



UNOFFICIAL ROOM DOCUMENT¹

**DIALOGUE ON PLASTIC POLLUTION AND ENVIRONMENTALLY
SUSTAINABLE PLASTICS TRADE (DPP)**

UN CONFERENCE ON TRADE AND DEVELOPMENT (UNCTAD) PRESENTATION ON TRADE IN
PLASTICS, PLASTIC ALTERNATIVES AND NON-PLASTIC SUBSTITUTES: NEW INSIGHTS

Pre-Plenary Meeting – 12 April 2024

DOCUMENT DE SÉANCE NON OFFICIEL¹

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* In Original language only/En langue originale seulement/En el idioma original solamente.

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UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT
UNCTAD

Trade in Plastics, Plastic Alternatives and non-Plastic Substitutes: New insights

DPP Pre-plenary
12.04.2024

Henrique Pacini
SMEP Programme lead
Trade, Environment, Climate Change and Sustainable
Development Branch



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Trade in Plastics: Quick facts

369 million tons of plastics traded in 2021 alone.
Which is **\$1.2 trillion in value**, a 30% increase from 2020.

- **0.2%** of which is trade plastic scrap

Plastics travel through trade, but their waste stays! => recycling capacity?

- **Insufficient** in most countries

Need to identify what **alternatives or substitute materials or products** could **effectively and safely substitute** plastics & enable the transition.



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The distinction between plastic substitutes and plastic alternatives

Plastics substitutes are natural materials that have similar properties to plastics, while plastic alternatives include bioplastics or biodegradable plastics.

Plastic substitutes

- Mineral, plant, marine or animal
- Recyclable, reusable, biodegradable, compostable, or erodable
- Should have lower environmental impact along their life cycle
- Should not be hazardous for human, animal or plant life

Non-plastics

VS

Plastic alternatives

- Bioplastics or Biodegradable plastics
- Recyclable, biodegradable, or compostable (end of life)
- Should have lower GHG lifecycle emissions when compared to plastics
- Should not be hazardous for human, animal or plant life

Better plastics (?)




Source: UNCTAD Vivas Eugui & Pacini (2022), UNCTAD, based on presentation on plastic substitutes HS codes, Life-cycle analysis and tariffs considerations. WTO Dialogue on Plastics.

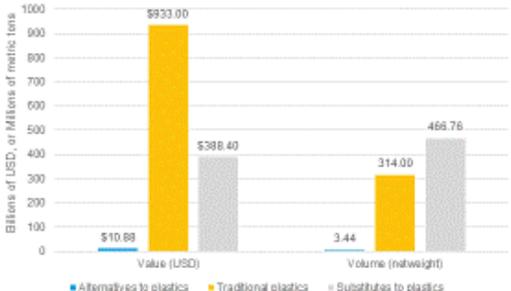
Blurry borders: (e.g. PHA, PHB)
Focus should be on life-cycle / end-of-life performance




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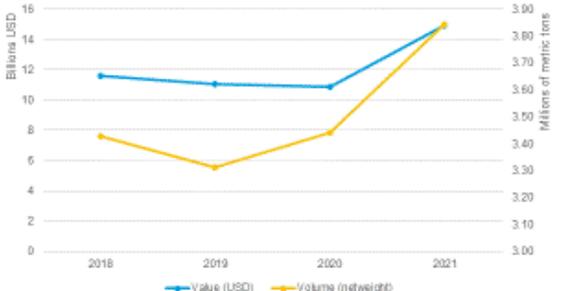
Trade in Plastics alternatives

Trade value of plastic alternatives, conventional plastics and material substitutes (2020)



Category	Value (USD)	Volume (netweight)
Alternatives to plastics	\$10.88	3.44
Traditional plastics	\$933.00	314.00
Substitutes to plastics	\$388.40	466.76

Global exports in alternatives to plastics (USD value and in metric tons) (2020-2021)



Year	Value (USD)	Volume (netweight)
2018	~11.5	~3.4
2019	~10.5	~3.3
2020	~10.5	~3.4
2021	~15.5	~3.8

Source: UNCTAD Stats 2023

HS code	Code description
390799	Polyesters; n.e.c. in heading no. 3907, saturated, in primary forms
390770	Poly(lactic acid); in primary forms
391390	Polymers, natural and modified natural; in primary forms (excluding alginic acid, its salts and esters)
391310	Polymers, natural; alginic acid, its salts and esters, in primary forms

Country	SMEP Project	Final Product (upcycled from plastic waste)	Life gained per tonne of waste plastic recycled Estimated time*
Ghana	Ghana Clean-up Project	Plastic board	27 days
Kenya	Flipflop Project	Plastic boat	24 years
Nigeria	GIVO Project	Recycled plastic flakes	4 years
Zimbabwe	Chinhoyi University Project	Plastic tiles replacing cement tiles	50 days
		Plastic tiles replacing clay tiles	189 Days

Source: UNCTAD (upcoming), considering SMEP Programme field projects analysis using LCA categories with impact on human health (Global Warming, Stratospheric Ozone Depletion, Ionising radiation, Ozone formation, Fine particulate matter, human carcinogenic and non-carcinogenic toxicities and water consumption).

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IMPACTS OF PLASTIC POLLUTION ON HUMAN HEALTH

Insights from the SMEP Programme



United Nations

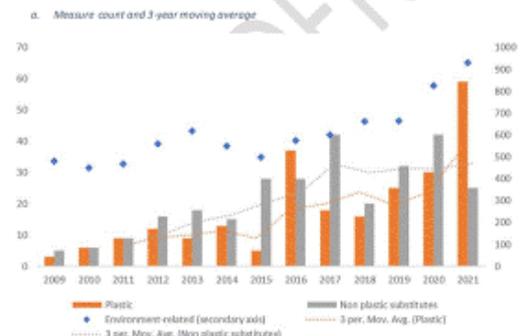
Trade-related policy measures on non-plastic substitutes

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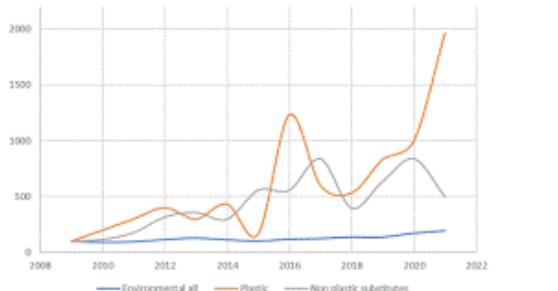
- 243 measures mapped
- *Considering wood, pulp and paper, aluminum, glass, and natural fibers such as cotton and bamboo

Figure 3. Trade-related policy measures on non-plastic substitutes, plastic and environment-related (2009-21)

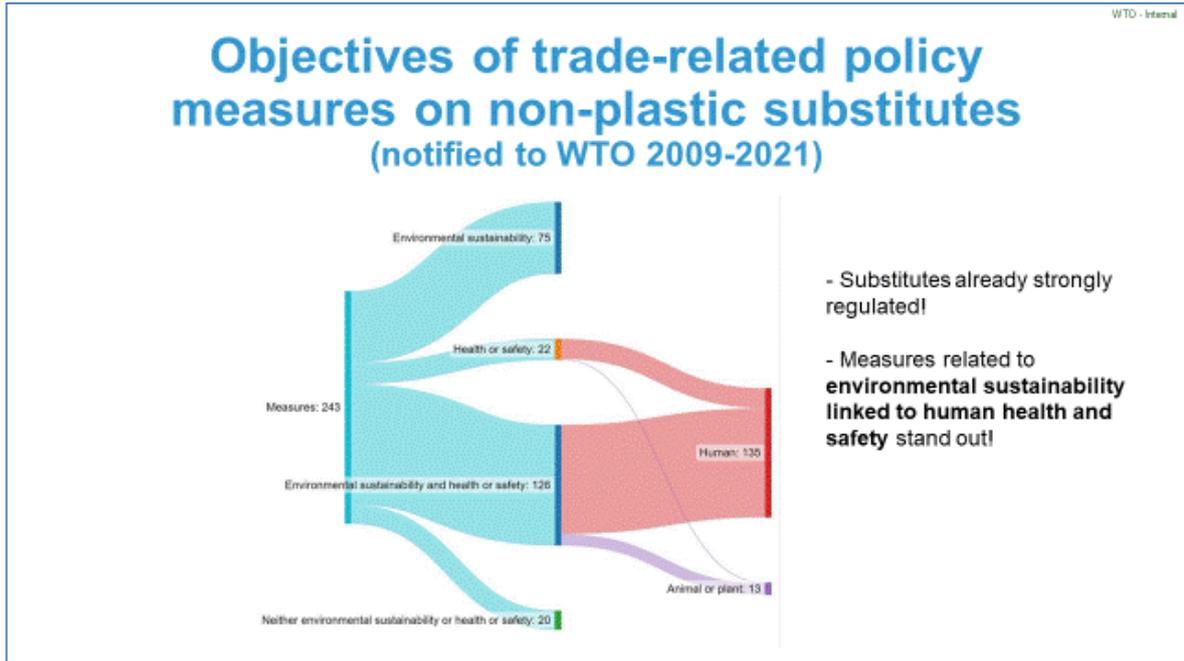
a. Measure count and 3-year moving average



b. Indexed count (base year: 2009=100)



Source: UNCTAD analysis on notifications related to material substitutes to the WTO Environmental Database (upcoming)



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Harmonized types of measures on non-plastic substitutes, by development status of notifying member (2009-21), total and percentages

Type of measures	Developed	Developing	LDCs	Total	Developed	Developing	LDCs	Total
Environmental requirements / command-and-control								
Technical regulation or specifications	32	78	30	140	43%	60%	77%	58%
Conformity assessment procedures		16	9	25	0%	12%	23%	10%
Import licences	7	11		18	9%	8%	0%	7%
Ban/Prohibition	5	8		13	7%	6%	0%	5%
Export licences	5	3		8	7%	2%	0%	3%
Risk assessment	1	2		3	1%	2%	0%	1%
Regulation affecting movement or transit	2	1		3	3%	1%	0%	1%
Other environmental requirements		1		1	0%	1%	0%	0%
Price and market based measures								
Countervailing measure / investigation	5			5	7%	0%	0%	2%
Safeguard measure / investigation		3		3	0%	2%	0%	1%
Import quotas	1	1		2	1%	1%	0%	1%
Export quotas		1		1	0%	1%	0%	0%
Support measures								
Tax concessions	7	3		10	9%	2%	0%	4%
Grants and direct payments	8	1		9	11%	1%	0%	4%
Non-monetary support		1		1	0%	1%	0%	0%
Loans and financing	1			1	1%	0%	0%	0%
Grand Total	74	130	39	243	100%	100%	100%	100%

Control measures: What is the market perception?

		IMPACTS ON PROJECTS (POTENTIAL FUTURE)								
		Measure	The Ghana Clean-up	UoC	FRESHFAC T	CATCHGRE EN	agrimulch lin	UsQ/GVO	Ffplept	OUT
Trade / border measures	Import ban / prohibition									
	Tariffs									
	Import quotas									
	Import licenses									
	Export bans									
	Export quotas									
	Export licenses									
	Export taxes									
	Monetary and economic instruments (tax, fee)									
	Public procurement									
Internal market measures	Subsidies to services									
	Reduction of subsidies to goods									
	Operation licenses (enhancement in future)									
	Labelling (TBT)									
	Investment regulation									
	Services liberalization and regulation									
	Extended producer responsibility									
	Design and quality standards									
	Internal production and commercialization bans of plastic									
	Certification and Conformity assessment									
Recycling targets										
Measuring, monitoring and mapping of marine litter										

UNCTAD Future contributions

- Analysis on trade in services for the prevention, management and disposal of plastics
- Mapping marine based plastic substitutes
- Assisting countries in regulation for biodegradables/compostables (with ISO)
- Technical assistance to support countries in developing frontier substitutes and alternatives with low land use / resource impacts: value-addition in agri-residues, seaweed by products (paper and sachets), biodegradable fishing gear



Textile fibres from pineapple and banana leaves

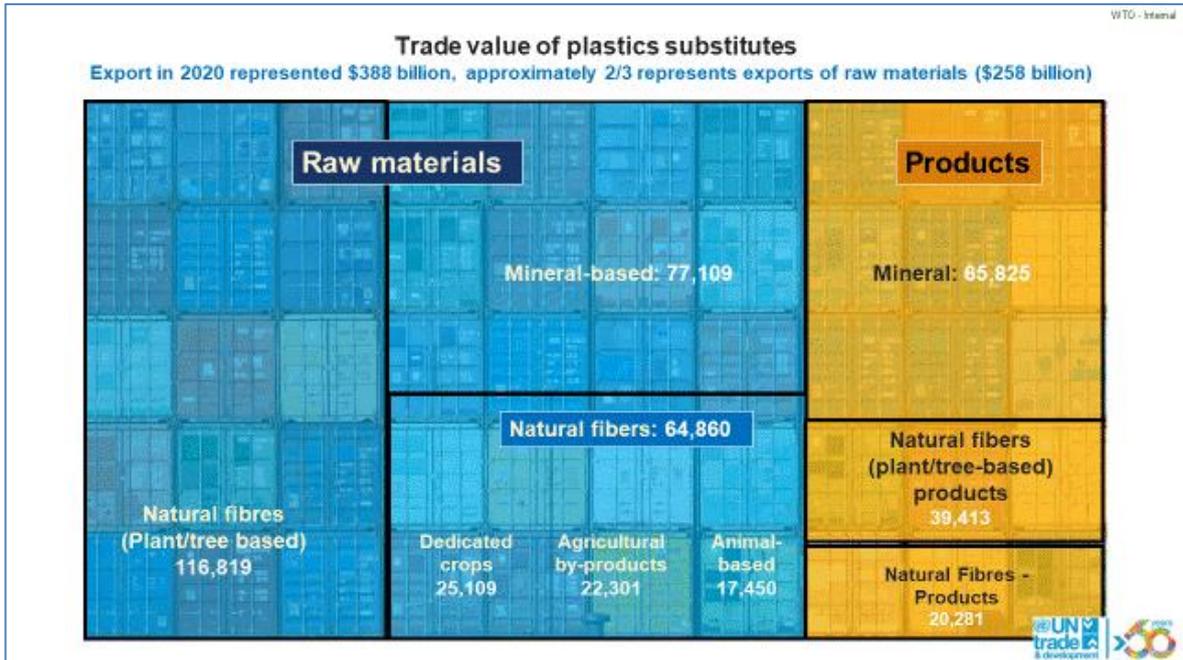


Seaweed production with innovative biodegradable ropes

Thank you
Merci
 شكراً لكم
Henrique.Pacini@un.org





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Draft text of INC Process on Non-plastic substitutes (Art.6) & DPP WTO Ministerial Declaration at MC13

6. Non-plastic substitutes

Option 0
No provision on this matter.

Option 1

1. [Subject to its national plan and based upon national circumstances and capabilities, each][Each] Party shall take measures to foster innovation], including through the cooperation mechanism referred to in [Part III. ...]] and incentivize and promote [the research,] the development and use at scale of safe, environmentally sound, and sustainable non-plastic substitutes, including products, technologies and services, taking into account their potential for [waste reduction and reuse,

→ **INC 4 Draft negotiating document**
"safe, environmentally sound and sustainable non-plastic substitutes"

- Promote cooperation on trade that contributes to ending plastic pollution, including trade in environmentally sound, safe, and effective non-plastic substitutes taking into account scientific evidence and knowledge; and environmentally sound, safe and effective plastic alternatives; as well as systems to reuse, repair and refill; and services and technologies including for improving transparency, waste management and clean-up activities, in ways that consider the waste hierarchy and are appropriate to local development circumstances and needs, and in line with Basel Convention Technical Guidelines on Environmentally Sound Management of Plastic Wastes.

→ **WTO Dialogue on Plastic Pollution / MC13 Statement (adopted)**
"...environmentally sound, safe and effective non-plastic substitutes"

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Process-based Life Cycle Assessment

PRODUCT: Banana leaves plate (PS) Polystyrene plate

CATEGORY	Banana leaves plate (PS)	Polystyrene plate
Fossil resource scarcity	30%	72%
Freshwater eutrophication	74%	25%
Global warming	33%	42%
Human carcinogenic toxicity	54%	46%
Human non-carcinogenic toxicity	43%	37%
Land use	10%	90%
Marine eutrophication	71%	29%
Marine eutrophication	77%	23%
Ozone formation, Human health	50%	42%
Terrestrial acidification	41%	59%
Terrestrial eutrophication	79%	21%
Water consumption	10%	94%

FUNCTIONAL UNIT AND REFERENCE FLOWS

Functional unit	Plastic product	Substitute product	Unit
"Serving an average meal"	1 Polystyrene plate	1 banana leaves plate	Single use

Non-plastic substitutes: pros and cons

- Plastic plate (PS)
- Banana leave plate (PS)

FCDO-UNCTAD SMEP Programme: Material comparison dashboard.
https://bit.ly/SMEP_UNCTAD