PACKAGE-LESS AND REUSE SYSTEMS THROUGH POLICY INTERVENTION: Rethinking packaging in international trade

Policy Brief







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The time for package-less and reuse strategies is now.

The package-less and reuse systems play an important role in creating opportunities to diversify trade and move towards a safe and efficient global circular economy, including higher productivity. The transition to package-less and reuse systems requires significant changes in consumer behaviour and in market models.

1. WHAT IS AT STAKE?

Across the world, policymakers are reacting to urgent calls to solve the plastic pollution crisis by banning throwaway – single-use – plastics. Single-use plastic is still widely used in the food sector to package food and drinks and serve and deliver food on-site or on-the-go. On average, the total lifespan for single-use plastic packaging is only six months [1]. amount of waste they generate by unpacking goods at home and are seeking to address this issue [5, 6]. With the watchword of package-less, businesses have been established worldwide and described by the mainstream media as a disruptive force to single-use and disposable package practices. The package-less retail is an example of an increasingly pro-environmental initiative focusing on removing unsustainable practices rather than "greening" existing products and objects [5].



50% of global plastic production is for packaging and non-packaging single-use products

With quantities of waste progressively rising worldwide, packaging material and packaging waste have emerged as critical areas for action. The continued increase in waste production, in which single-use plastic shares a significant burden, is harmful to the environment, people and economies [2]. Plastics have harmful environmental effects and pose high risks to human health, with microplastic particles found in our food, water, drinks, and air, as recently shown in human blood [3].

The expansion of plastic waste footprint is environmentally and economically unsustainable; governments recognise that wide-scale adoption of package-less and reuse strategies may serve as a significant shift to circularity [2]. The package-less and reuse strategies are attracting attention as a new form of sustainable consumption [4, 5]. Consumers are becoming increasingly concerned by the



< 10% of all plastic waste has been recycled

Over the past decade, governments have prioritised waste prevention based on the Circular Economy concept, proposing the following waste hierarchy: avoidance, reuse, recycling, recovery (e.g., energy recovery), and disposal. Avoidance has the highest ranking in the circular economy hierarchy. However, avoidance (e.g., package-less approach) and recycling have limitations, while reuse can reduce waste generation and footprint-per-use. It is importantly to mention that reusable products or packages must be designed to be repeatedly reused for the same purpose for which they were created.

Furthermore, trading single-use plastics for disposable plastics substitutes (e.g., plant-based fibres) can significantly help with climate impact mitigation, water and air pollution, loss of biodiversity, and eco-toxicity levels, considering the products involved [7]. Companies across the packaging value chain must be aware of the accelerating pace of regulatory development, as noncompliance could lead to trade barriers. Hence, this report offers an overview for practitioners and policymakers seeking to adopt or expand package-less and reuse strategies in their activities. The findings, interpretations and conclusions expressed herein result from a systematic literature review and collaboration with key stakeholders facilitated by the Quakers United Nations Office (QUNO). Still, results do not necessarily represent its views.

Key issues to consider in a reusable packaging system [2]:

- The existence of infrastructure and reverse logistics for take-back, cleaning, refill, and redistribution of the packaging (operated by the producers and/or a third party).
- A suitable financial incentive to customers to return the packaging.
- A minimum number of packings rotations.
- A collection rate of at least 90% of the packaging.

2. PACKAGE-LESS AND REUSE SYSTEMS: A CONTEMPORARY TREND FROM A LONGSTANDING TRADITION

The package-less and reuse practices are no novelty. This concept is based on ancient traditions, when people used cloth bags and jars for their shopping, and where one could not forget to take bags or containers to stores. Buying in bulk for better price value was the norm in the past, resulting in less shopping and packaging. Many groups advocate that going without packaging is not reverting to an outdated lifestyle but embracing the future and moving closer to a more sustainable world. However, package-less practices require consumers to rethink their shopping, break unsustainable habits and set up new ones, often rejecting the personal convenience of standard shopping practices [8] and removing packaging from shopping results in problems and complexities.

A. So, what is needed for package-less or reuse to happen?

As all practices involve specific competencies, **shopping consists of intentions, attitudes, and values.** It is also important to mention that shopping is routine, and changing routine is complex, which makes changing shopping practice challenging because **it involves changing habits that have become established over time** [5]. The packaging-less store and packaging-less retailing are two strategies to help the development of this market that go hand-to-hand despite varying applicability and scalability.

The packaging reuse system should be efficient and well-managed based on the following principles [2]:

- Define reuse and regulate the labelling
- Establish reuse targets and create a safe environment for investments in the associated technology and infrastructure.
- Develop and strengthen standardisation and managed pooling systems, where participants use a shared supply of a specific packaging type.
- Consider financial incentives and the development of favourable economic structures to support the transition from a single-use business model into a reuse model.
- Consider the material composition, free from pollutants and toxicity.

Reuse definition [2]: "any operation by which a product or packaging is used again for the same purpose for which it was conceived and is an important measure to reduce resource and energy consumption as well as waste generation"

While reuse strategies concentrate more on items (e.g., packaging or product), refilling strategies look more at systems.

- Pre-fill systems: Require that brands retain ownership of the product packaging, which is designed to be returned for cleaning and refill. The pre-fill systems rely on return schemes and can be divided into [9] i) a return-on-thego system, and ii) a return-from-home system.
- **Refill-at-home systems:** Consider that consumers keep a reusable container refilled with a new product as and when needed. Hence, these systems can have returnable or throwaway packaging [10].
- Refill-on-the-go systems: Include any model where consumers can bring their container into the store to refill it. These systems include instore dispensing platforms and packaging-less retailers adopting "buy by weight" strategies.

Packaging-less strategies require redesigning stores to accommodate dispensers and compensate for the loss of the package as an information device. Removing a package that facilitates self-service and accomplishes several tasks – from quality assurance to storing facilitation – means others must assume those tasks. **Packages have agency. When a package is removed from a product, the tasks it accomplishes must be performed by others, re-distributing the agency to retailers and consumers [5]. In addition, packaging-less strategies compete with other sustaina-** bility strategies, such as choosing more environmentally friendly packages like plastic substitutes or alternatives.

A package-less and reuse policy requires a clear definition and criteria¹ for what is **reusable** and non-reusable. For reusable, reusable packaging or product must be non-toxic and is expected to be used at least the minimum number of times so that its environmental impact is less than the disposable item it is replacing. Lifecycle Analysis (LCA) is the most common tool for assessing environmental impacts. Still, it only evaluates some of them, excluding marine plastic pollution and the impacts of microplastics and chemicals on human health [3, 11]. To ensure that all environmental impacts are considered and that, the benefits of reusables exceed rather than merely break-even essential to adopt a factor higher than the average break-even points² for disposables. For example, comparing disposable versus glass cups, a factor of 25% or higher than the average break-even point between these two options would be the minimum usage of 125-252 disposable cups versus one single glass cup [7, 12]. For non-reusable, terms like "throwaway", "disposable", and "single-use" are often used interchangeably. However, there can be a vast difference between "single-use" and "throwaway". Two uses, or five or even below the average break-even point, would not meet the definition of reusable, but it could be classified as throwaway. Thus, any item not meeting the definition of reusable should be referred to as non-reusable, especially in policies or regulatory guidelines, to avoid potential confusion for the regulated industries regarding what is reusable and what is not [12].

Only five companies are adopting reuse strategies, among the largest ten companies reporting their plastic packaging footprints (Table 1).

¹ The same can happen to plastics substitutes and plastic alternatives.

² The break-even point is the level of environmental impacts at which the single-use plastic option equals the environmental impacts of a reusable substitute.

COMPANY	PLASTIC PACKAGING WEIGHT (METRIC TONS/YEAR)	PERCENTAGE OF CIRCU- LAR STRATEGIES (E.G., REUSABLE, RECYCLABLE AND COMPOSTABLE)	PERCENTAGE OF REUSABLES
The Coca-Cola Company	2,961,000	99.0%	1.7%
PepsiCo	2,350,000	77.0%	0.0%
Nestlé	1.267,000	61.0%	1.0%
Danone	717,000	67.0%	4.8%
Unilever	690,000	52.0%	Not reported
Mondelez International	189,500	5.0%	0.0%
Mars, Incorporated	179,382	22.0%	0.0%
ĽOréal	138,000	41.7%	1.0%
FrieslandCampina	68,676	28.0%	0.4%
Kellog	64,806	14.0%	0.0%

Table 1: Recycling versus reusing based on figures from 2020

It is essential to distinguish the percentage of circular strategies from reintroduction and recovery rates³. Having a 100% target of products that can be reusable, recyclable, and compostable is fantastic. However, it does not mean that all plastic waste generated will necessarily be recycled. It is not enough to set a target of making 100% of our waste recyclable or compostable [13]. One of the challenges with reporting on plastics is that there are different types, each with different properties, uses, and recovery rates. For example, polyethylene terephthalate (PET) – a higher-value plastic used in soft drink bottles – presents a recovery rate of less than 5% and a reintroduction rate of around 20% [14]. Changing the throwaway culture requires significantly rethinking the decades-old regulatory approach of diverting plastic waste from landfill that has been applied to tackle plastic pollution. Waste advocates, regulators, and policymakers have yet to prioritise the top tiers of the circular economy hierarchy [12]. Even if circularity is not the final goal, it should be part of an ongoing process to achieve greater resource efficiency and effectiveness. In this sense, companies' fundamental challenge in implementing circularity is to rethink their supply chains, and therefore the way they create and deliver value through their business models [15].

³ Recovery rate is the quantity of recycled products collected and sorted as a proportion of the total waste generated in a particular locality and reintroduction is the proportion of the recycled products that is sent back to production systems as feedstock for new products.

3. REGULATORY DEVELOPMENTS IN PACKAGING

Despite the increasing pressure to reduce plastic packaging waste, regulatory maturity across countries remains highly heterogeneous. In recent years, the world has seen a rapid increase in sustainable-packaging regulations focusing on shopping bags and particular food-service items (i.e., plastic straws or plastic cutlery). France established a reuse packaging target law, which requires 10% of packaging placed on the market to be reusable by 2027 [16]. Chile introduced a plastic regulation that promotes and encourages the sale of reusable beverage containers [17]. Portugal has amended its law that by 2030, 30% of all packaging put on the market, of any material, must be reusable [18].

Packaging value-chain companies must follow the constant evolution of regulation to keep track of changes and remain compliant. They must develop capabilities to understand regulatory measures, scope, application, and implications for their business and customers.

The understanding of the developing regulations on a global scale is overly complex due to the lack of terminology and standard scope.

The lack of an established or aligned terminology globally is complex; for example, the term reuse can have different meanings, leading to a variable intensity of impact for the industry. While, in the lack of a standard scope, some regulations are focused on multiple categories, applications, end products, and materials (e.g., design rules). In contrast, others focus on specific aspects (e.g., labelling), creating potential overlap with different rules covering a similar scope.

A. Regulatory vehicle

The financial penalties (i.e., taxes, fines, and fees) represent the leading and preferred regulatory vehicle for change in the packaging industry, according to a study with 30 countries [19]. Most countries are moving toward setting up similar regulations around waste packaging, though at different paces and depths [19].

There is a growing concern about waste control, and most of these measures will create targets for reusable, recyclable and compostable products. Recycling and reusing packing are the least adopted measure.

Most regulations on plastic waste prevention cover packaging specifications, such as composition, size, and weight. Regarding primary packing, regulatory measures mainly address labelling and traceability to promote customer empowerment [19]. There was no indication of reusing or package-less strategies being promoted.

Taxes can be essential in reducing plastic waste and is the leading and preferred regulatory vehicle for change in the selected countries to increase sustainability in the packaging industry [12]. These tend to be introduced at a national level, and there are often significant differences in the approaches taken. Using the tax system to change behaviour is often a carrot-and-stick approach. Regarding environmental taxes, the stick is taxing undesirable behaviour (e.g., plastic waste) or the extraction of resources (e.g., fossil feedstock). The carrot usually forms incentives, such as government subsidies for establishing return schemes. Such incentives can be made through the tax system, lump-sum payments, or rebates because higher earners typically benefit more from tax reliefs than lower earners [20]. There may be incentives to invest in research and development of package-less products and processes, such as Algramo, MIWA, Re-Pack, Loop, and other experiences [9].

It is essential to shift taxes from labour to resources, such as taxes on fossil feedstock, virgin materials, and plastic pollution. However, taxation must be addressed as a toolkit, not a goal. Hence, it requires knowing the goal trying to reach before deciding what tax tools to use [20]. For example, improving circularity can adopt low value-added tax (VAT) rates for sustainable products and services. Allowing consumers to choose between two otherwise similar goods or services, even a moderate VAT difference, can effectively nudge consumers to purchase the circular option rather than the linear one [20].

B. Non-tariff measures (NTMs)

A strong and harmonised market fosters the investments and innovation needed to drive the circular economy. The lack of an aligned terminology creates NTMs for trade. The fragmentation of terminologies and the fragmentation and rules covering a similar scope can create administrative barriers to the free movement of goods.

The implementation of NTMs was based on the barriers, availability of goods and services (import and export) and the existing political alliances with other trade partners. The NTMs can be created with a different monetary effect and significantly impact package-less and reuse strategies. They can affect price and product availability

NTMs may take the following forms [21]:

- Protectionist barriers: They are designed to protect specific sectors of domestic markets, making it difficult for other countries to compete favourably with locally produced goods and services. The barriers may take the form of licensing requirements, allocation of quotas, antidumping duties, import deposits, etc.
- **Assistive policies:** The function of this NTMS is to protect domestic companies and enterprises but not directly restrict trade with other countries, inhibiting free trade with other countries, such as customs procedures, packaging and labelling requirements, technical standards and norms, and sanitary standards. In addition, governments can help domestic companies by providing subsidies and bailouts so local products can be competitive in the domestic and international markets.

Non-protectionist: These policies aim to protect the health and safety of people and animals while maintaining the environment's integrity and assuring non-discriminatory practice. One example of non-protectionist policies includes import bans.

C. Current trends that will shape regulations in the years to come

Five key trends will shape the packaging industry and related investable themes over the next few years [22].

- 1. First, consumers are highly aware of sustainability issues (e.g., ocean plastic pollution and microplastics), with their concerns accelerating and growing, but they need clarification.
- 2. Second, in response to public outcry, governments are designing increasingly ambitious regulations for packaging and plastic waste (e.g., China Waste Ban [23] and the Basel Convention Plastic Waste Amendments), influencing beyond their national borders. This, aligned with accelerating consumer sentiment, creates a complex landscape for corporations to navigate and plan reliably.
- 3. Third, across regions, there are critical gaps around waste collection, recycling systems, and technology, limiting significant changes in the packaging value chain over the near term. It takes time to alter a production line, around two or more years, for a company and its suppliers to adapt to new systems. In addition, a package-less and reuse policy requires a clear definition and criteria for what is reusable and non-reusable, which remains unclear at the policy level.
- 4. Fourth, leading fast-moving consumer goods companies and retailers remain committed to transforming their portfolios (e.g., there are initiatives from Nestlé, Unilever, and Danone, among others), but large-scale market adoption of innovations (e.g., Algramo, MIWA, RePack, and Loop) remains slow and niche oriented.
- 5. Lastly, until further notice, plastics are here to stay, with an emerging green premium on recy-

cled raw material. However, there are technical limits to circularity. The current recycling chain for plastic packaging in the Netherlands is one of the more advanced systems globally, it is still far from an optimal material circularity, and its recycling system is still highly dependent on fossil feedstock [24].

These trends open investable opportunities. One of them is the package-less and reuse strategies. For example, the rise of e-commerce specifically can lead to an increase in reusable and returnable packaging (e.g., RePack), pivoting from the primarily one-way flow of packaging currently in use to a circular model [9, 22]. Even though package-less and reuse strategies are a proven concept historically, scalability is yet to be established for many of these models, especially in international trade, where these strategies are in their infancy.

The time for package-less and reuse strategies is now. These strategies represent an untapped business potential. Replacing just 20% of single-use plastic in packaging with reusable alternatives offers a USD 10 billion opportunity in business. Moreover, reuse models can benefit users and companies significantly, including brand loyalty and cost savings [9].

Moving from single-use to package-less and reuse not only helps eliminate plastic waste but also, if done well, offers significant reductions in greenhouse gas emissions⁴ [7] and other negative externalities, such as microplastics and marine pollution [9].

4. WHAT IS THE ROLE OF TRADE AND TRADE POLICIES FOR LESS PACKAGING AND SINGLE-USE PLASTIC?

The linear models based on "take-make-use-discard" approaches continue the domination of business-as-usual trade activities. The perception of the linear model is that it is more cost-effective to produce goods from virgin resources, using and discarding them, than increasing their durability through reuse. Therefore, the circular economy's solutions related to package-less and reuse strategies remain niche.

Governments and businesses must consider political risks and ways to anticipate, understand and mitigate them in international trade. Global companies require rigorous, reliable, and highly respected predictive analysis of key emerging markets and critical global themes.

The World Trade Organisation (WTO) has benefited its members by providing a stable and predictable trading environment, allowing for a massive expansion of international trade while providing a framework for settling trade disputes through adjudication.

Government support is the most common measure regarding the circular economy (i.e., assistive policies). They comprise grants and direct payments, preferential loans and loan guarantees, and income and price support. Experience at the WTO provides valuable insights into how trade interacts with strategies attempting to reduce plastic waste. Improving cooperation and coordination among members allow WTO to ensure the adaptation of the global trade system to a changing regulatory landscape and contribute to plastic waste minimisation. The circular economy is not a novelty for WTO negotiating initiatives [25]; however, improving or changing B2B shipping and logistics to reusable packaging is. Hence, these disruptive initiatives require concrete steps that WTO members can take collectively to facilitate trade in critical areas of global supply chains.

⁴ In the Democratic Republic of the Congo, replacing single-use expanded polystyrene cup for a glass cup reduced global warming impact by Factor 10 in just one year of use. In Zambia, replacing single-use high-density polyethylene bags for single-use paper bags reduced global warming by Factor 5.

Policymakers worldwide are starting to acknowledge the urgent need for policy intervention to solve the plastic waste crisis. However, designing a policy framework that leads to impactful interventions without resistance is challenging, especially in international trade. Policy measures for plastic waste prevention and reuse should consider the plastics lifecycle, rethink the plastic packing supply chain, and encourage the eco-design of reusable plastic packaging within the reuse chain. This will require collaboration and sharing of learnings among stakeholders, particularly policymakers' engagement, to create the right enabling and satisfactory conditions, strengthening domestic policies and fostering international cooperation. Plastic waste can be reduced in three ways; by reducing plastic use (e.g., plastic substitutes), changing B2B shipping and logistics to reusable packaging, and improving package-less retailing options. These strategies have advantages and disadvantages regarding the likelihood of implementing impactful policies.

As interest in reducing plastic waste grows, it becomes increasingly important to ensure that trade policies minimise packaging waste and improve reuse strategies. Not doing so would be a missed opportunity, given the unique role of trade in scaling up solutions worldwide. Moreover, disregarding the need to align trade policies with waste pollution reduction risks reinforcing linear approaches over circularity. As a result, countries worldwide may forego the potential benefits of new opportunities to diversify trade and move towards a safe and efficient global circular economy, including higher productivity.

The well-known challenges of implementing a circular economy, such as technological limitations and a lack of waste infrastructure or the difference between consumer awareness and consumer behaviour, a uniform understanding of the reduction, reuse and recycling strategies are missing, which is also apparent in situations where standard definitions are explicitly assumed. This absence of definitional precision, in combination with specific weaknesses in the formulation of targets, leads to a problem in which companies talk about a circular economy while implementing a recycling economy [26].

There is no denying that immediate and substantially more radical change in the present method of production and consumption of plastic, including a consistent avoidance of single-use packaging, is needed [26, 27]. Consequently, it must be ensured that stricter targets for reduction and reuse are formulated, given the technical limitation of recycling [27]. In addition, the commitments must be strictly evaluated based on unequivocal definitions [26], and governments should foster self-regulation by companies through self-commitments, guaranteeing these respective commitments contain ambitious targets. One vital step to solve the lack of definitions is the negotiations ongoing at the United Nations Environment Assembly (UNEA), where many member states are stressing the importance of clarifying concepts

The transition to package-less and reuse systems requires significant changes in consumer behaviour. However, private-sector practices, the existing retailing infrastructure, and a wide range of governmental incentive structures and policies are still needed. Governments play an integral role in enabling, building, and managing infrastructure, which is critical to establishing reuse systems that are economically and environmentally superior to single-use systems.

Infrastructure types [2]:

Physical infrastructure: includes the various back-end functions needed for recapturing the value of packaging-less and reuse systems through its collection, cleaning, and redistribution into the forward supply chain.

Soft infrastructure: it refers to the various means by which governments provide a regulatory platform for packaging-less and reuse systems in areas such as data pooling, container labelling, deposit-scheme management, communications, and education.

Besides the above measures, the transition to package-less and reuse systems also brings significant changes to the supply chain, for instance:

- The bulk sales format demands a review of the storage methods at the distribution centres, where equipment is needed for loading and unloading at the distribution centres and the stores.
- The process of stocking supermarket counters, ensuring compliance with health regulations.
- In the case of refill stations, the equipment must be considered, sometimes heavy, and large machines.
- Rethinking the stages of the supply chain is crucial for reuse strategies to become scalable. In this sense, a circular economy can help companies to rethink their supply chains and business models.

The supply chain should also be able to answer demands that may impact customers:

- How many refill machines are needed to avoid supermarket queues with people waiting to fill the bottles?
- How many extra staff will supermarkets need to deal with any problems with refill machines or to carry out bulk sales?
- Which retailers have enough available shop space to have several refill machines?

Packaging-less and reuse strategies can be a trade differentiator. In short, a source of competitive advantage, providing prowess, does not change the fact that the demand for packaging is derived from the need for the contained product. However, standardising reusable packaging can underplay its complexities. Standardisation often is targeted at tertiary packaging. However, primary and secondary packaging also provide opportunities. The necessary recognition for policymakers is increasing. Standardisation, therefore, is not merely a process of eliminating existing variety. On the contrary, it should also be proactive and standard fare in designing and redesigning bulk containers, for example. The smaller the differences, the larger the opportunity to accommodate multiple reuse applications.

Key messages

A. Recycling, reuse and reduction of plastic production:

- Focusing on diversion from landfill meant a focus primarily on recycling. In turn, the emphasis on recycling enabled a thriving and ever-expanding environment for disposable products.
- Developing countries are no strangers to reusing models, and uptake of such systems can be accelerated with policies incentivising their adoption while mandating a reduction of plastic production and use.
- The reuse strategy promotes and encourages the sale of reusable containers, especially non-plastic containers, avoiding the problems associated with disposable plastics substitutes.
 - Reuse strategies should have the potential to create jobs at local level. Therefore, the informal waste sector should be involved in the process of developing an efficient and well-managed packaging reuse systems, ensuring a fair and inclusive transition.
 - Reuse strategies should decrease public administration spending on waste management.

- Standardisation of reusing packaging in B2B
 (i.e., pallets, crates, dunnage, drums, intermediate bulk containers, and big bags) allows for automatisation and cost reduction.
- Products that are trading internationally should be designed to be reused and to use fewer raw materials in their life cycle. In this sense, eco-design and LCA are tools that can assess raw materials use and evaluate product environmental impacts.

B. Circular economy versus recycling economy:

The absence of definitional precision, in combination with specific weaknesses in the for mulation of targets, leads to a problem in which companies talk about a circular economy while implementing a recycling economy.

- Companies prioritise recyclable packaging over package-less or reusable products, especially in the food sector.
- Companies must develop capabilities to understand regulatory measures, scope, application, and implications for their business and customers regarding plastic pollution. They must keep track of changes and remain compliant to thrive.
- Package-less and reuse systems must be designed with the local context in mind. They must guarantee affordability and accessibility for low-income communities.
- Package-less and reuse strategies need to be scalable. Thus, reuse models must consider consumer behaviour and address their needs.

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This policy brief encapsulates the overarching points made by QUNO's more comprehensive report on the topic. **Please scan this code to access the detailed report:**





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