

# Criteria and non-criteria based approaches that can be considered relevant or used as examples

Niko Urho

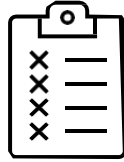
TRPs for Expert Group 2

Meeting of the ad hoc intersessional open-ended expert group

24 August 2024

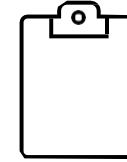
# General notions of criteria- and non-criteria-based approaches in MEAs

- Allow MEAs to identify and add to their scope substances that are undesirable and require global regulation, elimination, or phase-out
- These approaches have been developed organically and their classification into criteria-based and non-criteria-based approaches is open to interpretation
- Both approaches are well-established in MEAs, focusing on chemicals of concern and waste



### **A criteria-based approach**

- Tends to be a more structured approach for specific control measures
- Relies on a limited number of clearly predefined criteria for substance listings
- Allows for technical assessment of the substance/product towards regulation
- Commonly supported by established technical and scientific bodies



### **Non-criteria-based approach**

- Leaves more flexibility in the information and technical assessment process undertaken
- Can be supported by ad hoc expert groups

# Approaches found in MEAs

# Stockholm Convention (POPs)

- **Annex D** (Information requirements and screening criteria):  
Persistence, Bio-accumulation, potential for long-range environmental transport and adverse effects
- **Annex E** (Information requirements for the risk profile):
  - Information on sources, exposure, and potential environmental and human health impacts
  - Also evaluates the information in Annex D to verify whether a chemical is likely, as a result of its long-range environmental transport, to lead to significant adverse human health and/or environmental effects, such that global action is warranted.
  - A risk profile evaluates the information in Annex D and includes further information specified in Annex E
- **Annex F** (Information requirements for risk management evaluation)
  - Focus is on assessing possible socio-economic factors and possible control measures and alternatives (products and processes)

# Rotterdam Convention (PIC procedure)

- **Annex II:** Criteria for listing banned and severely restricted chemicals in Annex III subjecting them to the PIC when traded
  - Final regulatory action has been taken in order to protect human health or the environment
  - Establish that the final regulatory action has been taken as a consequence of a risk evaluation.
  - Consider whether the final regulatory action provides a sufficiently broad basis to merit listing of the chemical in Annex III,
  - Take into account that intentional misuse is not in itself an adequate reason to list a chemical in Annex III
- The criteria are procedural relating to information requirements

# Montreal Protocol (ozone depleting substances and hydrofluorocarbons)

- The Technology and Economic Assessment Panel (TEAP):
  - Ozone depleting potential
  - Global warming potential
  - Atmospheric lifetime
  - Availability and performance of alternatives

# The Minamata Convention (mercury and mercury compounds)

- Mercury-added products under Article 4 are listed in Annex A without pre-defined criteria.
- Under Art 4.7, Parties can propose amendments to Annex A
- Based on Art.4.8 requirement to review Annex A after a 5-year period, The COP established an ad hoc expert group to assist in this process leading to the addition of new mercury-added products (without use of criteria specified in the Annex)



# The Basel Convention (hazardous waste)

- **Belong to Annex I categories**

- Includes listed waste streams or waste constituents (e.g., arsenic, cadmium, lead).
- **Exception:** If they lack hazardous characteristics listed in Annex III (e.g., explosive, corrosive).

- **Defined by domestic law**

- Waste classified as hazardous under the legislation of the Parties involved in export, import, or transit.

- **Interpretation by Parties**

- The Basel Convention allows flexibility for Parties to interpret and classify waste streams and constituents based on Annex III characteristics.

# Basel Convention (Annex III - Hazardous Characteristics)

- Explosive
- Flammable liquids
- Flammable solids
- Liable to spontaneous combustion
- Emit flammable gases when in contact with water
- Oxidizing
- Contain Organic Peroxides
- Poisonous (Acute)
- Corrosives
- Liberation of toxic gases on interaction with air or water
- Toxic (Delayed or chronic)
- Ecotoxic Can yield another material possessing any of the above characteristics

Other approaches

# International, regional approaches and standards and other examples

- Apart from MEAs, TRPs also pointed out to a number of other potentially useful approaches, including
  - International standards available or under discussion, such as those under the ISO or the Codex Alimentarius
  - Regional regulatory frameworks, such as the EU Ecodesign for Sustainable Products Regulation
  - Sector-specific approaches, such as in the agricultural sector
  - Classifications used in international trade (Harmonized System, which is universally applicable to all tradable goods)
  - Domestic and regional approaches shared and discussed in the context of international institutional arrangements/group such as the WTO Dialogue on Plastic Pollution
  - Voluntary approaches:
    - Global Harmonized System for Classification and Labelling of Chemicals (GHS)
    - The Global Commitment (EMF/UNEP)
    - The WHO/FAO specifications for pesticides

# Conclusions

- Criteria- and non-criteria-based approaches are integral to MEAs, focusing on chemicals of concern and waste
- Criteria-based approaches can provide a structured and scientific basis for technical assessment of the regulated substance, and can enable to expand the list of regulated substances and products over time
- Non-criteria-based approaches can allow for more flexibility in constructing the technical assessment and to adapt them to specific national and sector-specific contexts
- Dedicated product criteria and design criteria can be found from regional frameworks and voluntary initiatives

# **Synergies and lessons learnt from MEAs**

Kei Ohno

TRPs for Expert Group 2

Meeting of the ad hoc intersessional open-ended expert group

25 August 2024

## B. Synergies and lessons learnt from MEAs

### Questions:



**1. What are lessons learned and current gaps in existing MEAs relating to plastic products and chemicals that would be relevant for the instrument?**



**i. What plastic product and/or chemicals/groups of chemicals in plastic products are currently covered in existing MEAs?**



**ii. What processes under these instruments address products and/or chemicals of concern?**



**2. How can the future ILBI strengthen synergies and complementarities, as well as avoid duplication, with other MEAs on chemicals and plastic products without overlapping with the activities of other MEAs?**

# Binding multilateral instruments addressing chemicals in plastic products



- Plastic Waste Amendments (Annex II, VIII, IX) clarify plastic waste subject to the Basel Convention provisions, including types of polymers, resins, hazardous constituents, mixtures of plastics.
- Process for amending Annexes VIII and IX: A proposal by a Party, consideration by the OEWG, followed by the COP.



- PIC procedure for international trade in hazardous chemicals and pesticides. 15 chemicals or groups of chemicals listed are associated with plastics.
- Process for amending Annex III to list a new chemical: Notifications of FRAs from 2 PIC regions, review by the Chemical Review Committee pursuant to Article 5 and Annex II, consideration by the COP.



- Global control of persistent organic pollutants (POPs). 17 chemicals or groups of chemicals listed are associated with plastics.
- Process for amending Annex A, B or C to list a new chemical: A proposal by a Party, review by the POPs Review Committee pursuant to Article 8, Annex D, E, F, consideration by the COP.



- Global control of mercury. Mercury and mercury-added products and processes are regulated to minimize their use and emissions.
- Process for amending Annex A (mercury added products) and Annex B (processes): A proposal by a Party, consideration by the COP. Ad hoc experts' group may be established by the COP as necessary.



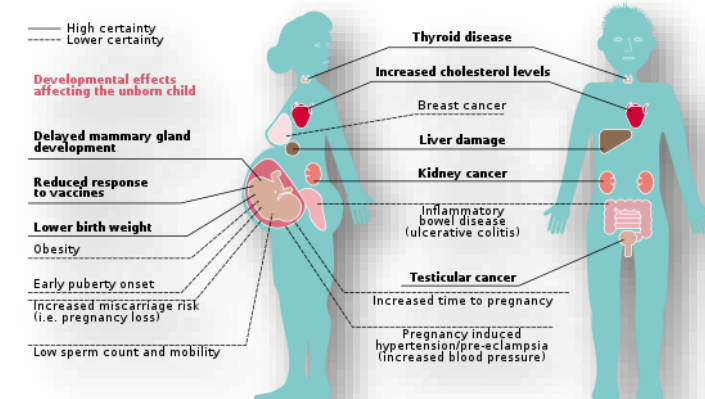
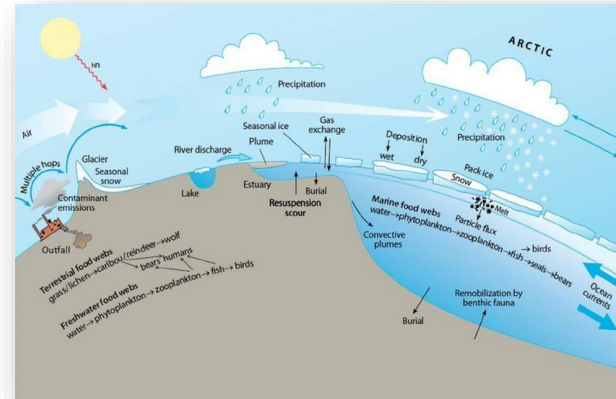
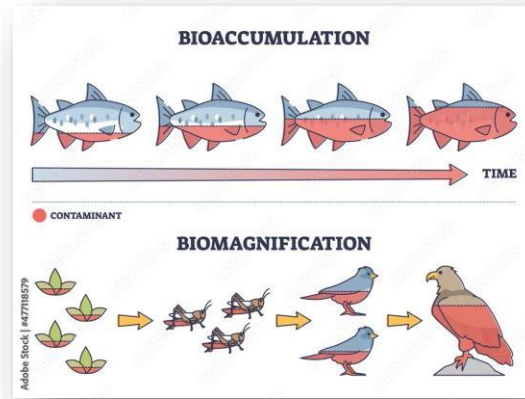
- Global control of substances listed in the annexes to the Montreal Protocol.
- Assessment and review of control measures pursuant to Article 6 by the Protocol's assessment panels.
- Process for amending Annexes A, B, C and E or an additional annex: A proposal by a Party, consideration by the MOP.



- The ILO Chemicals Convention (C170) prescribes the classification of chemicals by hazards for the protection of workers.
- Chemicals used in the manufacture of plastics are not specifically mentioned.



# Stockholm Convention on Persistent Organic Pollutants



A group of organic compounds that possess characteristics of:

- Persistence
- Bio-accumulation
- Adverse effects
- Potential for long-range environmental transport

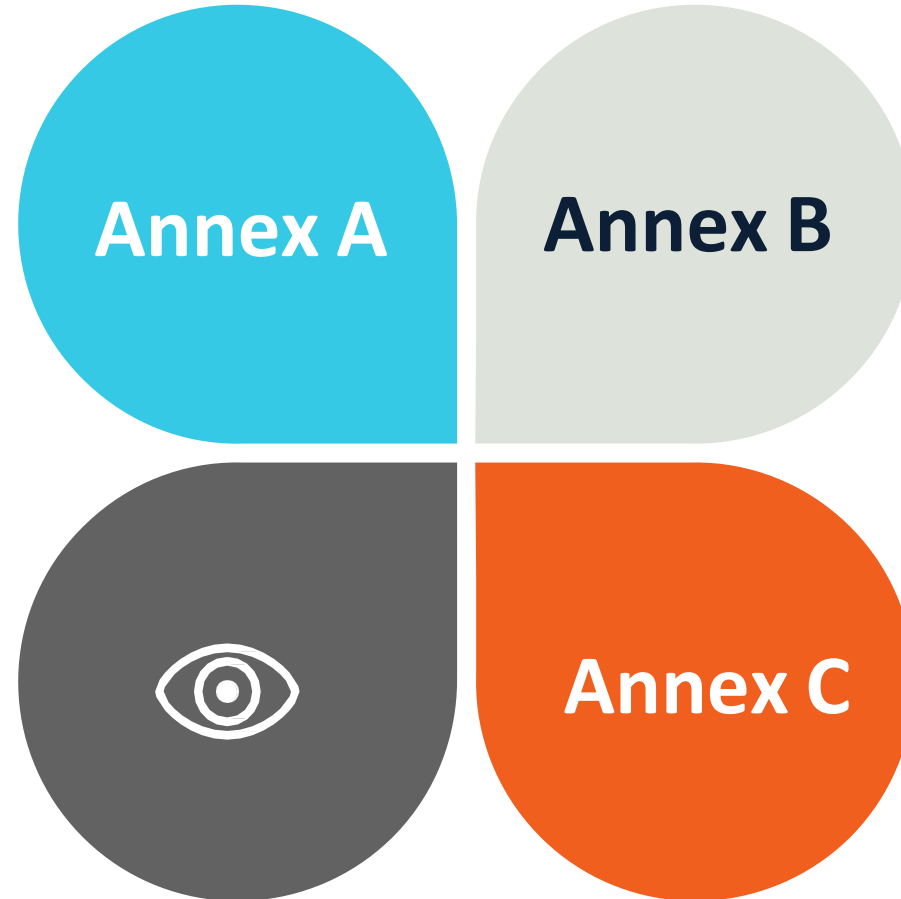
## Elimination

### 15 Pesticides:

Aldrin; Chlordane; Chlordecone;  
Dicofol; Dieldrin; Endosulfan; Endrin;  
Heptachlor; AlphaHCH; BetaHCH;  
Lindane (gamma HCH); Mirex; PCP;  
Toxaphene; Methoxychlor

### 15 Industrial POPs:

DecaBDE; Hexa- and heptaBDE;  
Tetra- and pentaBDE; HBB; HBCD;  
HCBD; PCB; PCN; PFOA, its salts and  
PFOA-related compounds; PFHxS, its  
salts and PFHxS-related compounds;  
SCCPs; HCB; pentachlorobenzene;  
Dechlorane Plus; UV-328



## Restriction

### 1 Pesticide: DDT

**1 Industrial POP:** PFOS, its salts and  
PFOSF

\*Annex B chemicals have “Acceptable  
purposes” for which Parties can  
continue production/use if registered.

## Unintentional releases

### 7 U-POPs:

HCB, HCBD, pentachlorobenzene  
PCBs, PCDDs/PCDFs,  
polychlorinated naphthalenes



# Chemicals of concern not covered by the Stockholm Convention

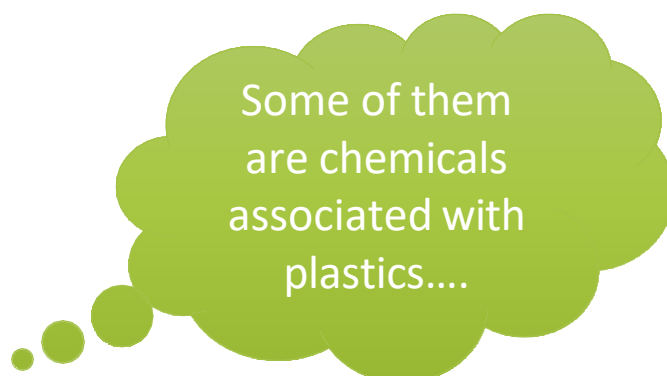
There are **many** other organic chemicals with adverse effects to human health and/or environment that are not listed under the Stockholm Convention.

These may be:

- Currently under review but have not been listed yet
- Do not meet the criteria for listing under the Stockholm Convention
- Do not have enough information to determine
- No Parties have submitted a proposal for listing

## Examples:

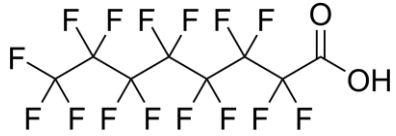
- Polycyclic aromatic hydrocarbons (PAHs)
- Polybrominated dibenzo-*p*-dioxins (PBDDs), dibenzofurans (PBDFs)
- Linear alkylbenzenes (LABs); Alkylphenols including nonylphenol (NP), octylphenol (OP)
- PFASs that are not (yet) listed under the Stockholm Convention
- Bisphenols including bisphenol A (BPA); Phthalates



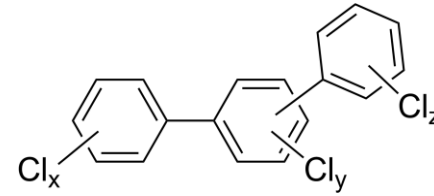
Some of them  
are chemicals  
associated with  
plastics....



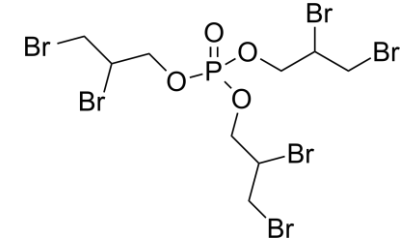
# Plastics-related chemicals under the Rotterdam Convention



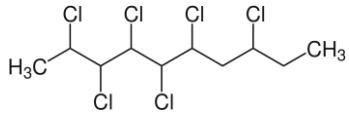
PFOA, its salts and PFOA-related compounds



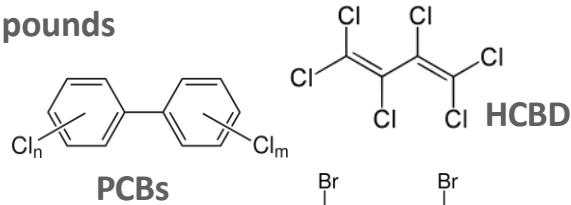
Polychlorinated terphenyls (PCTs)



Tris(2,3-dibromopropyl) phosphate

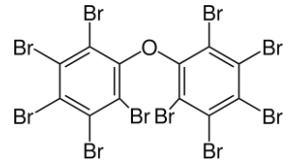


SCCPs

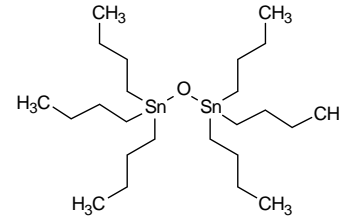


PCBs

HCBd



DecaBDE

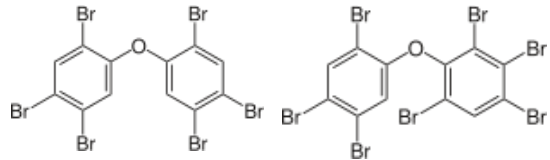
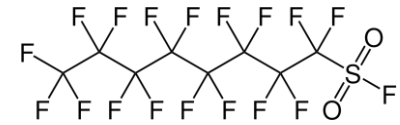


Tributyltin

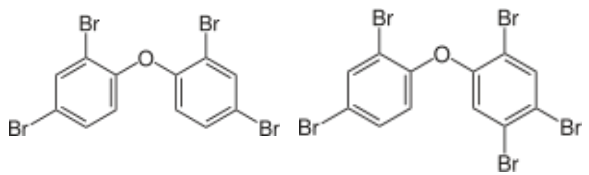
## Annex III



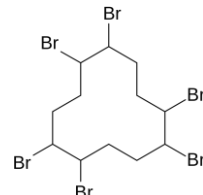
PFOS, its salts and PFOSF



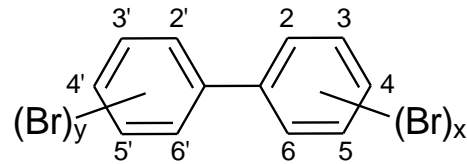
HexaBDE and HeptaBDE (C-OctaBDE)



TetraBDE and PentaBDE (C-PentaBDE)



HBCDD



Polybrominated biphenyls (PBB)

The Convention lists several chemicals used in plastics as pesticides (Ethylene dichloride, Ethylene oxide, 1,2-dibromoethane, mercury compounds) and one as a severely hazardous pesticide formulation (Thiamam).



# Minamata Convention on Mercury

## Annex A: Mercury-added products

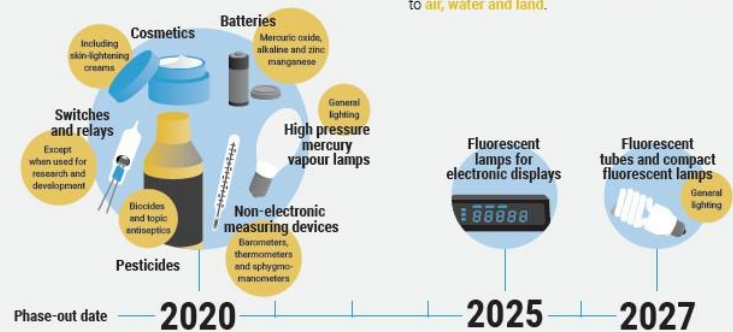
2024 Fact Sheet on

### MERCURY-ADDED PRODUCTS



- ▶ Around **30% of the global demand** for mercury comes from its use in products.
- ▶ Mercury is mined or extracted for use in consumer products, and released during the process, causing **harm to human health and the environment**. Some mercury-added products, such as cosmetics, cause direct human exposure to mercury.

- ▶ Over the years, the use of mercury in products such as **lamps, batteries and measuring devices** has decreased as countries switch to mercury-free alternatives. Mercury use in dental fillings is still widespread.
- ▶ Mercury-added products are present in all countries, so **all Parties must take action**. Unless mercury demand can be reduced rapidly by controlling mercury-added products and other uses of mercury, formal and informal mercury supplies and trade will further exacerbate mercury emissions and releases to **air, water and land**.



## Annex B: Manufacturing processes

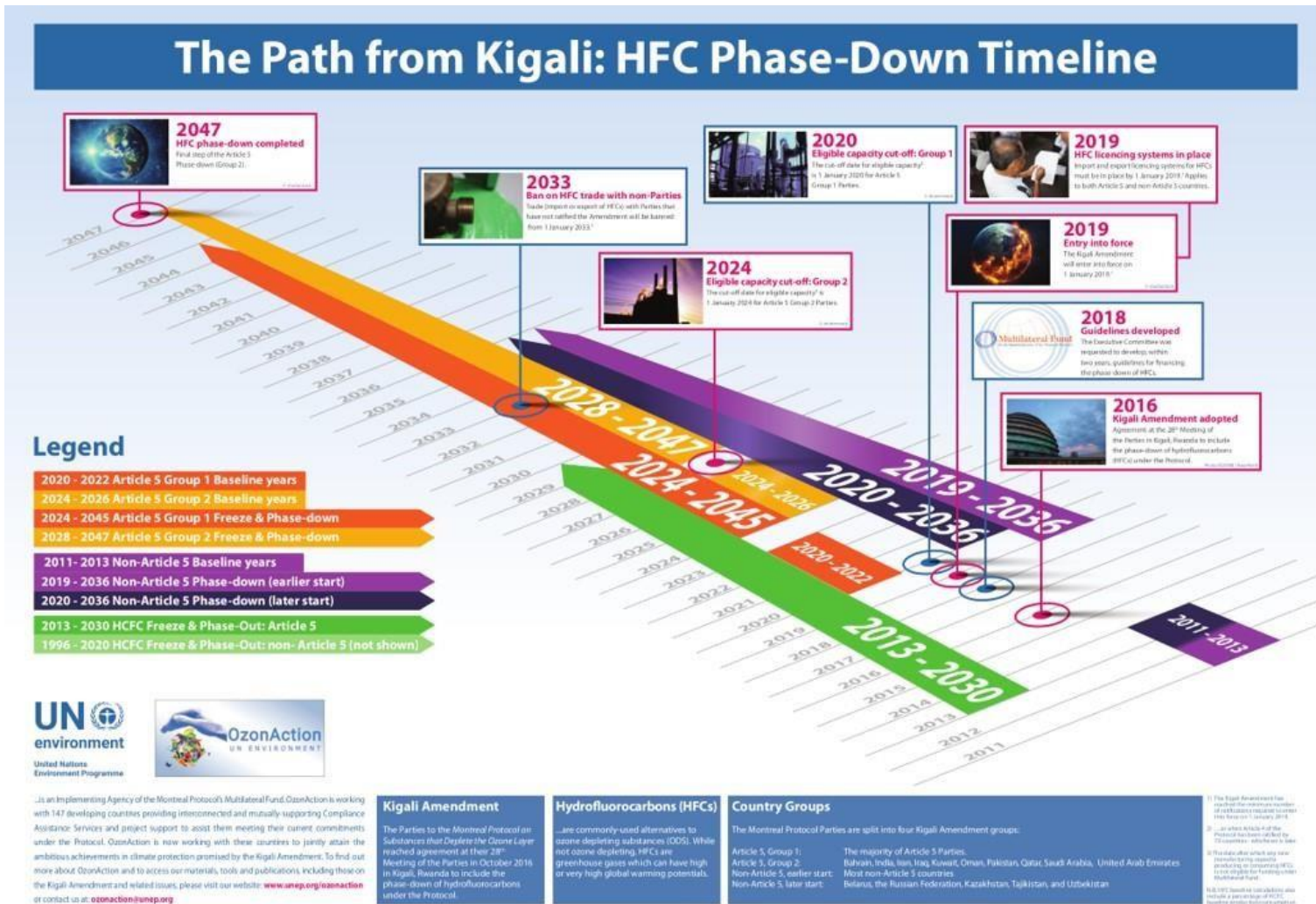
**Part I: Art.5.2**  
Polyurethane manufacturing

**Part II: Art.5.3**  
VCM production



Vienna Convention  
MONTREAL PROTOCOL

# Montreal Protocol on Substances that Deplete the Ozone Layer



- ODSs are used primarily as refrigerants but may also be used as **blowing agents in XPS and PUFs production**. They also serve in aerosol propellants, fire extinguishing, fumigation, and as **feedstocks for other chemicals**, including **fluoropolymers**.
- HFCs, which are greenhouse gases, are similarly **used in XPS and PUFs as blowing agents**, essential for expansion and insulation.





# Basel Convention – Plastic Waste Amendments

## Annex II

Plastic waste,  
including mixtures

Y48



## Annex VIII

Hazardous plastic waste

A3210



## Annex IX

Clean plastic waste for  
recycling

B3011



Prior  
Informed  
Consent  
(PIC)

BC-14/12:  
Plastic Waste  
Amendments

Effective 1 Jan 2021



## ii. What processes under these instruments address products and/or chemicals of concern?



**BASEL**

### **Annexes**

#### **Article 18**

- Proposal
- Ongoing review of Annexes I, III and IV by an expert working group

Expert working group

Experts nominated by Parties,  
up to 10 per UN region



**ROTTERDAM**

### **Annex III**

#### **Article 5**

- 2 FRAs from 2 PIC regions
- Annex II

CPRC

31 members  
Open to observers



Vienna Convention  
**MONTREAL PROTOCOL**

### **Annexes**

#### **Article 2,6,9**

- Ozone-depleting potential
- Global warming potential
- Atmospheric lifetime
- Availability of alternatives

Technology and  
Economic  
Assessment Panel



**STOCKHOLM**

### **Annex A, B, C**

#### **Article 8**

- Proposal
- Annex D
- Annex E
- Annex F

POPRC

31 members  
Open to observers



**MINAMATA  
CONVENTION  
ON MERCURY**

### **Annex A, B**

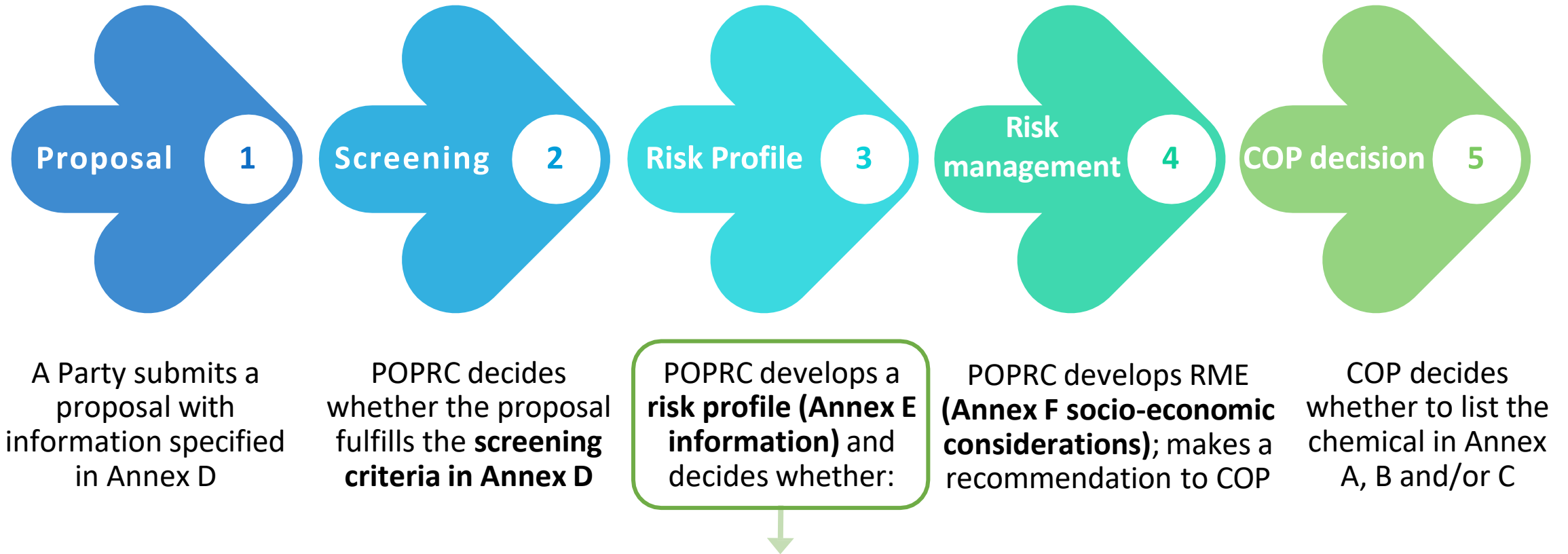
#### **Article 4, 5**

- Proposal
- Availability, technical and economic feasibility, and environmental and health risks and benefits on non-mercury alternative

Ad hoc expert group

Experts nominated by  
Parties, with open size

# What is the decision-making flow for listing a chemical in Annex A, B and/or C to the Stockholm Convention?



The chemical is likely as a result of its long-range environmental transport to lead to significant adverse human health and/or environmental effects such that global action is warranted.

## Q2. How can the future ILBI strengthen synergies and complementarities, as well as avoid duplication, with other MEAs on chemicals and plastic products without overlapping with the activities of other MEAs?



- Collaboration with the POPs Review Committee
- Global database development



- Clarifying mercury compounds



- Applying existing definitions
- Collaboration with technical bodies
- Implementation and review of guidelines



- Narrowing exemptions



- Enhancing information exchange on chemicals

# **Non-plastic material substitutes**

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TRPs for Expert Group 2

Meeting of the ad hoc intersessional open-ended expert group

25 August 2024

# Background information relevant to this presentation

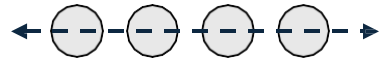
- There is not yet an internationally agreed definition of “non-plastic material substitutes”
- The type of chemicals/additives used in plastics can often be totally different, or not used at all, from the ones used in non-plastics materials substitutes, as they have different nature and composition.
- Chemicals and additives used in non-plastic substitutes is an under-researched area.
- There is not yet a global compilation of key chemicals used in non-plastic substitute materials and in their production, as they are very heterogeneous in origin and nature and subject to very diverse production methods. Case-specific comparisons are feasible.

# Background information relevant to this presentation

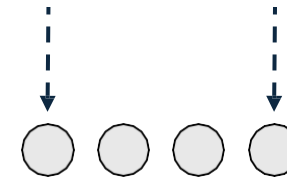
- While there is not direct compilation of evidence, it has been argued that natural non-plastic materials tend to have a lower use of chemicals in their production than plastic, but ultimately this may be resolved by direct comparison of the plastics and the non-plastic substitutes in question.
- In the case of natural non plastic materials, chemical additives may be added in the cultivation or extraction, and processing phases of both intermediates and final products.

# Approaches when addressing chemicals in plastics and non-plastic substitutes:

To avoid discrimination between types of material based on the chemicals identified, we could apply two potential approaches:



Horizontal approach

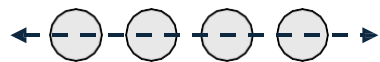


Case-by case approach

Both approaches may consider the **commercial availability** and **scalability** of non-plastic substitutes, as well as the **environmental, economic, and social benefits** and **costs** of potential non-plastic substitutes materials or their by-products vis-a-vis the plastic to be substituted.

It is also plausible that some countries make use of **hybrid approaches** to different degrees of horizontal and case-by-case regulations and assessments.

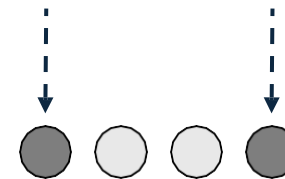




## Horizontal approach

Regulatory schemes for chemicals which apply to the use of chemicals across multiple (material) sectors and types of products.

- Decision to propose action (initiated by national regulatory authority) because of concern about a risk to human health or the environment
- Public consultation about the scope and nature of the concern
- Decision to proceed to assessment of the risks
- Public consultation on the draft assessment
- Expert committee process to (1) confirm the risk to human health or the environment (2) examine the socio-economic consequences of restricting the chemical
- Decision makers make decision on legal restrictions to be applied
- Periodic review of restriction decision

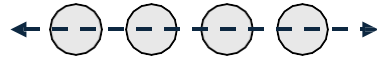


## Case-by case approach

Non-plastic materials substitutes **have a very diverse origin and nature** (i.e. mineral, plant or animal origin) and undergo different production processes and uses.

We can assess risks on individual “material” or “product” basis.

There will be a need to analyse **the effects of those** chemicals used in both plastic and non-plastic substitutes materials or products and their processing pathways within their relevant value chains.



## Horizontal approach

### **EU REACH legislation, Annex XVII**

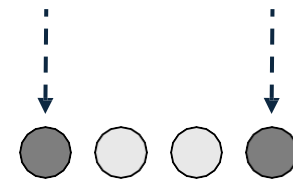
(eg diphenylether, octabromo derivative flame retardants)

### **K REACH legislation**

(eg Bisphenol (BPA))

**Comment:** One type of chemical that is commonly used in both plastics and certain non-plastics substitutes, such as paper, wood and natural fibers are flame retardants and some coatings agents.

*\*Examples given are illustrative. Additional information was compiled in the assessment of these approaches.*



## Case-by case approach

### **Lead content in glass articles**

((Annex XV Restriction Report – lead and its compounds in articles, ECHA, 2012))

### **Paper and cardboard container for food packaging**

(India's Caustic Soda Quality Control Order - G/TBT/N/IND/69 (2017))

### **Seaweed or agricultural waste for food packaging**

United States Food and Drug Administration (FDA) Regulation on Indirect Food Additives (21 CFR Part 177)

### **Wood biocides, including wood preservatives**

European Union Biocidal Products Regulation (BPR, Regulation (EU) 528/2012)

# Avoiding discrimination

- WTO jurisprudence has pointed at the fact that **“differentiation” does not always mean “discrimination”** as some differences in treatment can be justified by the nature of the product or its effects based on a **legitimate objective pursued**
- In practice, discrimination could occur in terms of the national origin, anticipated impacts, and procedures depending on the regulatory design and justification.

# Conclusions

- 1) Two different approaches are suggested to address potential discrimination: horizontal and case-by-case
- 2) Examples exist for both approaches
- 3) As a pre-condition if both plastics and non-plastic material substitutes contain the same chemicals of concern, these chemicals should in principle be subject to the same assessment.
- 4) If the non-plastic material substitutes do not contain any of the chemicals of concern, they should not be subject to the same assessment as the plastic material.
- 5) An area for further research would be the chemical content of both groups of materials and products.

# Existing definitions for “single use plastics”, “plastic products”, and “chemicals of concern”

TRPs for Expert Group 2

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Meeting of the ad hoc intersessional open-ended expert group

26 August 2024

# “Single use plastics”

## MEAs and other multilateral agreements

- *“Single Use Plastics (SUPs)” means an item or product that is made wholly or partly from plastic and that is not conceived; designed or placed on the market to accomplish, within its life span, multiple trips or rotations by being returned to a producer for refill or re-used for the same purpose for which it was conceived.*  
[2021 Amendments to the Regional Plan on Marine Litter Management in the Mediterranean in the Framework of Article 15 of the Land-Based Sources Protocol \(under Barcelona Convention\) \(17P\)](#)

## Other definitions

- *Single-use plastic products are designed and produced to be used once before being thrown away or recycled.*  
[UNEP/PP/INC.1/7: Plastic science](#)
- *“Single-use plastic product” means a product that is made wholly or partly from plastic and that is not conceived, designed or placed on the market to accomplish, within its life span, multiple trips or rotations by being returned to a producer for refill or re-used for the same purpose for which it was conceived.*  
[Directive \(EU\) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment](#)

# “Single use plastics” (cont.)

## Other definitions

- *“Single use” [plastics] means conventionally disposed of after a single use or not sufficiently durable or washable to be, or not intended to be, reusable or refillable.*  
[California’s Senate Bill 54. “Solid waste: reporting, packaging, and plastic food service ware.”](#)
- *Plastic items are considered single-use if they are designed to be discarded after being used once.*  
[Canada: Single-Use Plastics Prohibition Regulations : technical guidelines \(2023\).](#)
- *The term single-use plastics includes all products that are made wholly or partly of plastic and are typically intended to be used just once and/or for a short period of time before being disposed of.*  
[UK HM Treasury, 2018](#)

# “Single use plastics” (cont.)

## Overview of criteria used by Trade Related Plastics Measures to identify single-use plastic bags

Thickness (ranges)	Usage (e.g: purpose or capacity) includes	Polymer references	End-of-life properties include
< 15 microns	<b>Designed to carry</b> <ul style="list-style-type: none"> <li>• purchased goods from a business</li> <li>• goods, materials or products</li> <li>• products and goods that are delivered to a consumer</li> </ul>	<b>Bio-Based</b> <ul style="list-style-type: none"> <li>• a blend of materials with plant derived products</li> </ul>	<b>Biodegradable or compostable</b> <ul style="list-style-type: none"> <li>• whose composition and/or characteristics do not allow or hinder its biodegradability</li> </ul>
< 25 microns < 30 microns < 35 microns < 50 microns < 70 microns	<b>Capacity / volume / surface density of</b> <ul style="list-style-type: none"> <li>• less than 10 kilograms, &gt; 53 meters</li> <li>• less than 25 liters</li> <li>• equal to or greater than 60 g/m<sup>2</sup></li> </ul>	<b>Polymers of</b> <ul style="list-style-type: none"> <li>• ethylene</li> <li>• one or more organic polymeric substances of large molecular weight</li> <li>• contains as an essential ingredient a high polymer such as polyethylene terephthalate, high density polyethylene, ...</li> </ul>	<b>Made of degradable plastic often included in the ban</b> <ul style="list-style-type: none"> <li>• incl. oxo-degradable, biodegradable and compostable materials</li> <li>• consists of polyethylene and oxo-degradable impurities</li> </ul>
< 100 microns	<b>Designed for single-use/short useful life or to be “reusable” or used &gt; than:</b> <ul style="list-style-type: none"> <li>• 100 times</li> </ul>	<b>Oil-based</b> <ul style="list-style-type: none"> <li>• petroleum-based material or its derivatives</li> </ul>	

WTO DPP, 2024, Informal Report on the Definition of Single-Use Plastic Products in Trade-Related Plastics Measures (TrPMS) Found in the DPP Survey ([INF/TE/IDP/W/14](#))



# “Plastic product(s)”

## Existing definitions

- *“Plastics product” is any material or combination of materials, semi-finished or finished product that is within the scope of ISO/TC 1, Plastics*

*Plastic is material which contains as an essential ingredient a high polymer and which, at some stage in its processing into finished products, can be shaped by flow.*

Note 1 to entry: Elastomeric materials, which are also shaped by flow, are not considered to be plastics.

Note 2 to entry: In some countries, particularly the United Kingdom, the term “plastics” is used as the singular form as well as the plural form.

[ISO 472:2013\(en\). Plastics](#)

- *Plastic product is manufactured combination of materials that contains plastic polymers, including component items containing plastic polymers and final manufactured products containing plastic polymers.*

[Glossary of terms, GRID-Arendal \(2024\). Climate impacts of plastics: Global actions to stem climate change and end plastic pollution. Norway](#)

# “Chemicals of concern”

- *Substances (chemicals) of concern include those that are persistent, bioaccumulative and toxic substances (PBTs); very persistent and very bioaccumulative substances; chemicals that are carcinogens or mutagens or that adversely affect, among other things, the reproductive, endocrine, immune or nervous systems; persistent organic pollutants (POPs); mercury and other chemicals of global concern; chemicals produced or used in high volumes; those subject to wide dispersive uses; and other chemicals of concern at the national level.*

[Strategic Approach to International Chemicals Management](#)

- *The chemicals of potential concern fulfil one or several of the following hazard criteria assessed: vPvB (very persistent and very bioaccumulative), PBT (persistence, bioaccumulation, and toxicity), CMR (carcinogenicity, mutagenicity, or reproductive toxicity), EDC (endocrine-disrupting chemicals), AqTox (chronic aquatic toxicity), and STOT\_RE (specific target organ toxicity upon repeated exposure).*

[BRS \(2023\). Global governance of plastics and associated chemicals](#)

- **Substances of concern and substances of very high concern** are defined using the criteria used in Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) (Art 57) based on chemicals’ intrinsic properties including carcinogenicity, mutagenicity, reproductive toxicity, persistence, bioaccumulation, endocrine disrupting properties, and their combinations.

[Regulation \(EC\) No 1907/2006](#)

E. Please provide information on what plastic product or materials are commonly identified as problematic and common criteria, focusing on existing MEAs, inter-/multinational approaches, including private initiatives, and national legislation?

Presentation on behalf of the Technical Resources Persons for Expert Group 2

Daniel Ramos C Ambrogio Miserocchi

Meeting of the ad hoc intersessional open-ended expert group

26 August 2024

# Further information/examples on commonly identified plastic products or materials in existing legislations

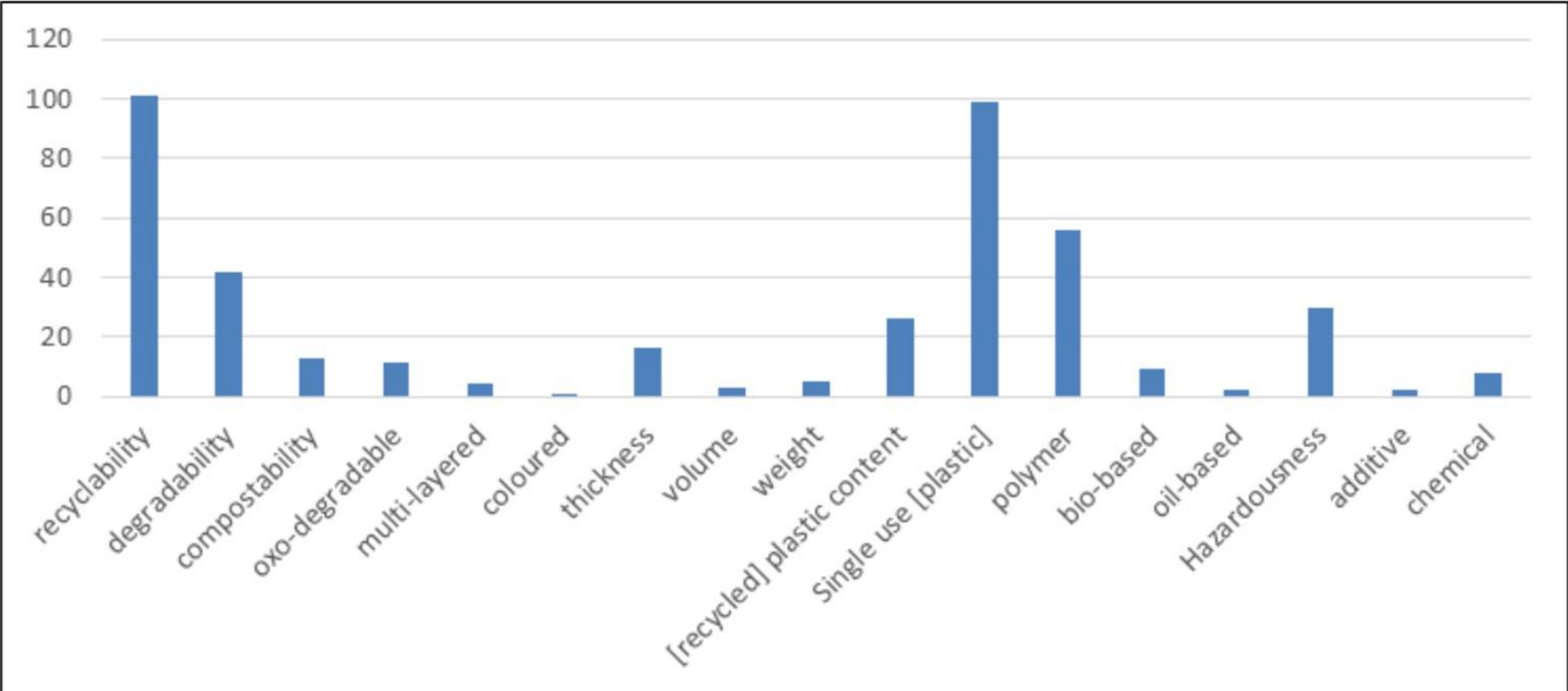
## Top 10 plastic **product** bans

	Products	No. of countries
1.	Plastic bags	102
2.	Plates and bowls	53
3.	Cutlery/utensils (incl. forks, knives, spoons, chopsticks, stir-sticks, cocktail sticks, candy sticks, ice-cream sticks, toothpicks)	51
4.	Cups/glasses (and their lids)	50
5.	Straws	47
6.	Food containers (and their lids) incl. clamshells	47
7,	Microbeads	44
8.	Bottles (incl. beverage bottles & containers)	43
9.	Cotton swabs/ear buds	38
10.	Sticks to support balloons	36

Nordic Council of Ministers (2024). Global criteria to address problematic, unnecessary and avoidable plastic products.

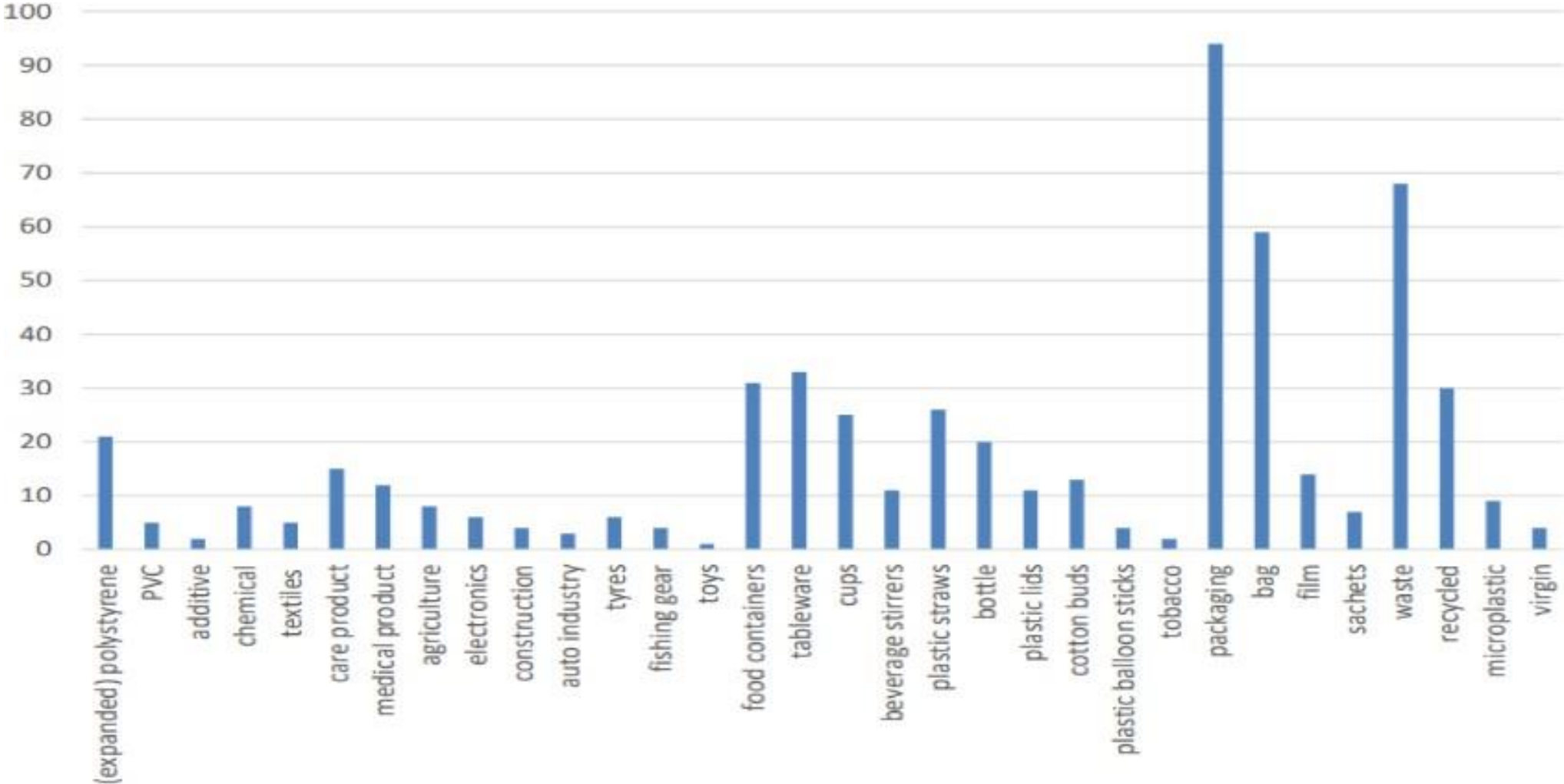
# Factual Report of the Trade-Related Plastics Measures (TrPMs) Survey [\(INF/TE/IDP/W/11\)](#)

a) Number of Trade-related Plastics Measures referring to one or more criteria identified in the DPP TrPMs Survey



# Factual Report of the Trade-Related Plastics Measures (TrPMs) Survey [\(INF/TE/IDP/W/11\)](#)

## b) Types of products most often targeted by TrPMs in the Survey



# Global Commitment and Plastic Pacts - criteria for the identification of problematic or unnecessary plastic packaging or plastic packaging components.

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

Items proposed for phase out or restrictions	Rationale quoted by selected stakeholders	Plastics Pacts identifying this item as problematic s avoidable:	CGF GDR
<b>ePS</b> (Expanded Polystyrene) packaging	Too difficult to make recycling economically viable. The material is rarely sorted from household waste and recycled. Most of the material is incinerated and landfilled.	7 Plastics Pacts: US, Canada, Chile, South Africa, Kenya, France, Poland, Portugal, UK	x
<b>PVC</b> (Polyvinyl chloride) packaging	Not recyclable and acts as a contaminant if it enters the recycling system. Its presence negatively affects the quality of other recyclates.	9 Pacts: US, Canada, Chile, South Africa, Kenya, France, Poland, Portugal, UK	x
<b>Carbon black pigment</b>	Undetectable in the sorting process when using Near Infra-Red (NIR) technology, which prevents it from being recycled. Most of the material is incinerated and landfilled.	5 Pacts: US, Canada, France, Poland, Portugal	x
<b>PVDC</b> (Polyvinylidene chloride, or polyvinylidene dichloride)	The presence of these materials in packaging interferes with the recycling of other plastics, negatively affecting the quality of other recyclates.	4 Pacts: US, Canada, Poland, Portugal (under revision)	x
<b>PS</b> (Polystyrene) Packaging	Too difficult to make recycling economically viable. The material is rarely sorted from household waste and recycled. Most of the material is incinerated and landfilled.	8 Pacts: US, Canada, Chile (under revision), South Africa (takeaway packaging only), Kenya, France (under revision), Poland (under revision), UK	x
<b>Multilayer multi-materials</b>	These are packages containing several layers of plastics, often of different and incompatible types. It is highly difficult to recycle.	5 Pacts: Chile (under revision), France (under revision), Portugal (under revision), Poland, UK (under revision)	
<b>PETg</b> (Polyethylene terephthalate glycol)	Acts as a contaminant if present in the PET recycling stream, hindering the recyclability and value of PET materials.	5 Pacts: US, Canada, Kenya, France (under revision), Poland	x
<b>Oxo-degradable packaging</b>	Fragments into microplastics, contributing to plastic pollution. Not suited for long-term reuse, recycling at scale, or composting.	7 Pacts: US, Canada, South Africa, Kenya, Poland, Portugal, UK	x



# Non plastic substitutes (alternatives to plastics), existing comparative LCA, and their potential contribution to avoid plastic pollution

TRPs for Expert Group 2

David Vivas Eugui

Meeting of the ad hoc intersessional open-ended expert group

26 August 2024

# Non-plastic material substitutes

## UN Trade and Development definitions criteria (2023)

PLASTIC SUBSTITUTES
Natural materials excluding fossil-based or synthetic polymers
Mineral, plant, marine or animal origin
Similar properties of fossil fuel-based plastics
Should be biodegradable/compostable or erodable, and should be suitable for reuse, recycling, or sound waste disposal
Should have lower environmental impact along their life cycle (e.g., natural fibres, agricultural wastes, and other forms of biomass)
Can include by-products
Should not be hazardous for human, animal or plant life

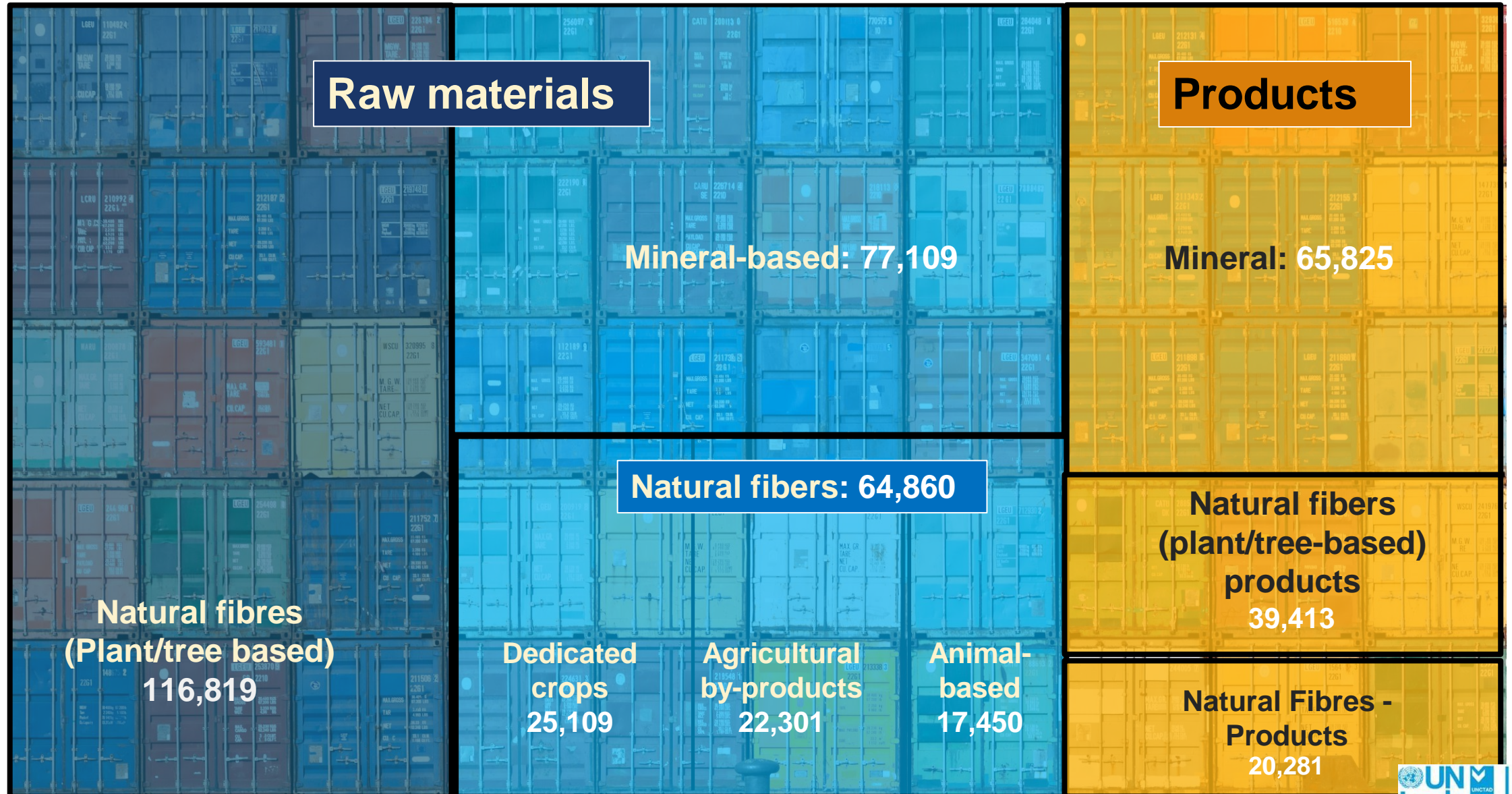
## Terms used in INC and WTO DPP discussions (2023-2024)

Credible, affordable, and safe non-plastics substitutes or alternatives to plastics

Environmentally sound and sustainable non-plastics substitutes

# Trade value of non-plastics substitutes

Export in 2020 represented \$388 billion, approximately 2/3 represents exports of raw materials (\$258 billion)

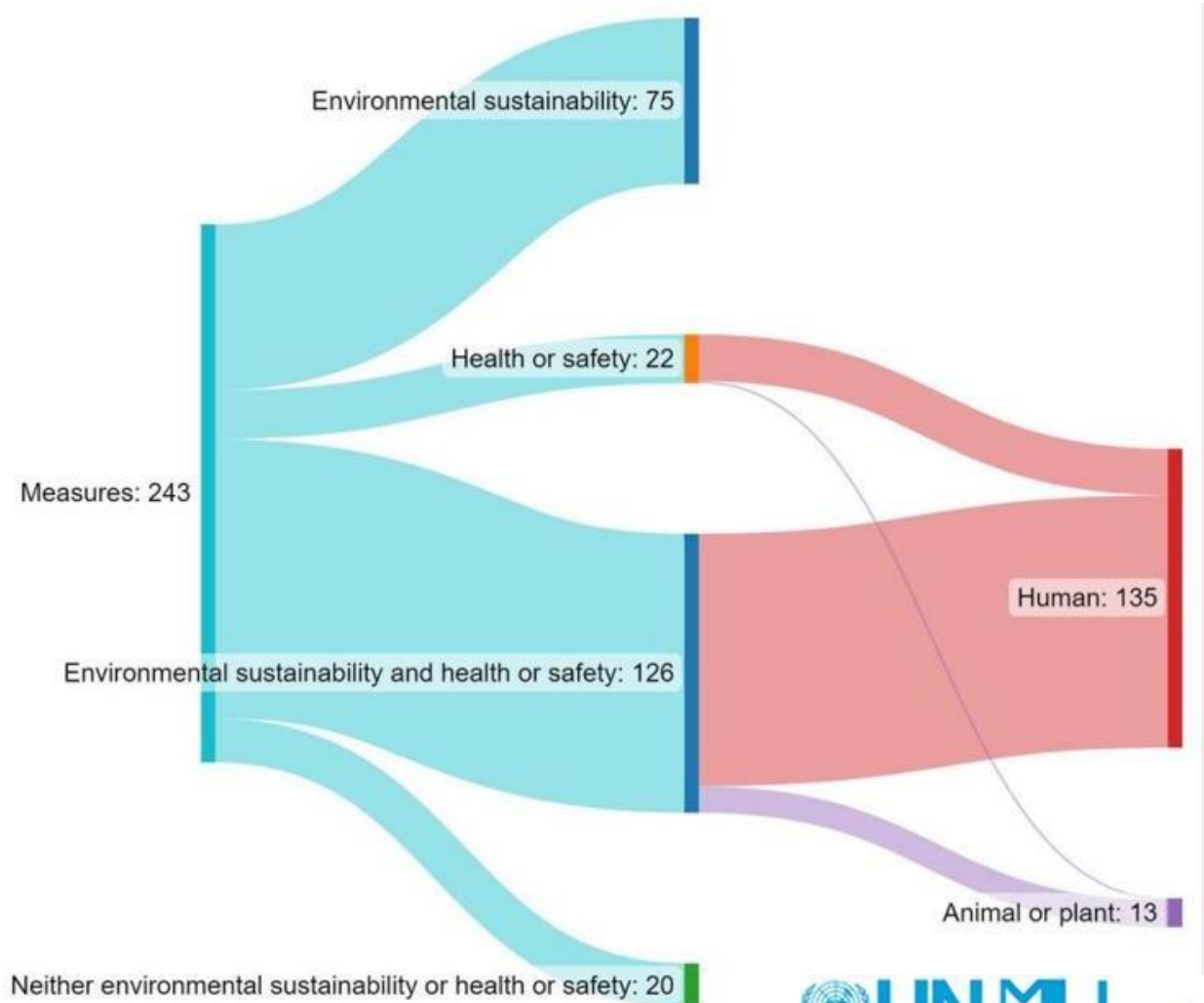


## BEYOND PLASTICS

A review of trade-related policy measures on non-plastics substitutes



## Objectives of Trade-related policy measures on non-plastic substitutes (notified to WTO 2006-2021)



# Some baseline definitions

**Life cycle** means the consecutive and interlinked stages of a **product system**, from raw material acquisition or generation from natural resources to final disposal (ISO, 14040, 2006).  
UNEP/PP/INC.1/6

**Life cycle assessment** is a compilation and evaluation of the inputs, outputs and potential **environmental impacts** of a **product system** through its life cycle (ISO, 14040, 2006).  
UNEP/PP/INC.1/6

**Product system** - collection of unit processes with Elementary and product flows, performing one or more defined functions, and which models the life cycle of a product - ISO 14040, 2006

**ENVIRONMENTAL IMPACTS, whether adverse or beneficial, ISO 14001:2015, 3.2.4]**



Life Cycle Initiative

# Single-Use Plastic Products (SUPP) and their alternatives: Recommendations from Life Cycle Assessments



hosted by





# SETTING TARGETS: The Plastic Substitution Tradeoff Estimator

The Plastic Substitution Tradeoff Estimator compares the costs and benefits of 10 plastics products with up to 4 alternatives that are currently available in the market. It supports informed decision making for **target setting**

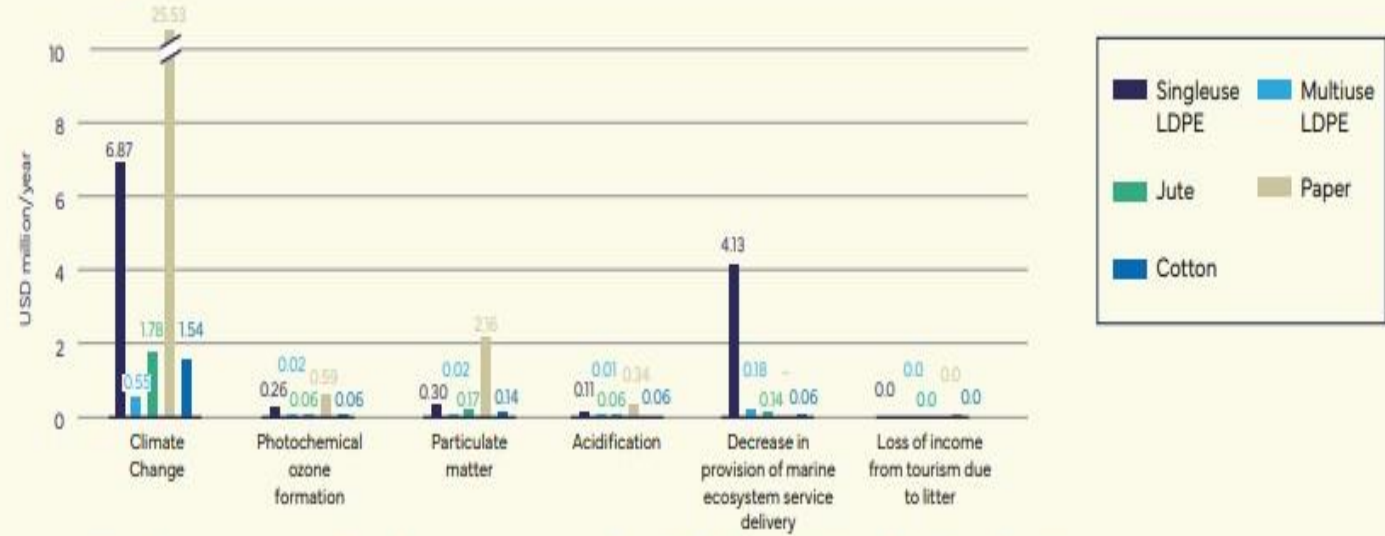


- ? What are the external costs and effects of banning single use plastic products?
- ? Under which circumstances do alternatives perform better than the currently used plastic product?
- ? What are the tradeoffs of substituting products?

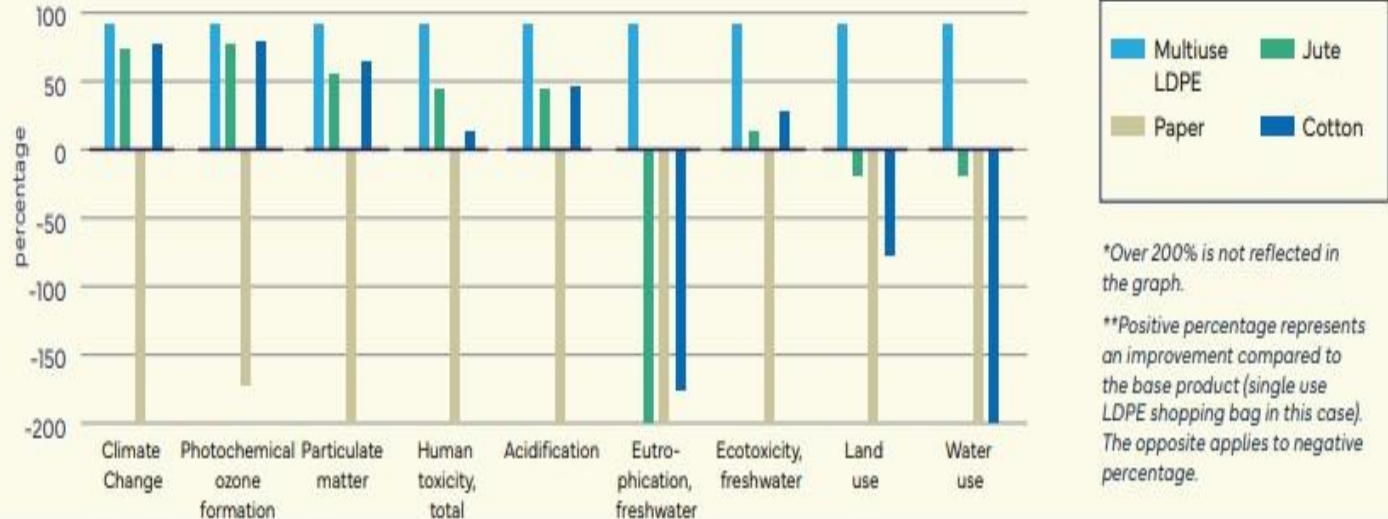
## 1. Side by side comparison

By comparing how one plastic product performs against each of its alternatives (*Example: shopping bags*)

### Monetary Valuation



### Quantitative Assessment (% Change compared to single-use LDPE shopping bag)



\*Over 200% is not reflected in the graph.

\*\*Positive percentage represents an improvement compared to the base product (single use LDPE shopping bag in this case). The opposite applies to negative percentage.

# UNCTAD-FCDO

## Comparison dashboard (only for beneficiary countries in Africa and Asian)

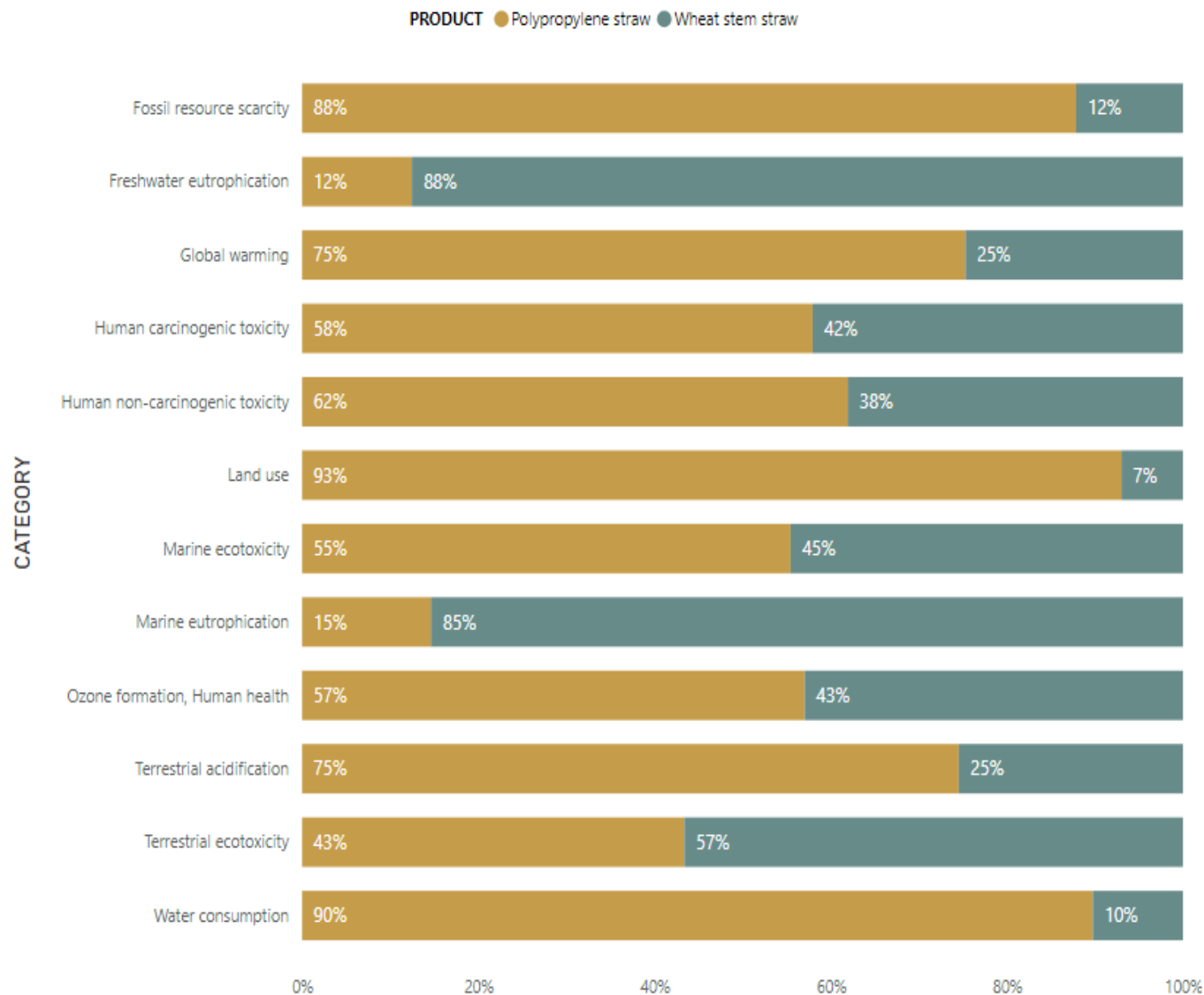
We need to be aware of tradeoffs in the LCA approach.

There are pros and cons

- COUNTRY & SCENARIO**  
Please select only one scenario at a time for correct information
- Bangladesh
    - a) Reuse of substitute product (3-years)
  - D.R. of the Congo
    - a) Reuse of substitute product (1-year)
  - Ethiopia
    - a) Single use
  - Ghana
    - a) Reuse of substitute product (1-year)
  - Kenya
    - a) Single use
    - b) Reuse of substitute product (2-times)
  - Nepal
    - a) Single use
    - b) Reuse of substitute product (4-times)
  - Nigeria
    - a) Single use
    - b) Reuse of substitute product (2-times)
  - Pakistan
    - a) Reuse of substitute product (3-years)
    - b) Reuse of substitute product (4-years)
  - Rwanda
    - a) Reuse of substitute product (1-year)
  - Senegal
    - a) Single use
  - U.R. of Tanzania
    - a) Reuse of substitute product (3-years)
  - Uganda
    - a) Single use
  - Zambia
    - a) Single use



## Process-based Life Cycle Assessment





# Beyond LCA

- 1. Limited Understanding:** Incomplete data and early-stage research on polymers' impacts.
- 2. Focus mainly on environmental dimension**
- 3. Uncertainties:** Variability in measurement and modeling techniques.
- 4. Trade-offs:** Multiple impact categories often result in trade-offs, complicating decision-making.

# Conclusions

- There is not an internationally agreed **definition or criteria** for non-plastics substitutes. UNCTAD definition-criteria for non-plastic substitutes **could be a good starting point** for discussion
- Other definitions tend to **add adjectives** to the terms to “non-plastic substitutes or alternatives to plastic” but tend not to provide content
- The trade value of non-plastics substitutes is **\$388 billion in 2020**. **Most of the trade regulations** applicable to non-plastic substitutes **focus on environmental sustainability, health concerns and safety**
- There are definitions of **life cycle and life cycle assessment in private voluntary standards** (i.e. ISO), and they are widely applied and used, both in the private sector and in legislation
- **We need to be aware of scope, methodological limitations and tradeoffs in the LCA approach.**
- **There are at least 3 comparative life cycle tools** with relatively similar comparative criteria but different scopes by **UNEP, World Bank and UNCTAD**. Members can make use of the one they consider more suitable
- UNEP and UNCTAD have produced a significant number of **comparative studies** already available for decision makers

# Useful links

## On definitions C criteria

- [Plastic Pollution: The pressing case for natural and environmentally friendly substitutes to plastics \(unctad.org\)](#)
- [Beyond Plastics: A review of trade-related policy measures on non-plastic substitutes \(unctad.org\)](#)
- [Substitutes for single-use plastics in sub-Saharan Africa and south Asia \(unctad.org\)](#)
- [NATIONS UNIES \(unep.org\)](#)
- [ISO 14040:2006 - Environmental management – Life cycle assessment – Principles and framework](#)
- [The Global Commitment 2022 \(ellenmacarthurfoundation.org\)](#)

## On LCA:

- [Home - Life Cycle Initiative](#)
- [F-ProBlue-TaskTeaser-Task1-web.pdf \(worldbank.org\)](#)
- [Microsoft Power BI \(UNCTAD SMEP Dashboard - only for certain African and Asian countries\).](#)
- <https://openknowledge.fao.org/items/296e5bb9-3bdb-4c6f-bf28-5fe49f34a440>

## **Examples of concentration thresholds**

Presentation on behalf of the Technical Resources Persons for Expert Group 2

Kei Ohno

Meeting of the ad hoc intersessional open-ended expert group

26 August 2024

# Examples of concentration thresholds

## Examples under the Stockholm Convention

- **Annex A, note (vii):** Note (i) does not apply to quantities of a chemical that has a plus sign (“+”) following its name in the “Chemical” column in Part I of this Annex that occurs in mixtures at **concentrations greater than or equal to 1 per cent by weight** (\*currently applied to SCCPs only).
- **One of the specific exemptions for decaBDE:** Additives in plastic housings and parts used for heating home appliances, irons, fans, immersion heaters that contain or are in direct contact with electrical parts or are required to comply with fire retardancy standards, at concentrations **lower than 10 per cent by weight of the part.**

## Examples of EU chemicals regulations with thresholds

- **The EU Food Contacts Plastic Regulation** 10/2021 establishes an overall migration limit of **10 mg/dm<sup>2</sup>** for all constituents of plastic materials and articles in contact with food (EU, 2011).
- **The Toy Safety Directive** (Directive 2009/48/EC) sets maximum allowable concentrations for 19 metals (e.g., **lead: 2 mg/kg** in dry materials), restricts allergenic fragrances, and bans certain phthalates and nitrosamines in toys for children under three year.

## Examples of US FDA concentration-based limits for heavy metals in cosmetics

- **US FDA** concentration-based limits for mercury and other metals in cosmetics
  - **Mercury** cosmetics as preservatives in eye area products: **no more than 65 ppm**
  - **Lead** in cosmetics: **no more than 10 ppm**