

Debunking common myths about food hygiene, food waste, and health concerns related to reusable packaging

When it comes to packaging for food and beverages, misconceptions about its relation to food hygiene, health concerns, and food waste have been spread by the interested industry for some time. Those concerns were raised especially in the current debate on the revision of the Packaging and Packaging Waste Regulation (PPWR). As such, this factsheet aims to bust some of the most common myths.

MYTH #1: SINGLE-USE PACKAGING REDUCES FOOD WASTE

Packaging producers have repeatedly claimed that single-use packaging, small portion size, and wrapping vegetables would help reduce food waste. While some packaging can contribute to increasing the shelf life of products by, e.g., making refrigeration unnecessary, a recent UNEP study found that: **'Wherever the food type allows it, food should be sold unpackaged or in reusable packaging, as this is almost always environmentally preferred to food in single-use packaging.'** The authors recommend using packaging mainly to preserve fresh meat. ^[1] Hence, if packaging improves the overall environmental footprint by protecting the food, reusable packaging is a solution preferable to single-use.

In EU households, **food waste and plastic packaging waste have increased simultaneously over the past two decades** (Figure 1). ^[2] The additional packaging has so far failed to reduce household food waste since some consumer behaviour resulting in food waste such as over-purchasing, preparation, and storage of food are independent from packaging design. **In some cases, packaging can actually increase food waste during processing: practices such as trimming, multipacks and portion size can generate additional food waste during production.**

FIGURE 1 – HOUSEHOLD FOOD AND PLASTIC PACKAGING WASTE IN THE EU-28 (MILLION TONNES)

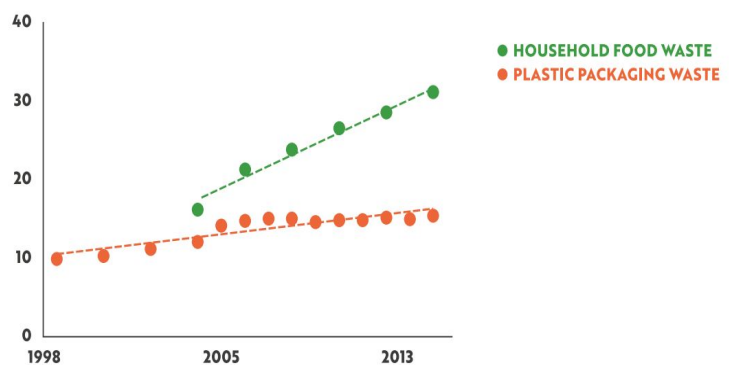


Figure 1 – Household food and plastic packaging waste in the EU-28 (million tonnes)

A study of plastic packaging LCAs found that they often don't take into account the positive effects of short food supply chains, package-free solutions, and reusable packaging. In many cases, the packaging primarily fulfils a marketing function. [3]

Food packaging will not be able to lower the high amounts of food waste in Europe, instead, food waste must be addressed across the whole supply chain as it has diverse drives. Instead of wrapping food in ever more plastic, we propose to introduce binding food waste reduction targets (50% reduction of food loss and waste by 2030) in line with the SDG 12.3. [4] This process must include food waste at farm level which is underestimated and currently excluded from the EU methodology to measure food waste. Binding target will incentivise member states to act decisively on food waste reduction at all stages of the supply chain and good examples from industry leaders, [5] countries like Italy, [6] and municipalities like Milan [7] and Catalonia [8] have proven that waste reduction is possible with the right policies in place.

MYTH #2: SINGLE-USE PACKAGING PROTECTS OUR HEALTH

Growing evidence shows that many single-use food contact articles made of plastics, paper and cardboard pose direct health risks to consumers because they may contain hundreds of harmful or potentially harmful chemicals that migrate to the food and end up in the consumer's body. [9] 388 different chemicals that may be present in food contact materials (Figure 2) are classified as the most harmful chemicals according to the EU Chemicals Strategy for Sustainability (CSS) because they are carcinogenic, mutagenic, toxic to reproduction (CMRs), persistent and bioaccumulative, and/or endocrine-disrupting chemicals (EDCs). [10]

Human biomonitoring studies in the EU show that food packaging is one of the most significant sources of exposure to endocrine disruptors such as BPA and phthalates in children and adults and point to a growing number of different hazardous chemicals found in human blood and body tissue. [11]

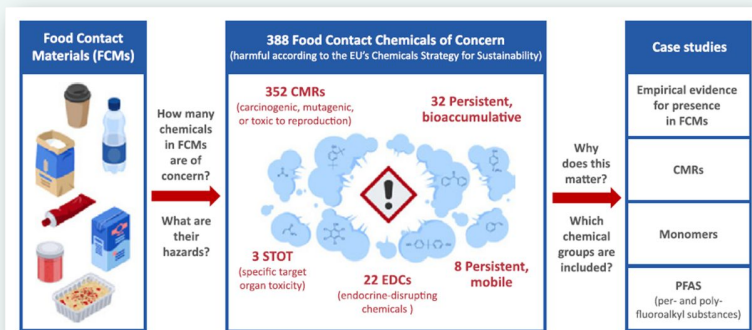


Figure 2 - The most harmful chemicals that may be present in food contact materials (Source: [HERE](#))

Repeated daily exposure to these chemicals may contribute to serious human health risks such as decreased fertility, obesity, diabetes, and even long-term hormonal cancers. Additionally, **the risk arising from recycled plastics, paper and cardboard in food packaging is often underestimated, proving that increased recycling of single-use packaging is not a viable solution to the European and global waste and health crises.** [12] [13]

MYTH #3: REUSABLE PACKAGING IS NOT HYGIENIC

When it comes to food safety and hygiene of reusable packaging, the allegations from single-use packaging proponents cannot prevail. First of all, the food hygiene legislation (Regulation (EC) 853/2004) already regulates this practice as it covers all aspects of hygiene in all food businesses. The regulation specifies that reusable containers and packaging (including material used for wrapping and packaging) must be kept clean, and if necessary disinfected, in order to avoid contamination. Therefore, businesses selling food in either reusable or single-use packaging must comply with such requirements.

Taking a closer look at the different models of reuse, namely, 'refill' (consumers bringing their own packaging and refilling it in shops) and 'systems for reuse' (packaging is owned by a business and inserted into a system that operates with a full logistic of distribution, return, washing, collection, etc.) [14] allows us to debunk claims about poor food hygiene. **When it comes to 'systems for reuse', there is an infrastructure and reverse logistics for the packaging in place which is rather industrialised with standards for hygiene throughout the whole process (distribution, take-back, washing and refilling of the packaging). This is already widespread in the beverage segment in many Member States for water, beers, juices and others. In France, well-working solutions for the industrial washing of reusable secondary and tertiary packaging for the food industry (fruits, vegetables, meat, fish, bakery, etc.) proved to work at scale. [15]**

Regarding the 'refill' model, under which the consumer brings their own containers to the shop, rules to guarantee hygiene and exemptions on the liability of the shops are a good practice. This was also included in the Commission's proposal for the revision of the Packaging and Packaging Waste Regulation.

Finally, **it is crucial to emphasise that there is a longstanding and remarkable history of reusable packaging used for generations around the world to transport dairy, meats, seafood, fruits and vegetables, grains, and other foods.** Reusables are therefore not new in the consumer goods sector – including the wider hospitality and food services industries in Europe. Notably, hygiene, health and safety questions around reusables were put into the spotlight by COVID-19. In some cases, food retailers decided to (or were forced to) temporarily suspend reuse/refill options for their customers when the pandemic hit. The health experts however reconfirmed the safety of reusables when employing basic hygiene rules, even in light of the pandemic. [16]

MYTH #4: RECYCLING WILL SOLVE A WASTE PROBLEM

Today, the main focus for the industry is ensuring that packaging is collected for recycling, and on solutions such as chemical recycling promoted as a technological innovation that could enable recovering of problematic plastic waste streams. We need however to recognise that even though recycling can improve – **recycling has its limits** and cannot meet all the demand, can be a distraction in the fight to reduce waste because it perpetuates the throw-away culture, and all together it leaves many sustainability challenges related to packaging unsolved.

Current levels of resource use, even when pushing recycling and decarbonisation to the extreme, are incompatible with the climate agenda. [17]

Most statistics available on the recyclability of packaging are inaccurate, as they do not reflect the real conditions of the sector and vary greatly between countries. In most cases, waste management infrastructures lack the capacity/capability to deal with different packaging formats. The greater the mix of materials within the packaging, the lower the overall quality of the recycled material. Currently, most single-use packaging placed in the EU market is made out of different materials and/or layers that cannot be recycled together. The presence of many chemicals in packaging along with food leftovers also hampers recycling. Furthermore, current recycling statistics do not take into account inappropriate disposal (littering) while including packaging shipped outside of EU territory, where safe and effective recycling and traceability cannot be guaranteed.

A recent study on composite paper packaging [18] reveals that paper composites create more packaging waste. According to it, 'on average, paper composites require 40 percent more material to pack the same amount of products. It is expected that by 2025, paper composites will generate a total of 25 thousand tons more waste.' It also shows that 'the actual recycling of the fibre content is currently lagging behind the theoretical recyclability and the increasing proportion of composites is causing problems in waste paper recycling'.

When it comes to plastics, though there are around 79 plastic material types commercially available on the market, only a handful of polymer types are actually recycled. Europe achieved an overall plastic recycling rate of 23%.

In Europe, decades after the launch of the first recycling system, still **only about 40% of plastic packaging is reported as recycled**, with the rest going to landfill or incineration. Estimates state that the effective recycling rate, i.e. **the substitution rate of recycled plastic or the ability to replace the production of virgin equivalent plastics, is closer to 10%**. In addition, one third of plastic packaging destined for recycling is still shipped outside of EU territory, where effective recycling and traceability cannot be guaranteed.

According to estimates, 95% of the value of plastic packaging material, i.e. between EUR 70 and 105 billion annually, is lost to the economy after a very short first-use cycle. **This system is unsustainable.** [19]



Plastic Waste Recycling Figures(2022). Source: ECOS

Figure 3 - Waste recycling figures (2022). Source: ECOS



Plastic demand (2018) in million metric tonnes. Source: ING

Figure 4 - Plastic demand (2018) in million metric tonnes. Source: ING

A number of recent reports and studies conclude on the **failure of voluntary commitments made by the world's largest companies to meaningfully address the plastics crisis through focus on recycling of packaging**, over reduction and reuse. [20] [21] A report by the Ellen MacArthur Foundation and the United Nations Environment Programme revealed that some companies are in fact using more virgin plastic despite a pledge to reduce its use. [22] Also, Investigative journalism by Deutsche Welle (DW) [23] recently showed that two thirds of pledges related to packaging from European food and drink companies have either failed or been dropped.

Recycling plastic is simply not a solution to our overuse of natural resources, nor an effective measure to reduce packaging waste. There is also literally no way that we can clean all our rubbish or build enough recycling infrastructure to handle the growing material input until we actually start designing and using things fundamentally differently. Recycling does, however, have an important role to play in closing the loop, once prevention and reuse options, such as refillable packaging, have been exhausted.

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Zero Waste Europe is the European network of communities, local leaders, experts, and change agents working towards the prevention and elimination of waste in our society. We advocate for sustainable systems; for the redesign of our relationship with resources; and for a global shift towards environmental justice, accelerating a just transition towards zero waste for the benefit of people and the planet.



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