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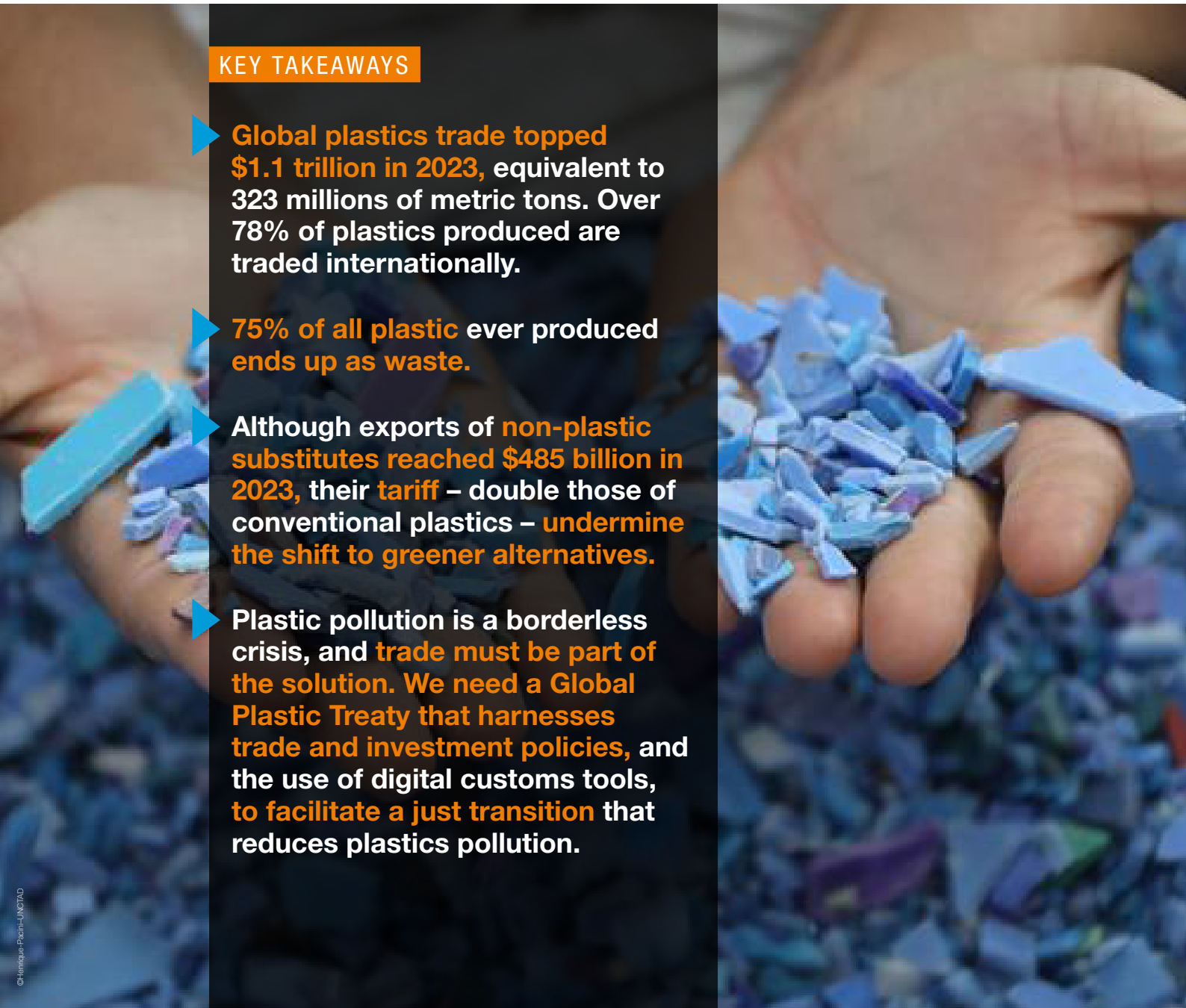
Global trade update

Monthly publication analysing trade policy and global trade data

Policy Insights

Mobilising trade to curb plastic pollution



KEY TAKEAWAYS

- **Global plastics trade topped $1.1 trillion in 2023,** equivalent to 323 millions of metric tons. Over 78% of plastics produced are traded internationally.
- **75% of all plastic** ever produced **ends up as waste.**
- Although exports of **non-plastic substitutes reached $485 billion in 2023,** their **tariff** – double those of conventional plastics – **undermine the shift to greener alternatives.**
- Plastic pollution is a borderless crisis, and **trade must be part of the solution. We need a Global Plastic Treaty that harnesses trade and investment policies,** and the use of digital customs tools, **to facilitate a just transition** that reduces plastics pollution.

Plastic pollution: An urgent trade and development threat

Few materials have transformed the global economy as rapidly as plastics. Lightweight, durable and cheap to produce, plastics are embedded in every sector and supply chain. However, plastics generate significant pollution and impose steep social and environmental costs, estimated at over $ 1.5 trillion annually.[1]

While international agreements exist for biodiversity protection - the Convention on Biological Diversity - and climate change - the Paris Agreement - there is no comprehensive global agreement yet to respond to the cross-cutting challenges of plastic pollution. Only partial elements are covered in existing multilateral environmental agreements (MEAs).

This critical gap is now the focus of the International Negotiating Committee (INC-5.2), mandated by the United Nations Environment Assembly Resolution 5/14 in 2022 to develop an International Legally Binding Instrument (ILBI) on plastic pollution, including in the marine environment. The latest round of negotiations is scheduled to take place in August 2025 in Geneva, marking a pivotal moment in the global effort to tackle plastic pollution.

Plastics contribute to the triple planetary crisis of pollution, biodiversity loss, and climate change:

- Annually, at least 1,400 wildlife species are negatively impacted by plastic pollution.[2]
- Most plastics (98 per cent) are derived from fossil fuels, generating 1.96 gigaton (Gt) of CO2 equivalent, while incineration of plastic waste releases significant Greenhouse gases (GHGs) and toxic pollutants.[3]
- A majority of plastic waste leaks into terrestrial and marine environments, frequently crossing borders.
- Coastal developing countries and Small Island Developing States (SIDS) are disproportionately impacted by plastic pollution they do not generate.
- The impacts on developing countries are exacerbated by limited capacity to collect, reuse, recycle and properly dispose of end-of-life plastics.

1 Landrigan, P.J., Raps, H., Cropper, M., Bald, C., Brunner, M., Canonizado, E.M. et al. (2023). The Minderoo-Monaco Commission on Plastics and Human Health. Annals of Global Health 89:3. Retrieved from https://annalsofglobalhealth.org/articles/10.5334/aogh.4056.

2 Brooks, A. L., & Havas, V. (2025). Strengthening global plastic policy with systems analysis. Nature Sustainability, 1-10.

3 UNEP (2023). Turning off the tap: How the world can end plastic pollution and create a circular economy. Retrieved from: https://digitallibrary.un.org/record/4011101/files/Plastic_pollution.pdf.

Trends in plastics production and trade

To effectively address plastic pollution, trade policy needs to be a part of the policy toolkit. The global production of plastics, much of it designed for single use, grew from 2 million metric tonnes (MMT) in 1950 to 436 MMT in 2022.[4] With business as usual, annual production could double to 884 MMT in 2050.[5] Only 10 per cent is recycled and nearly 75 per cent becomes waste.[6] National waste management is limited by data and services gaps, especially in low-income countries where data is on average 15 years old.[7]

In 2022, over 78 per cent of plastic produced was traded internationally or around 323 MMT traded annually in primary, intermediate, and embedded forms. The value of plastics trade more than doubled since 2005 to $1.13 trillion reflecting its widespread use across all industries, from primary pellets to finished goods. It now represents 5 per cent of global merchandise trade.[8,9]

4 Houssini, K., Li, J., & Tan, Q. (2025). Complexities of the global plastics supply chain revealed in a trade-linked material flow analysis. Communications Earth & Environment, 6(1), 257.

5 Dokl, M., Copot, A., Krajnc, D., Van Fan, Y., Vujanovic, A., Aviso, K. B., ... & Cucek, L. (2024). Global projections of plastic use, end-of-life fate and potential changes in consumption, reduction, recycling and replacement with bioplastics to 2050. Sustainable Production and Consumption, 51, 498-518.

6 United Nations (2025). UN sounds alarm on plastic pollution crisis. Available at: https://news.un.org/en/story/2025/06/1164046 and United Nations (2019). Advancing Sustainable Development Goal 14: Sustainable fish, seafood value chains, trade and climate. See: https://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=2576.

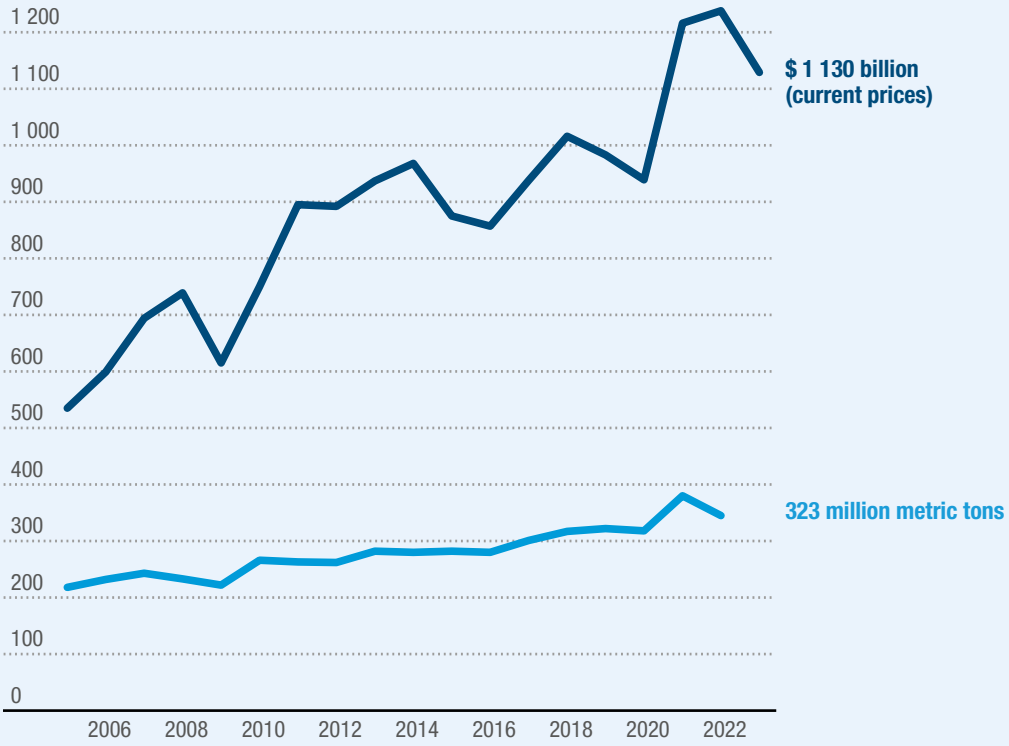
7 UN Office for Sustainable Development: The Waste Crisis: Accelerating National to Local Policy Action. Available at: https://unosd.un.org/sites/unosd.un.org/files/main_publication_for_web_upload.pdf.

8 The slight decline in plastic trade in 2023 could be due to ongoing reporting by national customs authorities.

9 Data from UNCTAD Plastics & Substitutes Trade Database (as of 23 June 2025). For more information, see https://unctadstat.unctad.org/insights/theme/251.

Global plastics trade has more than doubled in value and volume in the last 20 years

$ billion – Million metric tons



Source: UN Trade and Development (2025) based on UNCTADstat.

Evolving international responses to the problem of plastic pollution

Concerns about plastic pollution initially focused on its harmful impact on marine ecosystems. Over time, it became clear that plastic pollution transcends borders - not just as waste, but also through traded inputs and products that haves over time strained the waste management systems of importing countries, especially developing ones - prompting a progression in international response.

The figure below illustrates the gradual recognition and widening international response to plastic pollution and corresponding incremental actions taken at the multilateral level. It highlights the shift from environmental and safety focus towards an increasing need for engagement with and by the multilateral trade system.

Multilateral developments in addressing plastic pollution

Source: UN Trade and Development analysis (2025).

Trade as a solution to reduce plastic pollution

As global recognition of the trade-related dimensions of plastic pollution grows, it is increasingly clear that trade policy must be fully integrated into international environmental frameworks. Trade policies must be part of the policy mix needed to control plastic flows and mitigate their environmental and social impacts. They can also incentivise safer alternatives and stimulate investment in environmentally sound waste management. For these purposes, trade measures include: 1) control measures linked to plastic pollution prevention and mitigation, such as bans and restrictions on harmful products, and 2) enabling measures such as promoting liberalization, investment and innovation in non-plastic substitutes and alternatives as well as in relevant services and infrastructure.

Control measures

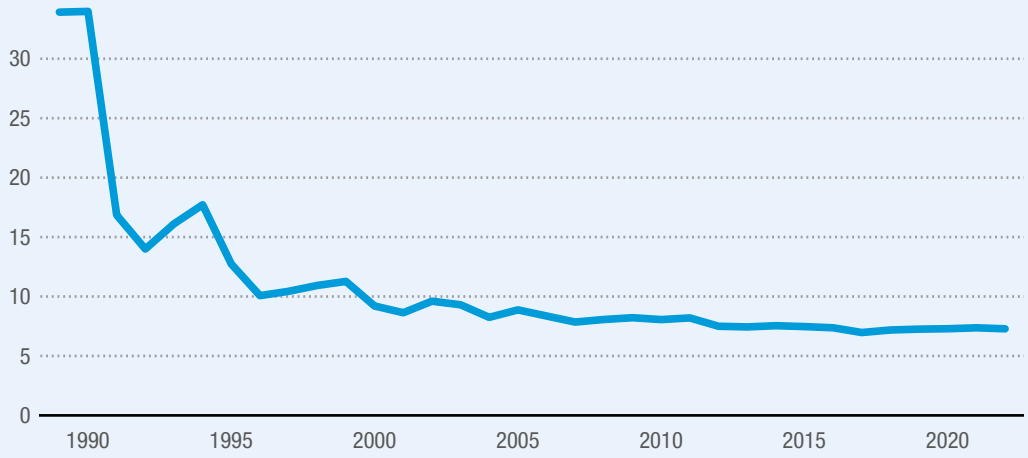
Both tariff and non-tariff measures affect competitiveness of plastics and non-plastics materials. Effective plastic pollution control requires a comprehensive value chain approach to prevent leakage from production to disposal.

Over the past 30 years, tariffs on plastics and rubber have dropped from 34 per cent to 7.2 per cent - largely from the implementation of the Uruguay Round Agreements under the World Trade Organization (WTO) and the proliferation of regional and bilateral free trade agreements leading to near-zero tariffs on plastics and rubber products. These tariffs reductions have made plastics and rubber products cheaper and more accessible and tradeable.

In contrast, plant-based plastic alternatives did not benefit from similar tariff reductions, and tariffs now average 14.4 per cent, undermining competitiveness of substitutes from natural origin.

Plastic and rubber tariffs have declined almost 5-fold over the last three decades

Percentage, average



Source: UNCTAD Calculation based on WITS, 2025. See: World Plastic or Rubber MFN Simple percentage average 1988–2022, WITS Data.

This widespread availability of plastic materials coupled with the failure to internalise the environmental costs and invest in environmentally sound waste management, has contributed to an accumulation of pollution from plastic waste.

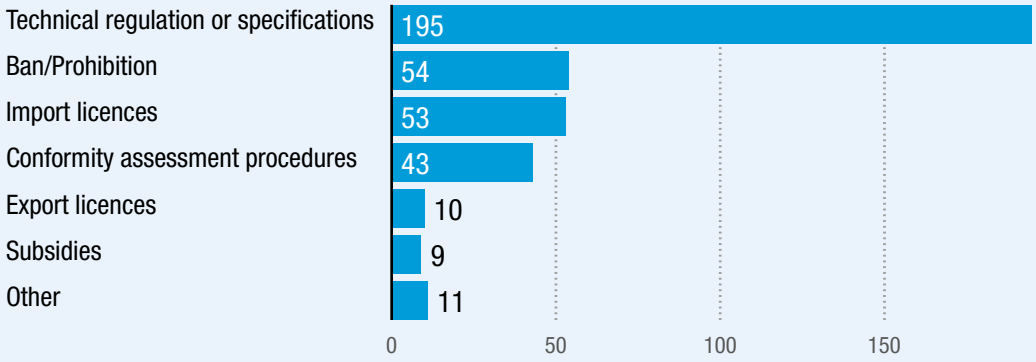
At national levels, countries are increasingly adopting technical regulations for the production, use, and disposal of plastics to prevent or mitigate plastic pollution, as reflected in WTO notifications of environmental, health, and safety non-tariff measures (NTMs). The most common NTMs are technical regulations on product specifications, production methods and packaging requirements - appearing in 195 of 299 notified measures. Bans on single-use plastic products, restrictions on the import of plastic waste, and import licenses are also common.

Measures are sector-specific, as impacts and availability of viable solutions vary by use. For instance, single-use plastics used in packaging are major sources of pollution for which safe and sustainable alternatives exist. Consequently, single-use plastics could be best tackled through targeted bans on imports or exports of plastic packaging, trade restrictions, or taxes. In contrast, plastics used in construction, with long lifespans and less often thrown away, are better managed through improved incentives for R&D, product design, reuse and recycling.

Sector-specific interventions must be complemented by systemic changes across the plastics value chain, including trade, innovation and financing policies that support circularity and the adoption of safe and sustainable alternatives and substitutes to conventional plastics.

Though NTMs play an important part in addressing plastic pollution by providing legal frameworks and safeguards, their proliferation and the lack of convergence and mutual recognition can create significant burdens for companies, especially in small and medium enterprises and in developing countries.[10]

Technical regulations, bans and import licenses are the most common types of NTM applied to plastics



Source: UN Trade and Development analysis (2025) based on data from the WTO Environmental Database.

[10] Sustainable Manufacturing and Environmental Pollution (SMEP) programme (2025): Plastic Reduction & Management: Regional policies and standards on biodegradation and compostability in East and West Africa.

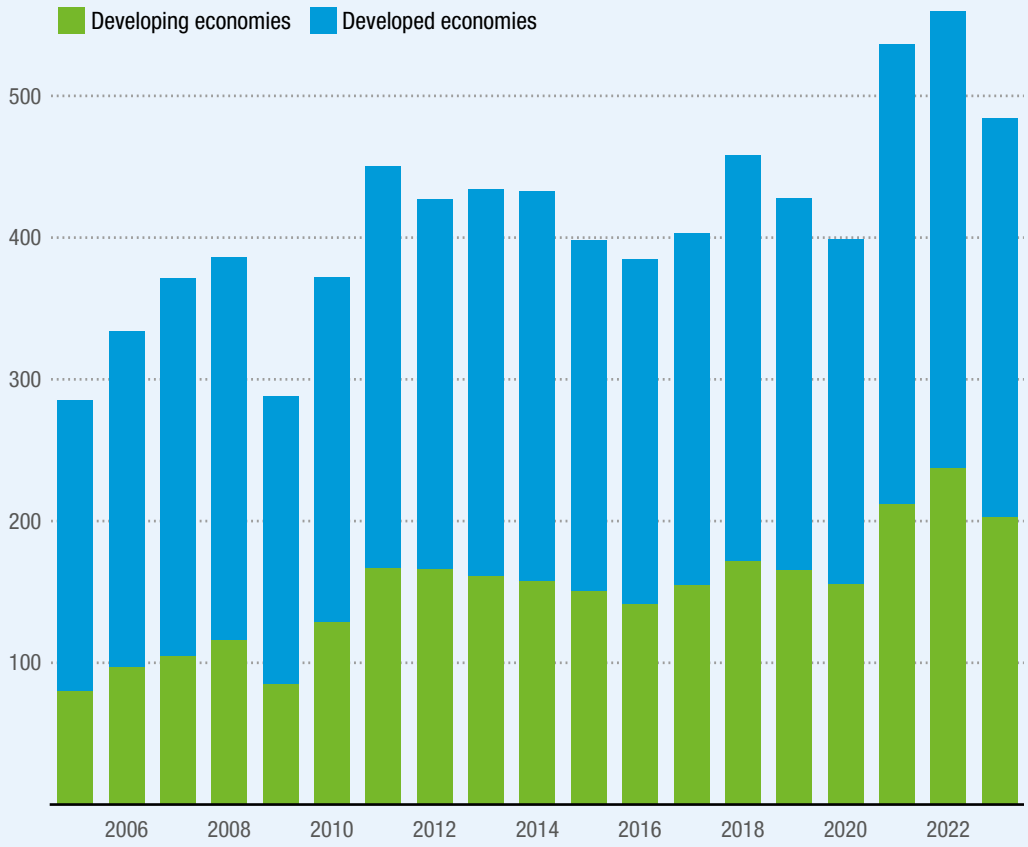
Enabling measures

To address the plastic pollution crisis, UNCTAD has identified promising opportunities to replace plastics with safe and sustainable and non-plastic substitutes and alternatives, particularly in packaging, agriculture, and fisheries applications.[11] UNCTAD's non-plastic substitutes database identified 274 traded products of mineral, plant or animal origin that could replace plastics in various applications.[12] Materials like paper, glass, aluminum, bamboo, natural fibers and seaweed tend to be biodegradable, erodible, compostable, recyclable, and have long been used legally and safely by industry and consumers. Plastic alternatives, such as bio-based and compostable plastics, are available in many developing and developed country markets with large potential to grow as they currently represent only 1.5 per cent of global plastic production.[13]

Global exports of non-plastic substitutes reached $485 billion in 2023, down from $561 billion in 2022 mirroring the small dip observed in plastics. Developed countries accounted for 58 per cent of exports, while developing countries held 42 per cent, however with a significant growth rate in exports of 5.6 per cent.

Global exports of non-plastic substitutes show an upward trend with some cyclical declines, 2005-2023

$ billion



Source: UN Trade and Development, UNCTADstat

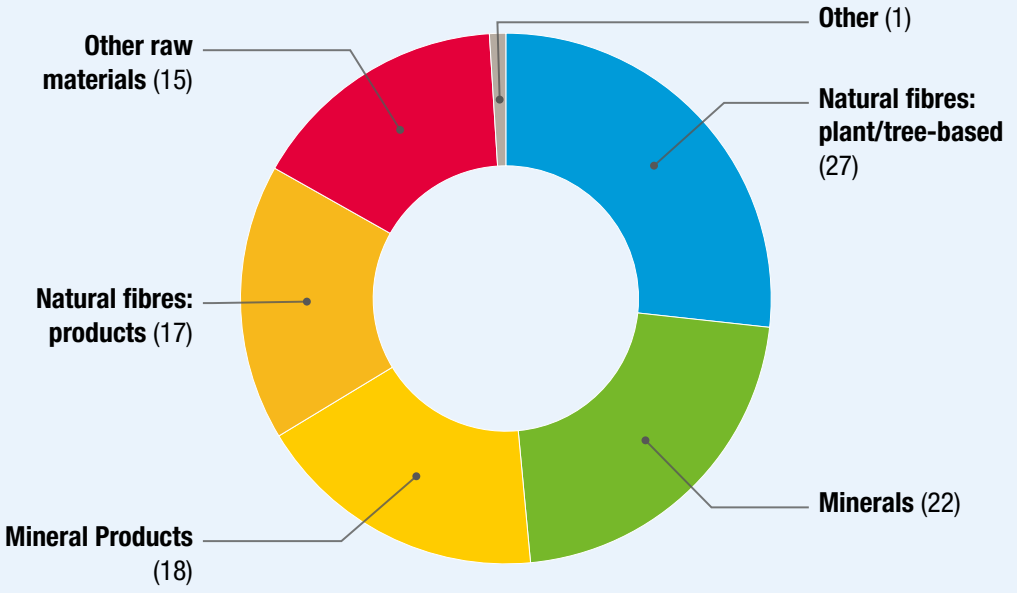
[11] UNCTAD (2025) Plastic substitution in developing countries: Sectoral opportunities and challenges.

[12] https://unctad.org/news/new-data-tracks-global-trade-non-plastic-substitutes.

[13] UNFCCC (2024). A New Plastics Economy is Needed to Protect the Climate. See: https://unfccc.int/news/a-new-plastics-economy-is-needed-to-protect-the-climate.

Raw materials dominate trade in non-plastic substitutes, comprising 65 per cent of total exports in 2023. Raw materials such as seaweed and natural fibers and certain minerals such as bauxite and silicates dominate trade in non-plastic substitutes, comprising 65 per cent of total exports in 2023. Value-added products such as organic-based packaging, textiles and furniture accounted for the remaining 35 per cent.

One third of the $485 billion of non-plastic substitutes exported in 2023 were products with added value



Source: UN Trade and Development (UNCTAD) based on UNCTADstat Data Centre

Material substitution faces tariff and regulatory challenges

Trade policy such as adjustments to existing tariffs and non-tariff measures, can help promote alternatives to plastics.

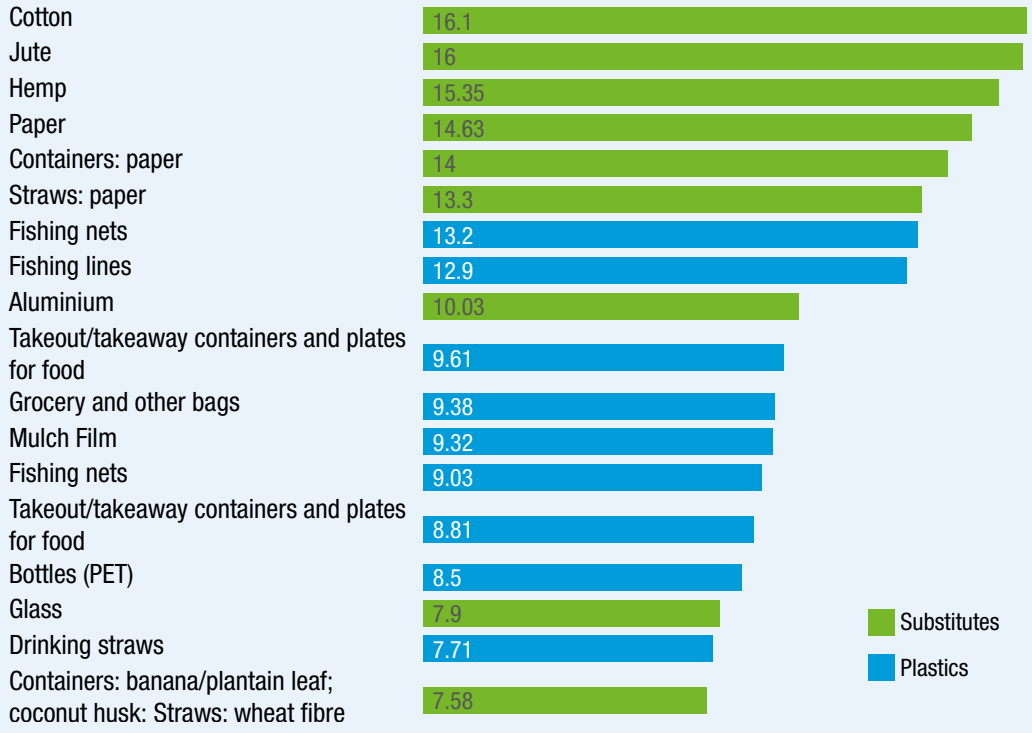
- Plastic products often face lower import tariffs compared to natural substitutes – for example, 7.7 per cent for plastic straws vs. 13.3 per cent for paper ones. Paper containers also face higher tariffs than plastic bags or bottles.
- Most NTMs found in the WTO Environmental database focus on controlling non-plastic substitutes materials and products for safety and environmental purposes.
- Notifications related to non-plastic substitutes to the WTO grew at an average annual rate of 13 per cent between 2009 and 2021, faster than other environment-related NTMs notified, showing increasing attention by regulators to this group of products.[14]

Direct enabling measures, such as grants and tax concessions, can support market creation for safe and sustainable non-plastic substitutes. However, they are among the least notified measures to the WTO.

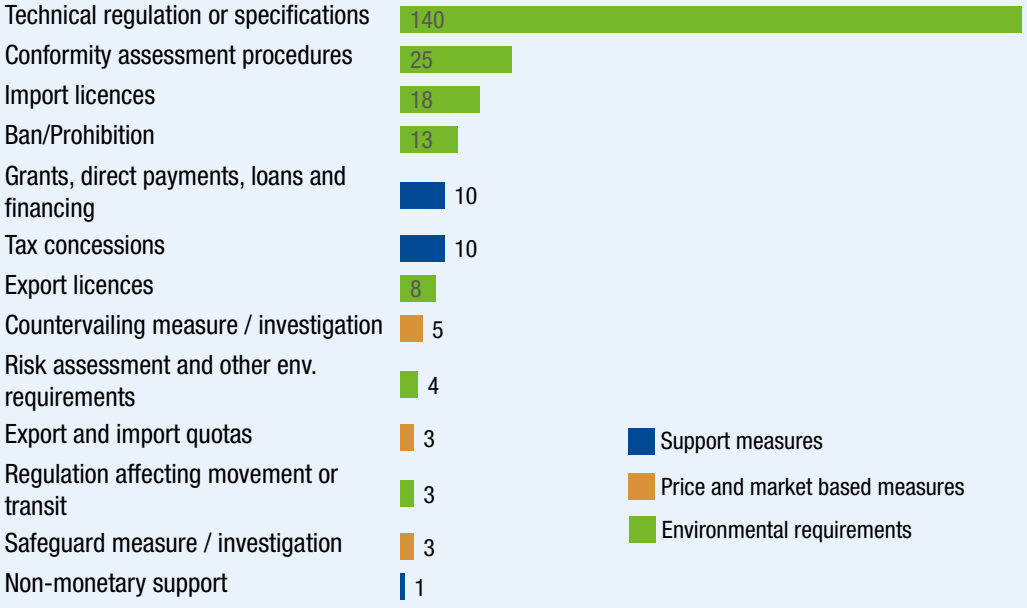
[14] See UNCTAD (2024) Beyond Plastics: A review of trade-related policy measures on non-plastic substitutes. Available at: https://unctad.org/publication/beyond-plastics-review-trade-related-policy-measures-non-plastic-substitutes.

Comparison of world average import tariffs applied to selected plastic products and plastic substitutes

Percentage



Most of the WTO notified NTMs measures applicable to non-plastic substitutes are of technical regulatory nature (2009–2021)



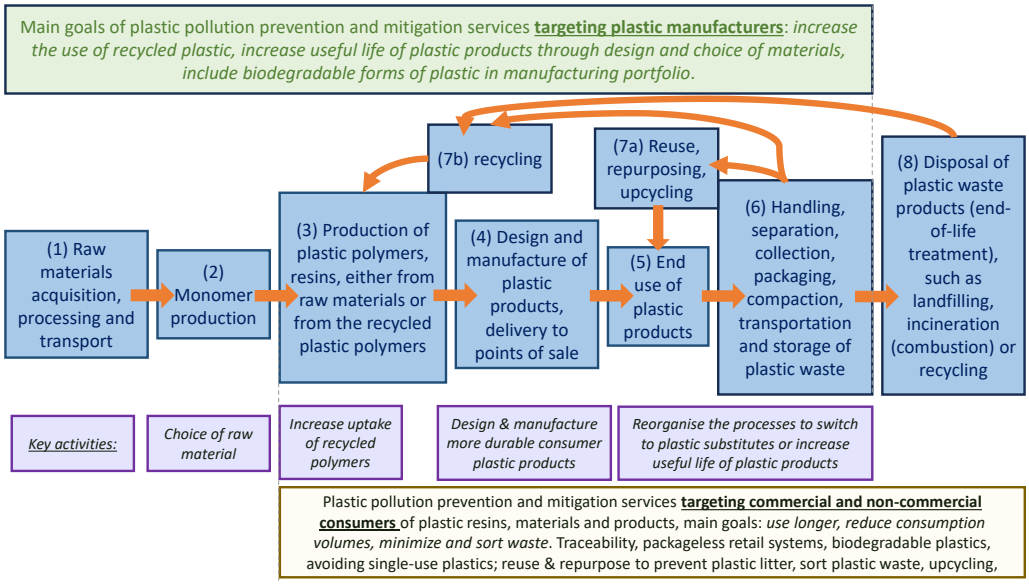
Note: In some instances, notifications cover multiple measures such as technical regulations and conformity assessment. These measures are counted separately in this analysis making the total count >201. For the sake of simplicity, measures are regrouped into Harmonised Types as defined by the WTO. 'Environmental requirements' cover a wide range of standards and regulations, not all of which are purely environmental.
Source: UNCTAD 2023. Analysis based on WTO Environmental Database.

Investment and trade in relevant services and infrastructure

Trade in services can help fill investment gaps for some countries, by bringing experts, technologies and best practices to help countries comply with evolving regulatory and market requirements – such as traceable waste management systems or Extended Producer Responsibility schemes, where responsibility for managing or recycling plastic waste lies with the producer. Examples include plastic bottle recycling schemes or producer-funded plastic recycling initiatives.

Capacity building or preventing and mitigating plastic pollution also requires significant investment. This includes significant scaling up of funding for environmentally sound waste management services, R&D in advancing circular plastic economies, developing safe and sustainable plastic substitutes, and re-tooling production processes – especially in packaging, textiles and apparel, which rely heavily on synthetic, plastic-based inputs.

Trade-in-services have a central role in preventing and mitigating plastic pollution along the value chain



Source: Prepared by UNCTAD based on analysis under the SMEP Programme.

Foreign direct investment (FDI) could be an important source for catalytic and transformative investment to stem plastic pollution, including by reducing its production. However, given reduced global FDI[15] in recent years, especially to developing countries, waste-management and R&D services will likely continue to rely on Official Development Assistance or publicly provided concessional finance, while other activities that make a reliable return may attract investment through reinvested profits, commercial loans or a blend of public and private finance, especially if the treaty or other regulations require plastic pollution reduction.

[15] UNCTAD (2025). World Investment Report: International investment in the digital economy. Available at: https://unctad.org/publication/world-investment-report-2025.

The global plastics treaty aims to align trade policies with domestic and regional actions on plastics

The INC process aims at creating a novel, multilateral environmental agreement that addresses the transboundary nature of plastic pollution with comprehensive and full-life cycle approaches.[16] Its outcome will have implications for production, consumption, and trade of plastics, and probably chemicals of concern used in plastics, non-plastic substitutes and alternatives, and the accumulated legacy of plastic pollution in the environment. The ILBI is expected to include both binding and voluntary approaches, guided by the Rio Declaration, as well as unique national circumstances and differentiated capabilities.

A broad range of legislative, technical, administrative, and market-based measures are being discussed. These include production caps, reduction targets, trade and production restrictions, improved product design, promotion of safe and sustainable non-plastic substitutes, environmentally sound waste management, extended producer responsibility, and support for financial, technological, and capacity-building initiatives. While many measures are regulatory, others aim to foster innovation and sustainable investment.

[16] The ILBI negotiations at INC 5.2 will be based on the Chair text of 1 December 2024. See UNEP (2024). INC 5.1 report, paragraph 91. Available at: https://wedocs.unep.org/bitstream/handle/20.500.11822/47162/INC_5_1_Report.pdf.

Policy considerations for Member States and other stakeholders

As negotiations toward an ILBI on plastic pollution advance, it is increasingly critical to align trade, investment, financial and development policies, to address the urgent need to reduce plastic pollution. Alignment should occur both within the ILBI process and in parallel with relevant regional and national policy frameworks.

Key considerations include:

1. **Rebalancing trade measures:** Redesign current tariff and NTMs to promote the responsible substitution of plastic products. This involves reducing tariffs and simplifying NTM compliance for safe and sustainable non-plastic, thereby encouraging market access and boosting trade competitiveness, especially for producers in developing economies.

2. **Promoting regulatory convergence:** Advance mutual recognition of NTMs, such as material and labeling requirements, for both plastic and non-plastic products. Ensure such measures are transparent, non-discriminatory, and conducive to sustainable trade.

3. **Investing in new products, upgrading existing productive processes and the provision of environmentally sound plastic management services:** Scale up public, private, and philanthropic investment in less polluting inputs and productive processes, environmentally sound waste management and recycling infrastructure, prioritising solutions aligned with the most effective and inclusive options for economic development.

4. **Fostering policy coherence:** Align trade and investment policies with the ILBI and promote synergies with related multilateral frameworks, including the WTO Dialogue on Plastic Pollution, Basel, Rotterdam, and Stockholm (BRS) Conventions, United Nations Framework Convention on Climate Change (UNFCCC), and the UN Ocean Conference.

5. **Leveraging digital tools:** Expand the use of digital customs and traceability systems, such as UNCTAD's Automated System for Customs Data (ASYCUDA), for both products and waste, to facilitate ILBI as well as customs regulations compliance and reduce trade costs.

6. **Enhancing data systems:** Strengthen national and international plastic data systems to improve transparency and comparability across the plastics life cycle. This includes aligning trade and production statistics with international standards, addressing data gaps on emissions, waste, and recycling, and supporting developing countries in harmonising data for effective policy and treaty implementation.

Through this publication, UNCTAD provides valuable insights into current and emerging trade policy issues and their impact on economic development in a fast changing global trade context.

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