Fortuna Cools Response
November 18, 2022

ANNEX – Questions for written submissions by delegations and stakeholders

Break-out sessions will focus on the guiding questions below. Delegations and invited stakeholders are kindly invited to send written answers to these questions prior to the event to idp@wto.org.

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		
☐	plastic alternatives		
☐	environmentally sustainable		
☐	effective (including cost and functionally effective)	Air and water permeability, water solubility, customer equipment and handling requirements, tensile strength, failure rate, part or total replacement costs, supply availability risk, lead time, upper and lower capacity constraints	
☐	single use		
☐	re-usable		
☐	biodegradable		
☐	erodible		
☐	recyclable		
☐	recycled content		
☐	compostable		
☐	plastic-related emissions		
☐	waste management 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.

Nonwoven natural fiber insulation (to replace plastic foams including expanded PS and PE) are currently traded under HS Code 5702.20.10 or as a finished cooler box product 4202.92.08

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.

Key identifying criteria can and likely should include:

Technical characteristics: What are the performance sacrifices and performance improvements compared to status quo?

- Air permeability
- Water permeability
- Water solubility
- Tensile strength
- Color fastness
- UV fastness
- End of life and circularity: Can the material be recycled and/or reused, can economic value be captured at end of life, what are the costs associated with end of life, are these costs and processes different in different regions, countries, cities, etc., will the material be subject to existing or emerging Extended Producer Responsibility regimes, does the material break down naturally in 30, 90, or 365 days without extra enzymes or inputs, can the material enter municipal recycling, waste, or compost streams and in which locations, is the material backyard compostable in 30 days, which industry certifications does the material hold, etc.?

Resiliency characteristics and "hidden costs": What are the risks and benefits that are not directly captured in cost of goods and material performance?

- Equipment and handling requirements by intermediate processors, including new machinery and new training required to work with substitutes, and frequency of machinery replacement and retraining
- Failure rates and manufacturer tolerances
- Repairability–potential and cost
- Supply disruption risk, present day and 5-25 years forward–where are the materials produced, where can they be produced, who produces them, how many locations total can the materials theoretically be produced at commercial volumes and existing cost, and what will this look like moving forward?
- Order lead times, at different volumes
- Upper and lower capacity constraints–max and min order quantities as well as ability, limits, and timeframe to scale up production, including pricing effects

Social and environmental characteristics: How do these materials affect the people and places they come from and interact with?

- Local community engagement and familiarity with the materials–i.e. level of indigenous knowledge and indigenous support present, level of local political knowledge and support present?
- Substitution–effect of new demand on land use and local economy
- Water use: Is production of the material diverting or polluting potable or non-potable water?
- Emissions: Is production, use, and disposal of the material increasing or decreasing status quo CO_2e emissions?
- Industrial support: Is material production creating new business opportunities or employment opportunities in places with high unemployment and/or limited advanced industrial opportunities?

Materials that meet some or all of these requirements include:

- Nonwoven coconut fiber mats
- Pulped and molded coconut fiber dust
- Pulped and molded bagasse

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.

Other than the above stated considerations, supply chain resiliency and redundancy is critical, taking into consideration climate change, climate policy, and geopolitical risks.

Climate change risk is important when considering biomaterials: when, where, and what is grown at what cost, and how this could change in a warming climate as well as a planet with more intense and less predictable weather.

Climate policy risk includes new and emerging government restrictions and subsidies for things like oil refineries, which impacts all plastic and most bioplastic production, as well as direct taxes and extended producer responsibility fees on plastics and plastic alternatives. Finally, restrictions and taxes on emission-intensive trade such as international air freight and mining can radically change material availability and cost.

Geopolitical risk includes trade disruptions due to war or non-armed conflict as well as domestic and international supply chain resilience to these risks, with particular attention to component bottlenecks if some or all materials can only be produced in certain places and/or by certain actors. For example, bagasse is produced in the US as well as dozens of countries around the world with sugarcane refineries, but abaca fiber is only produced by a few countries with certain agronomic conditions like the Philippines, and PLA can only be produced in places with existing fossil fuel operations.