[Grocery bags/packaging]***	**6305.90**	Sacks and bags, of a kind used for the packing of goods; Of other textile materials
Take-out/take-away containers and plates for food (Of paper and paperboard) ***[Food containers & accessories]***	**4819.10**	Cartons, boxes and cases, of corrugated paper or paperboard
	4819.20	Folding cartons, boxes and cases, of non-corrugated paper or paperboard
	4823.69	Trays, dishes, plates, cups and the like, of paper or paperboard;Other
Take-out/take-away containers and plates for food (Of banana/plantain/areca leaves) ***[Food containers & accessories***	**4602.19**	Basketwork, wickerwork and other articles, made directly to shape from plaiting materials or made up from goods of heading 4601; articles of loofah; Of Other vegetable materials
Take-out/take-away containers and plates for food (Of coconut husks) ***[Food containers & accessories]***	**4602.19**	Basketwork, wickerwork and other articles, made directly to shape from plaiting materials or made up from goods of heading 4601; articles of loofah; Of Other vegetable materials
Paper straws ***[Food containers & accessories]***	**4823.90**	Other paper, paperboard, cellulose wadding and webs of cellulose fibres, cut to size or shape; other articles of paper pulp, paper, paperboard, cellulose wadding or webs of cellulose fibres; Other
Wheat fibre straws ***[Food containers & accessories]***	**4602.19**	Basketwork, wickerwork and other articles, made directly to shape from plaiting materials or made up from goods of heading 4601; articles of loofah; Of other vegetable materials
Bamboo crockery and cutlery ***[Food containers & accessories]***	**4419.11**	Tableware and kitchen ware of bamboo - Bread boards, chopping boards and similar boards
	4419.12	Chopsticks
	4419.19	Others

Glass bottles ***[Liquid containers]***	**7010.90**	Carboys, bottles, flasks, jars, pots, phials, ampoules and other containers, of glass, of a kind used for the conveyance or packing of goods; preserving jars of glass; stoppers, lids and other closures, of glass; Other
Aluminium bottles ***[Food containers & single use accessories]***	**7612.90**	Aluminium casks, drums, cans, boxes and similar containers (including rigid or collapsible tubular containers), for any material (other than compressed or liquefied gas), of a capacity not exceeding 300 litres, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment; Other
	7615.10	Table, kitchen or other household articles and parts thereof; pot scourers and scouring or polishing pads, gloves and the like; Of aluminium
	7616.99	Other articles of aluminium; Other

Source: UNCTAD (2022). *Substitutes for Single-Use Plastics in Sub-Saharan Africa and South Asia: Case Studies from Bangladesh, Kenya and Nigeria. https://unctad.org/system/files/official-document/tcsditcinf2022d3_en.pdf*

3) Illustrative and extended list of material substitutes and material identification exercise

Q. Please indicate the key criteria to be considered when identifying environmentally sustainable and effective substitute materials. Please provide examples of such materials as well as relevant HS codes if available.

- End of life-performance upon disposal into the natural environment (including time taken for biodegradation and compostability in both soil and oceans)
- Not composed of synthetic or semi-synthetic polymers (with the exception for recycled plastics)
- Non-use of any toxic chemicals or additives
- Environmental sustainability should be considered using a life-cycle perspective, with a focus on environmental impact as possible along indicators including terrestrial, air and water pollution as well as related impacts. Environmental impacts linked to the production of particular substitutes may depend on the specific national context.
- As much as possible meeting the same end-use functionality as the conventional plastic material it is intended to replace.

For a sample of such materials, please see the section on HS codes above.

4) Minimum criteria for life cycle analysis, including other considerations such as tradability, non-toxicity, affordability, accessibility, and availability.

Q. What are the key criteria that should be included in the life cycle analysis (and other considerations such as tradability, non-toxicity, affordability, accessibility, and availability) of plastics, their alternatives, and substitutes.

<u>Environmental criteria</u>

- Land-use changes involved in the production of feedstocks
- Water-use involved in the production of feedstocks
- Natural availability in a specific country context
- Non-use as far as possible of primary biomass i.e. higher scores for the use of agro-waste feedstocks (if plant-based materials are considered)
- Greenhouse gas emissions involved in the production and processing of feedstocks as well as manufacture of products
- Greenhouse gas emissions arising from open landfills and covered landfills
- Air pollution impacts of open burning or incineration
- Time taken for biodegradability in soils, fresh-water and sea-water under different temperature conditions and depths and propensity to erode into micro-particles during that time that could be harmful for terrestrial and marine life
- Eco-toxicity upon open disposal due to presence of harmful chemicals or additives

- Existence and extent of specific environmentally sound waste management infrastructure available in a country (if this is required for safe end of life disposal. For e.g. industrial composting facilities for many bio-based plastics)

Other considerations

- Established and existing use and acceptability in a country
- Export potential for developing countries
- Promotion of rural livelihoods particularly among small farmers
- Affordability and potential for scale-up (this needs to considered in the context of artificially low costs of virgin plastic feedstocks due to fossil fuel subsidies as well as other subsidies that may be provided directly for production of primary plastics and final plastics products)

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