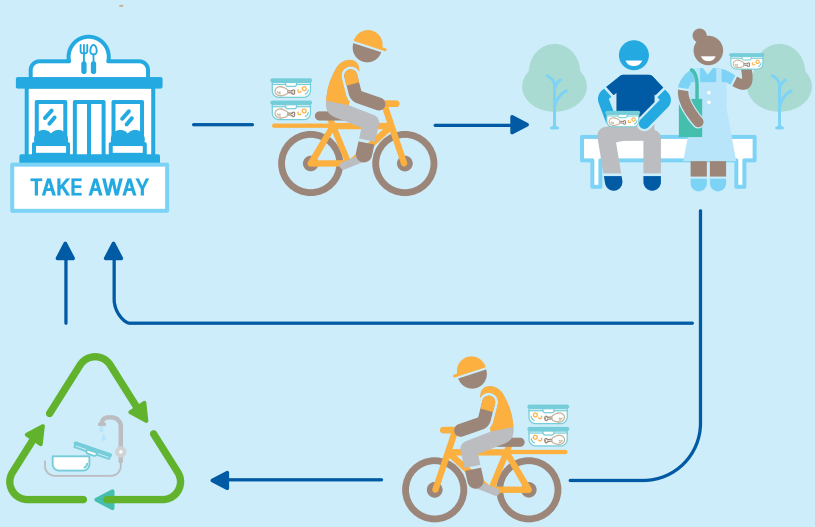
How to Promote Reusable Packaging in Food Delivery and Takeaway



A Practical Guide for Businesses and
Concrete Recommendations for Policymakers

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Transport, Environment, Energy, Water in Asia

Contents

Executive summary

The **rapid growth of single-use plastics in food delivery and takeaway** during the last decades might be an interlude in history. Recent public policies around the globe envisage to **phase out certain single-use plastic products** such as cutlery, straws, stirrers, plates, bags, cups and food containers. Based on examples from Asia and Europe, this guide provides orientation and practical examples for businesses and policymakers about how reusable packaging can celebrate its come-back and contribute to cost savings, waste prevention and healthier air, soil, water, and marine environments.

Restaurants, takeaway vendors and stores increasingly participate in reuse networks, offer reusable packaging or encourage 'bring-your-own' by customers. Each time they hand out or refill reusable food and beverage containers, cutlery, straws and bags, they can save money otherwise spent on buying single-use products. Switching from single-use to reuse means to slightly adapt operating procedures and communication with customers, while continuing to ensure hygiene standards. Clusters of food and beverage vendors in food courts, markets, canteens and at events can also develop their reuse systems or join reuse networks.

Reuse network operators seek to introduce reusable food and beverage containers in good quality across different restaurants and other takeaway vendors and organise their return systems. Business models consist in paid subscriptions by either restaurants and vendors or by private customers (citizens). Additional services may include washing in centralised cleaning facilities, selling reusable containers and offering advice. They focus on marketing and partnerships to increase their networks, designing good quality containers with manufacturers, and creating incentive systems for customers to return empty containers.

Online food delivery platforms start to use their leverage to encourage reuse by customers, restaurants and takeaway vendors to ensure the social acceptability of their business. They can programme reuse options into their platform interface and partner with reuse network operators. In exchange with transport providers, they can also contribute to optimise transport logistics and switch from single-use to reusable bags.

Policymakers in cities, provinces and at national level can create a policy framework and incentives to also promote reuse in food delivery and takeaway. They thereby contribute to regional and international policy efforts to reduce plastic waste leakage into the environment. Based on the analysed examples, they can apply a mix of policy instruments:

- Apply the 'waste hierarchy' and '3R' (reduce, reuse, recycle)
- Create a voluntary agreement with the food delivery and takeaway sector
- Phase out certain single-use plastics
- Oblige restaurants and takeaway vendors to offer reusable packaging
- Support innovation and start-ups to create reuse systems
- Inform, campaign, educate and enhance awareness
- Promote reuse through green public procurement
- Ensure health and food safety standards
- Develop design guidelines and standards for reusable packaging
- Make producers responsible

Introduction

Where to start?

This guide focuses on options to promote reusable packaging in food delivery and takeaway (sometimes also called "multi-use packaging"). If you want to **learn about business models and get inspired by best practices**, you can start with **Part 1**. Depending on which type of business you work with, you might want to focus on the respective section, keeping in mind that the different stakeholders in food delivery and takeaway are interconnected and exchange is necessary. If you are more interested in **public policies**, you can directly jump to **Part 2**. It includes a list of recommendations as well as policy examples from different countries in Asia and Europe.

Why reading this guide?

If you work in food delivery and takeaway, this guide will provide you with some ideas, information and practical examples on how you can save money and protect the environment by reducing single-use plastics in your business.

If you work in public administration, it offers recommendations on how you can contribute to public policy goals on waste minimisation in your country, province, or city. You will find concepts and best practices for introducing and expanding reusable cups, food boxes, cutlery, and bags in food delivery and takeaway.

Why focusing on food delivery and takeaway?

You have probably observed the **increasing trend towards food delivery and takeaway** over the last years. People buy prepared meals and drinks on their way to work, during leisure activities or before returning home. They go to street food stores, night markets, food courts, restaurants or fast-food chains. It has become part of urban lifestyles, characterised by time pressure, and goes across income levels.

More and more vendors also deliver at the place and time of their customers' choice. Internet and smartphones have paved the way for **online food delivery platforms**. They serve as virtual marketplaces between customers and restaurants and gain visibility through extensive marketing as well as their fleets of delivery professionals on bicycles or motorbikes with branded clothing and shoulder boxes. Digitalisation has also reached farmers' markets and supermarkets that have started to offer online ordering and home delivery services.

The **COVID-19 pandemic** has amplified this trend. While eating out has been temporarily forbidden or restricted in many countries, food delivery and takeaway options continued to be available and have been an essential strategy for restaurants to survive. An increase in takeaway, food delivery and e-commerce could be observed, for example, in China, Germany and Thailand as well as across other countries in Asia and Europe.[1]

This trend has led to a **growing consumption of single-use plastics**. To transport prepared meals and drinks and contain their heat or cold, they are packed and wrapped in boxes, plates, cups, bags and foils of different types, sizes, and colours. Straws and cutlery are also often added automatically to each order.

Why reducing single-use plastics?

Single-use plastic cutlery, straws, bags, food containers, plates and cups are **a waste of valuable resources**. They are produced of oil but only used once before being thrown away. After their use, they often contribute to the pollution of air, soils, water and oceans as only a minor part enters recycling value chains to become new products. Many single-use plastics end up on landfills, in incineration plants or in the environment.

Marine plastic litter can threaten the biodiversity and negatively impact the fisheries and tourism sectors. For example, marine wildlife from birds to dolphins and mussels can get entangled in marine plastic litter or ingest it. In addition, plastics degrade into smaller particles over time, with microplastics entering food chains.

Many **policies to reduce single-use plastics** have therefore been developed. They reach from the international level of the United Nations to regional organisations such as the Association of Southeast Asian Nations (ASEAN) and the European Union (EU), national governments as well as individual provinces and cities. Some policies include bans of certain single-use plastics, while other measures incite businesses to reduce waste by switching to alternatives.[3]

Why opting for reusable packaging?

Thus, we now face the **question how to replace single-use plastics** in food delivery and takeaway. One obvious option is reusable packaging. It has existed already before the emergence of single-use plastics and you are familiar with it at home, in restaurants and in canteens.

'Reuse' can be applied as a strategy next to 'avoiding' certain single-use plastic items in food delivery such as straws, cutlery and small packages of seasoning as customers usually have them at home. 'Reuse' is also an alternative or complimentary approach to switching to packaging made of other natural or single-use materials such as paper/cardboard, agricultural residues, seaweed or bamboo. What needs to be kept in mind is that other single-use materials than plastics also cause environmental pollution and greenhouse gas emissions during their production and disposal.[4] Claims of 'biodegradability' and 'compostability' in addition require clear standards and communication to avoid confusion.

To **apply reusable packaging** to today's operations in food delivery and takeaway, some innovations have been made concerning reusable packaging design, take-back systems, and business models.[5] You will get to know some of them throughout this guide.

Opting for reusable packaging has **economic and environmental advantages** compared to single-use materials. One reusable food container or cup can replace more than 100 single-use food containers and cups depending on their quality and how often they are effectively reused. This saves money and reduces waste.

GOOD TO KNOW

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PART 1

Guide for Businesses

1. Restaurants and Takeaway Vendors

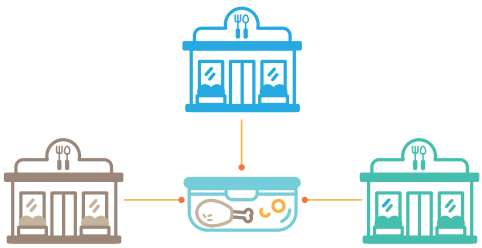
Getting started: How you can promote reuse

Restaurants and takeaway vendors have several options to switch from single-use plastics to reusable packaging. Depending on your type of business and context, you might want to choose one or several of them or start with an option and then add or change later.

Participating in a reuse network (see section 2) can be a cost efficient and convenient way as the same types of reusable packaging and publicity are used across several restaurants and takeaway vendors. In such a network, customers can return empty cups and food containers to the participating restaurants and vendors.

Creating isolated reusable packaging **solutions just for your own restaurant or store** can be a first step if a reuse network does not yet exist in your area. Encouraging **customers to bring their own** reusable bags, straws, cutlery as well as cups and containers for refill is also something that you can implement directly.

Reuse options for restaurants, takeaway vendors and stores



Participate in a reuse network

Individual restaurants, takeaway vendors and stores join an existing reuse network and use cups and food containers of it. They either wash returned food containers and cups by themselves or pay for the washing service in a professional cleaning facility. There are different business models of such reuse networks (see section 2).

Offer your own type of reusable packaging

Restaurants, takeaway vendors and stores come up with individual solutions to offer reusable cups, food containers, cutlery, straws and bags to their customers. They take them back, clean them and use them again. If food is not consumed on site within the premises of the restaurant, restaurants need to invent incentives for consumers to bring back empty cups and food containers. Such incentives can be monetary: customers pay for the cup or container in addition of the price for the meal or drink, and they get this additional money back when they return them ('deposit-refund').

Encourage 'Bring-Your-Own' by customers

Individual restaurants, takeaway vendors and stores accept reusable cups and food containers as well as cutlery, straws and bags brought by their customers. They inform their customers about acceptable types of cups and containers and how to handle them in a hygienic manner. They also can encourage their customers through offering discounts for bringing their own reusable cups and food containers.

EXAMPLES FROM PRACTICE

Reusable pintos in Thailand

'Pintos' are **traditional Thai lunch boxes** made of metal. They have been used by citizens and monks to transport home-cooked meals. More recently, pintos have also been applied in the food delivery and takeaway sector.

One example is the RISE Café in Bangkok.[6] During the COVID-19 outbreak and following restrictions for on-site service in restaurants in 2020, the café switched to the food delivery business through direct contacts with customers. To avoid single-use plastics, the café tested first lotus leaves, watermelons, and pineapples as **natural packaging.** For practical reasons, they then introduced pintos for food delivery. Customers usually subscribe to a five-days delivery plan to their home or office or also to events. Drivers bring the full pintos and take the empty pintos back to the café.

Another example in Bangkok is the catering service KeawKeaw, which innovates in new packaging options by using pintos, organic wrapping with natural materials as well as degradable containers to reduce plastic packaging and food waste. After testing several options for more sustainable packaging and challenges in finding fitting materials and producers, the catering company now provides for example banana leaves wrapping, as it was used in former times. The banana leaves are ordered directly from producers and can be used as wrapping for long distance transports.

In Phuket, the Phuket Environmental Foundation launched a Plastic Packaging-free Restaurant Model with 15 restaurants in September 2021. They test ways to replace single-use plastics packaging by applying for example Pintos. The activity is part of the "Less Plastics in Phuket" pilot project, funded under the 'Rethinking Plastics – Circular Economy Solutions to Marine Litter' project.

Saving money: How you can reap benefits from reuse

Switching from single-use plastics or other materials to reusable cups, food containers, cutlery, straws and bags **saves money**. Every time restaurants, takeaway vendors and stores as well as their customers reuse them, they save the costs for purchasing the equivalent number of single-use items they would have needed to buy. The exact cost savings depend on the purchasing or renting costs of reusable packaging, the number of times they are reused as well as the current costs of single-use products with which reusable items compete.

All you need to do is to come up with an **initial effort** to participate in a reuse network or start an individual solution if such a network is not yet available. Joining a reuse network would be easiest and most cost efficient as all logistics, procedures, information materials and the reusable food containers and cups are provided. Depending on the business model of the reuse network, you need to buy an initial stock of reusable food containers and cups, which you can consider as an investment that rapidly pays off. During your normal business operations, you will sell them to customers and buy them back in a deposit-refund logic. If necessary, assisting with such initial investments could also be a role of public agencies in cities or non-governmental organisations that can provide small grants or microcredits.

Taking back and washing reusable food containers and cups requires **working time** of your staff. How to organise operational procedures efficiently is a question that each restaurant, takeaway vendor and store already faces in its daily business. Single-use plastics might look easier at first sight – but do not forget that single-use plastic items constitute a constant cost-stream that you could avoid by switching to reusable packaging. Single-use plastics also generate other costs for waste collection, landfilling, incineration or even end up in the environment, harming wildlife and our health. By switching to reuse, you might even benefit from a greener image and higher customer loyalty. Some reuse networks also offer professional washing of cups and food boxes in a central cleaning facility.

Saving money by switching to reusable food containers[7]

GOOD TO KNOW

Single-use plastic food containers (vendor buys them)	Reusable food containers (vendor participates in a reuse network)
260 opening days per year x 20 single-use food containers per day x 0.15 € per single-use food container **= 780 € per year (for 5,200 containers)**	300 € 'all inclusive' subscription fees per year + 50 reusable boxes bought as initial stock x 5 € per reusable box (deposit level) **= 550 € per year**

With these assumptions, you can save 230 € per year in material costs – but calculate for yourself!

You can **calculate the cost savings** by using your typical market prices for single-use plastic containers for food. The example assumes that the business switches 100% to reusable boxes. In practice however, reuse might represent only a certain percentage at the beginning while some meals continue to be served in single-use packaging. You can consider this in your calculations. This calculation example shows savings in material costs. Indirect costs of working time for initial efforts and washing are not considered in this calculation.

Single-use containers (left side):

- **Opening days and number of single-use food containers per day:** How many days is your restaurant or store open during the year? How many single-use containers do you serve per day? This helps to calculate the total amount of single-use containers per year. The example uses an estimation of 260 opening days per year and a turnover of 20 single-use plastic food containers per day. In practice of course, restaurants and vendors might need many more containers or less.
- **Costs for single-use containers:** How much do you usually pay for a single-use container? Prices might vary between different materials and types of containers. Cups are usually cheaper than food boxes. The example uses an estimated cost of 0.15 € per food container. In practice of course, food containers in your marketplace might be more or less expensive.

Reusable containers (right side):

- **'All inclusive' subscription fees in reuse network:** How much do you pay for being part of the reuse network? This subscription fee finances the costs of the reuse network provider for creating a network, publicity to customers, improving the design of standardized reusable containers, organising the logistics for exchanging containers between participating restaurants, etc. In the assumed 'all inclusive' subscription, the exchange of old containers and of containers between restaurants is included. In the example, the annual 'all inclusive' subscription cost is estimated at 300 €. However, this can vary between reuse networks. We assume that with the 'all inclusive' subscription the restaurant only needs to buy an initial stock of reusable containers, which are then handed out against a certain deposit amount and bought back again from customers in a deposit-refund logic. This is the reason why an initial stock of 50 reusable containers can replace 5,200 single-use containers in a year (each container of the initial stock would be reused 104 times). But keep in mind that the containers circulate between different participating restaurants and vendors.
- **Purchase of reusable boxes:** How much do you pay per reusable box? Depending on the business model of the reuse network provider, you might need to buy an initial stock of reusable containers. During operations, customers take and return such containers. In case of shortage, the reuse network provider brings you containers. With 'all inclusive' subscriptions, the reuse network also exchanges heavily damaged containers (e.g. if they have been reused 100 times or more). The example assumes purchasing costs of 5 € per container and a need of 50 reusable containers as initial stock. In practice, the price can be higher or lower than 5 €. In the example, we assume that the price is similar to the deposit that customers will pay and get back upon return.
- **Additional costs not shown:** The example does not show any potential additional costs such as for working time for washing the containers. It is assumed that washing takes place within the restaurant with the normal working time of staff members. However, some reuse network operators also offer washing services in central cleaning facilities, which might be calculated as a separate cost factor or lead to a higher 'all inclusive' rate.

Introducing change: How you can adapt your operating procedures

Depending on your existing operating procedures, you might need to make some **slight changes** in how your staff is serving food and drinks. It requires training for your staff and information to customers. At first, you might want to try out serving food and drinks in reusable cups and containers while continuing to offer single-use plastics or other single-use materials for a while until your staff and customers are familiar with it.

Serving food and drinks in reusable cups and containers is not different to single-use plastics. Your staff needs to have a stock of reusable containers and cups ready to fill in drinks and food upon the order of customers. Usually, they come with attachable lids so that they can be closed and also be used for delivery.

A difference during **serving** food and drinks is that you either take additional money from customers as a deposit for the reusable box and cup or scan a QR code of the customer to register the borrowing of containers. If you have very frequent interactions with the same customers, money could also be replaced by specific tokens as a deposit. In case that customers bring their own cups or food containers, no deposit or QR codes are necessary as the container stay in possession of the customers.

When customers **return** reusable containers and cups at your restaurant or store, your staff needs to be able to reimburse them a deposit or scan again a QR code. Your staff then either washes the food containers and cups in your restaurant or store for its next reuse or collects them separately to be picked up by a reuse network operator for washing in a central cleaning facility. Whatever is more efficient depends on your respective context.

In terms of process efficiency and convenience, **the design of reusable boxes and cups** is important. They need to be easy to handle, stable and stackable so that they can be reused many times, used for takeaway and delivery and do not take too much space in your restaurant or store and during transport. Participating in a reuse network with good quality containers and cups is therefore an advantage. Investing in good quality containers saves in the end more money.

EXAMPLES FROM PRACTICE

Reusable packaging in a ‘zero waste’ store and at a street food stall in Germany

Founded in 2019 by three dedicated women, the shop ‘Gramm Genau’ in Frankfurt am Main aspires to offer organic and socially fair produced food by avoiding single-use packaging and food waste. **Customers buy food products in reusable containers**, which they either bring themselves or borrow from the shop through a deposit-refund system with reusable glass containers. Products can either be ordered online or directly be bought in the shop.

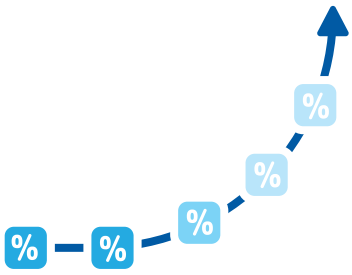
The **shop’s staff fills the food products** into different containers, calculates the weight of the products and containers and thereby determines the price. The best before dates and information such as cooking time are indicated on big storage boxes. The store sells cakes and meals from a nearby organic bakery and caterer, which are transported by bicycle in reusable transport boxes. It also delivers products to customers via cargo bicycles. In addition, ‘Gramm Genau’ offers snack boxes for offices and organises workshops for interested citizens to share practical knowledge about waste free lifestyles.[8]

Traditional, tasty **street food in reusable packaging?** ‘De Paelzer Dampfnudeln’ is making it possible. For about three years, two bakers are selling potato soup, vanilla sauce and wine sauce in reusable glass containers at different fresh markets in Karlsruhe, Germany. When customers buy them, they pay a deposit of 1 €, which they get back upon return. The glass containers come from a local trader and some of the customers prefer to keep them for their own self-made jam.

The potato soup and vanilla sauce go along with Dampfnudeln, a speciality of Southern Germany, They are steamed buns made of wheat flour, yeast, eggs and milk, which are similar to the Chinese baozi, Thai Salapao and Philippine Siopao but without any filling. Some customers bring their own containers to transport them home – others get them in paper bags, coated with a thin plastic film to be used for heating in microwaves or ovens. All food ingredients are locally sourced within 50 kilometres except for the vanilla, which comes from abroad.[9]



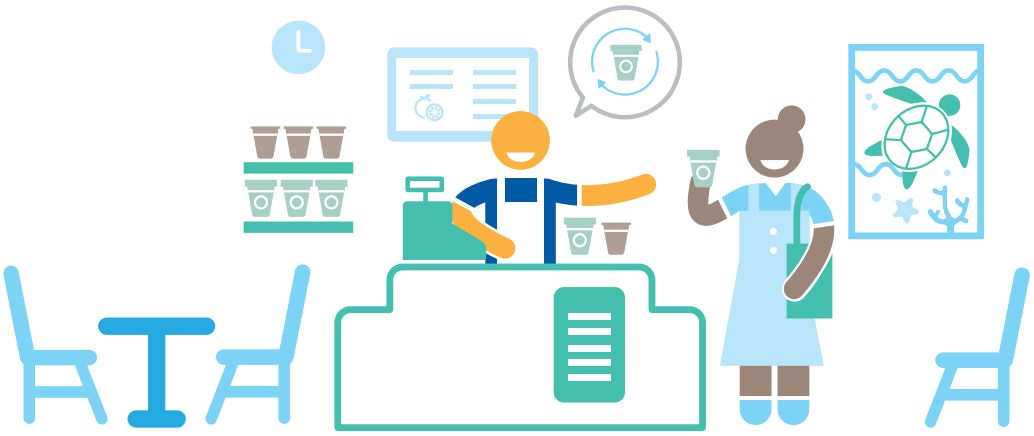

Growing bigger: How you can get customers on board



Customers can choose between different **options to get their food**. They can buy fresh food for cooking at home, eat out or get takeaways or deliveries from restaurants, canteens, and street food stalls. To reduce single-use plastics, customers can choose eateries without plastics or can employ reusable bags, food containers, cups and cutlery.

Customers can follow a 'bring-your-own' logic or ask for reusable packaging at stores and online food delivery platforms and decide, which restaurants and providers they want to support. Reuse can become part of their everyday habits and lifestyle systems if the option is sufficiently promoted, accessible and convenient.

To promote reuse in your restaurant or shop, you need to **interact with your customers**. Some customers might be happy about the switch to reuse and actively support you. Others might need some more time and information to get used to the change. To grow your business bigger, you might want to ensure that you are ahead of your competition, offering safe, more eco-friendly and cost-effective services and products.



Three ways to interact with your customers

1. Reduce uncertainty

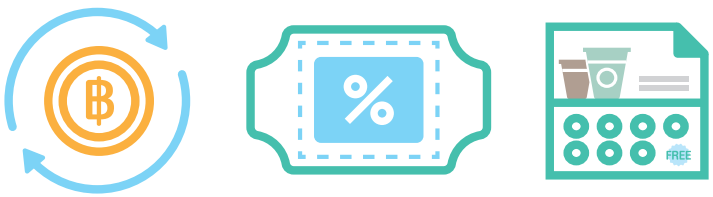
You could put up a poster saying that customers can bring their own containers and cups for refill, including hints to the kind of packaging and hygiene standards they should follow. The poster can also inform about the reuse network in which you participate so that customers know they can get and return reusable containers and cups at your restaurant or store and others that participate. This also attracts customers and makes it convenient for them.

2. 'Nudge' towards reuse

Make reuse attractive to them. For instance, you could position the reusable containers and cups in a visible manner so that customers ask what it is. You could also have your staff ask every time if they want to have single-use or reusable containers and cups and whether they brought their own reusable bag, cutlery and straw. You could also provide leaflets or digital information about the reusable packaging you use or the reuse network in which you participate.

3. Create incentives

For instance, you could introduce discounts for customers that choose reusable packaging. To incentivise the return of empty containers and cups, monetary deposits usually do the trick. Some reuse networks that are based on customers paying membership fees do apply payments by customers for unreturned containers instead of deposits.



EXAMPLES FROM PRACTICE

‘Wala Usik’ – plastic waste free sari-sari stores in Negros Island, Philippines

The Philippines have about **800,000 ‘sari-sari’ stores**, little stores that sell products in small portions to low-income families who purchase their products incrementally. This consumption pattern causes significant amounts of single-use packaging waste, which is usually not recyclable because of their material or the lack of recycling infrastructure. How to switch from single-use to reuse in such sari-sari stores?

In 2018, the Philippine Reef and Rainforest Conservation Foundation Inc. (PRRCFI) launched the ‘Wala Usik‘ project (‘Nothing to Waste”) in Negros Island. It assisted **existing sari-sari stores** in different municipalities to transform their businesses by organising a programme based on design-thinking, prototyping and testing refilling options in the shops. As a result, the shops switched for instance to selling products like rice, cooking oil, soy sauce, soap, and detergents in reusable containers. Awareness raising for communities through clean-ups, waste audits, focus group discussions and events was also part of the efforts. The project also partnered with a multinational brand that tested a dispenser for powdered coffee and creamer in reusable cups in a ‘Wala Usik’ store.

Based on its lessons learned, **PRRCFI intends to continue developing local innovations** which fit to the needs of sari-sari stores, further engaging known brands and micro, small and medium enterprises (MSMEs). It seeks to further develop deposit-return schemes and technologies for refilling, dispensing and reuse. It also wants to cooperate with restaurants, eateries and canteens to reduce single-use plastics. With quantitative and qualitative data, the project aims to understand the supply chain better and recommend upscaling or replication across the business sector.

In this endeavour, PRRCFI receives support from the “Rethinking Plastics – Circular Economy Solutions to Marine Litter” project, which is funded by the European Union and the German Government and implemented by GIZ and Expertise France. In its previous phase, it also received funding from the USAID Municipal Waste Recycling Programme.



Maintaining trust: How you can ensure hygiene

Ensuring hygiene for the **food safety of customers and the permit to operate** is one of the primary concerns of restaurants, takeaway vendors and stores. You need to check the respective requirements of food and drug administrations in your country and city.

Applying reusable glasses, plates and cutlery is already the daily practice of restaurants and canteens where people eat on the premises and proper washing and drying procedures are in place to ensure a hygienic handling. Depending on the context, they wash reusable items by hand or with machines, applying appropriate washing temperatures and detergents.

You can ensure regular **training of staff** in washing and drying procedures as well as in how to take reusable food containers and cups back. A possibility to avoid direct contact with returned containers and cups is to use trays, on which customers put their items. Your staff then takes the tray and puts empty containers and cups into their appropriate places. Such trays can also be used if customers bring own containers and cups for refills with food and drinks.

The **COVID-19** pandemic has created an exceptional situation where everyone needs to ensure taking steps for reducing the risk of transmitting the virus via physical contact or via droplets in the air. Keeping minimum distances to other persons, wearing face masks and regular hand washing have been among the key advice for avoiding transmission of the coronavirus. Specific requirements for restaurants, food delivery and takeaway vary between countries.

Hygiene guidelines for handling reusable packaging

GOOD TO KNOW

The elaboration of hygiene guidelines can provide orientation to restaurants and vendors. At international level, the **World Health Organisation (WHO) has published some guidelines, which are also relevant for hygienic use of reusable packaging in food delivery and takeaway:**

- In April 2020, the WHO published Interim guidance on 'COVID-19 and Food Safety: Guidance for Food Businesses'. It includes information about how food workers can avoid the transmission of the SARS-CoV-2 virus by continuing the supply of food, including during transport and delivery and in canteens.[11]
- In May 2020, the WHO published interim guidance on 'Cleaning and disinfection of environmental surfaces in the context of COVID-19'.[12] It focuses on healthcare settings but includes a paragraph on "non-health care settings environment".
- In 2020, the Food and Agriculture Organisation of the United Nations (FAO) and WHO adopted the most recent revision of the 'General Principles of Food Hygiene' as part of the Codex Alimentarius, whose first version dates back to 1969.[13] It includes general information about aspects such as "cleaning facilities", "personnel hygiene facilities and toilets", "equipment", "maintenance and cleaning", "cleaning and disinfection methods and procedures", "waste management", and "transportation".
- In 2017, the FAO and WHO adopted a 'Regional Code of Hygienic Practice for Street-Vended Foods in Asia' as part of the international 'Codex Alimentarius'.[14] This guidance focuses on 'street foods' defined as "foods and beverages prepared and/or sold by vendors in streets and other places for immediate consumption or consumption at a later time without further processing or preparation". 'Crockery / cutlery' includes "all tools used for food preparation, serving and consumption (whether non-disposable or disposable), and they include glasses, plates, dishes, cups, saucers, spoons, forks, ladles, chopsticks etc.". The document informs about hygienic behaviour of street food vendors, consumers and authorities.

At national level, for instance the **Food Federation Germany has published three guidelines specifically for reusable packaging**. They were released between 2018 and 2021 and focus on reusable cups ('bring your own'), reusable food containers ('bring your own') as well as food and beverage containers in deposit-refund systems across different vendors.[15] The guidelines have been consulted with private sector stakeholders and public authorities in charge of food safety. They include the following recommendations:

'Bring your own' cups and food containers:

- Restaurants and vendors are responsible for the safety of the food and the hygiene of general processes in the restaurant.
- The responsibility for the cleanliness and material of the cups or boxes remains with the customers who bring them.
- To avoid direct contact and potential contamination of store facilities, staff should handle them at specific areas at the counter, e.g. by using trays or cup holders and by decanting hot drinks.
- Lids should remain with the customers.
- If cups or boxes are not clean or suitable in terms of size and material, staff can reject filling them.
- Customers should be informed about the required cleanliness of 'bring-your-own' containers.
- In self service areas, cups should be placed on specific holders to avoid direct contact with filler necks.

Reusable food and beverage containers shared across different restaurants and stores (e.g. through deposit-refund systems):

- Restaurants and stores are co-responsible for the cleanliness and suitability of cups and food boxes.
- Reuse network operators need to ensure that the **containers are generally suitable for food contact** and should **provide guidance** to participating restaurants and vendors in terms of proper cleaning of new and returned containers.
- Serving food and drinks in reusable containers is similar to single-use containers or normal tableware. However, the **take back** of empty containers should be at a specific space in the restaurant or store where customers can put them on a tray or into a basket to minimize direct contact.
- Staff should look at the containers whether they are **very dirty or damaged** and transport them to the **cleaning or pick-up area** if still fit for reuse.
- Take back areas of reusable food and beverage containers should be cleaned more often and if needed also be disinfected.
- The **cleaning and drying** of returned food and beverage containers can take place in the restaurant or store or in a centralised facility. If reusable containers are cleaned in a centralised facility, the reuse network operator is responsible to ensure the hygiene of cleaned food and beverage containers.
- In **restaurants, the cleaning** can take place together with other dishes but might require special treatment in terms of heat, cleaning powder and weight.
- In general, the use of **professional dishwashers** is recommended instead of manual cleaning.
- **During storage**, the containers should not be wet and be protected.

Closing loops: How you can work with food courts, markets and canteens

Your restaurant or takeaway store might be **part of a bigger structure**. Day and night markets, food courts in shopping malls, canteens in schools and offices, and larger events such as concerts, festivals and sports competitions have in common that they are delimited spaces with clear structures and responsibilities. They often comprise several independent food and beverage stalls and therefore provide the opportunity to develop small-scale networks for reusable food and beverage containers.

In many cases, such **structures already have systems** in place with reusable food containers and cups for dining-in. Customers are used to return their empty dishes at collection points after their lunch or dinner. In sports stadiums and at markets, reusable cups with a deposit and specific collection points have also become very common and customers got used to it.

Such structures can **share washing facilities**, which creates jobs and saves money by reducing the need to buy single-use products. The costs of the market or food court operator for collecting and reimbursing deposits can be incorporated into the fees that each food stall pays to the respective food court or market administration. Deposits can be in cash, in the form of specific tokens or electronically via cards often used in food courts.

Canteens, food courts and markets can also **participate in reuse networks** – like individual restaurants and vendors. For customers, this would make it easier to take away reusable food and beverage containers and return them at the same place or another location.

EXAMPLES FROM PRACTICE

Reducing single-use plastic bags in supermarkets and traditional markets in Bandung and Banjarmasin, Indonesia

How to substitute single-use plastic bags in supermarkets and traditional markets? The Indonesia Plastic Bag Diet Movement (Gerakan Indonesia Diet Kantong Plastik–GIDKP) has been supporting approaches in the cities of Bandung in West Java and Banjarmasin in South Kalimantan. Since its first local regulation of 2016, GIDKP has worked with stakeholders in **Banjarmasin** on reducing single-use plastic bags in supermarkets. It assisted with collecting data for impact monitoring of a plastic bag charge trial in 2016 as well as the dissemination of evaluation results in 2020.

In **Bandung**, GIDKP participated in designing draft legislation and facilitating stakeholder consultations with the Bandung Environmental Agency that contributed to Bandung's Mayor Regulation No. 37 of 2019. In 2019, GIDKP supported the Bandung City Government in campaigning and publicizing its Mayor Regulation to contribute to its implementation.

As a **next step**, GIDKP focuses on activities with **traditional markets** together with its local partners. Traditional markets in Indonesia are state-owned or state-controlled establishments that provide a collective space for independent vendors to sell their goods. Such markets are characterized by a high share of businesses, a generation of significant amounts of plastic waste and often poor waste management practices. While campaigns with supermarket chains can reach many stores and cashiers at the same time, traditional markets require a more customized approach. Customer relation procedures can vary from stall to stall, and impact monitoring relies on manual surveys.

Besides plastic bags, **other single-use plastics** need to be targeted in markets, including cups, bags and straws for prepared food and beverages as well as the increased numbers of fresh food that is pre-packed in plastics. Related to the COVID-19 pandemic, online shopping of products from traditional markets with home deliveries significantly increased, accompanied by more packaging waste. In this context, GIDKP conducts baseline surveys, impact assessments and focus group discussions with vendors, customers, reusable packaging providers and delivery platforms. It develops action plans and conducts trainings and outreach campaigns. These activities are supported by the project "Rethinking Plastics – Circular Economy Solutions to Marine Litter" of the European Union and the German Government, implemented by GIZ and Expertise France.

EXAMPLES FROM PRACTICE

Testing reusable packaging at university campuses in Sweden

How to introduce **reusable food containers and cups for takeaway at university campuses?** The IVL Swedish Environmental Research Institute has conducted a research project to test it in five case studies. The project served to evaluate economic and environmental factors as well as behaviour change by stakeholders. It analysed obstacles and formulated policy recommendations for potential upscaling. The researchers found out that a key challenge consists in **investing sufficient time and efforts** to change habits of staff and customers to get the new system going. However, customers tend to have a good feeling of creating environmental benefits once it works. The research project took place between spring 2020 and March 2021 during the COVID-19 pandemic, which led to temporary closures of restaurants and cafés as well as absences of people from universities. Additional tests during other conditions would therefore be beneficial.[16]

Tracking progress: How you can show success

To know whether you have achieved any reduction in single-use plastics and have saved money, you can keep track of **how many times your staff hands out or refills reusable containers and cups**. You could install a simple counting system with a paper or electronic list and keep track of the purchasing of single-use packaging. In some reuse networks with digital devices, this might also come automatically.

The objective is to know how many reusable cups, food containers, straws, cutlery and bags were used by your customers instead of single-use materials within a certain period of time (e.g. a day, a month or a year). If you have **reliable data** for it, you can use them to **calculate your cost savings as well as environmental benefits** such as avoided plastic waste, greenhouse gas emissions and marine litter. However, such calculations also require transparency of the additional assumptions (e.g. CO_2-equivalent factors for plastics or other single-use materials; estimated plastic waste flows towards waste collection and into waterways).[17]

Estimating the reduction of single-use plastics

GOOD TO KNOW

Questions	Before	After
	Day or month	Day or month
1. How many **reusable** cups, food containers, straws, cutlery, plates did you **hand out or refill**?		
2. How many **single-use plastic** cups, food containers, straws, cutlery, plates did you hand out?		
3. How many **single-use** cups, food containers, straws, cutlery, plates of **other materials** did you hand out?		
[Extra: How many ordered meals and drinks did you have?]		

Remarks:

- The questions can serve for creating a **baseline before** introducing a change in your restaurant as well as for **monitoring the effects** of the changes during implementation.
- If possible, you should list the single-use and reusable packaging by different types (i.e. cutlery, straws, food containers, cups, etc.).
- The table leaves **flexibility** as your restaurant or takeaway store might introduce reusable containers but continues to sell single-use containers of plastics as well as of other materials. Over time, the total turnover of sold meals and drinks might also change.
- You can identify how many **single-use plastics you replaced by reusable alternatives**, which can serve as basis for calculating cost savings and avoidance of plastic waste (in number of items and weight in kilogram).
- The extra question can serve to triangulate your data. For example, if you add all food containers of 1, 2 and 3, it should be equivalent to the number of meals in the extra question.

EXAMPLES FROM PRACTICE

Plastic reduced fresh food delivery services and refill shops in Bangkok, Thailand

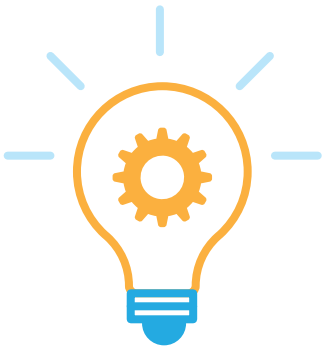
In Bangkok, several entrepreneurs saw the COVID-19 closures as an opportunity for innovation: Beginning of April 2020, the 'Yard Hostel' for example introduced an **online shop and an electric grocery bike** in their neighbourhood of Ari to sell mostly fresh products from nearby shops and restaurants and local farms. The bike had several stops in the neighbourhood and free delivery with returnable packaging containers. When the rainy season started, the staff opened a permanent grocery store with refill options, returnable packaging and products as alternatives to single-use plastics (e.g. for self-made yogurt). In 2021, they stopped the grocery store but kept a refill station for shampoo and selling reusable straws, vegetable nets, cups and similar products.[18]

Another operator in several neighbourhoods of Bangkok is 'Happy Grocers', a social enterprise also running **grocery and delivery trucks** for organic products without plastic packaging since April 2020. In addition, the team organised trips to their partner farms, school activities and workshop related to food, organic farming and plastic reduction.[19]

Other business examples promoting **reuse and refill in Bangkok** include e.g. the zero waste and refill shops 'Refill Station', 'Sunflower', 'Normal Shop', 'ZeroMoment Refillery', and 'Get Well Zone' as well as refill points for drinking water of 'Trash Hero'.[20]

2.
Reuse Network Operators across Restaurants and Takeaway Vendors

Getting started: How you can create a business model for reuse

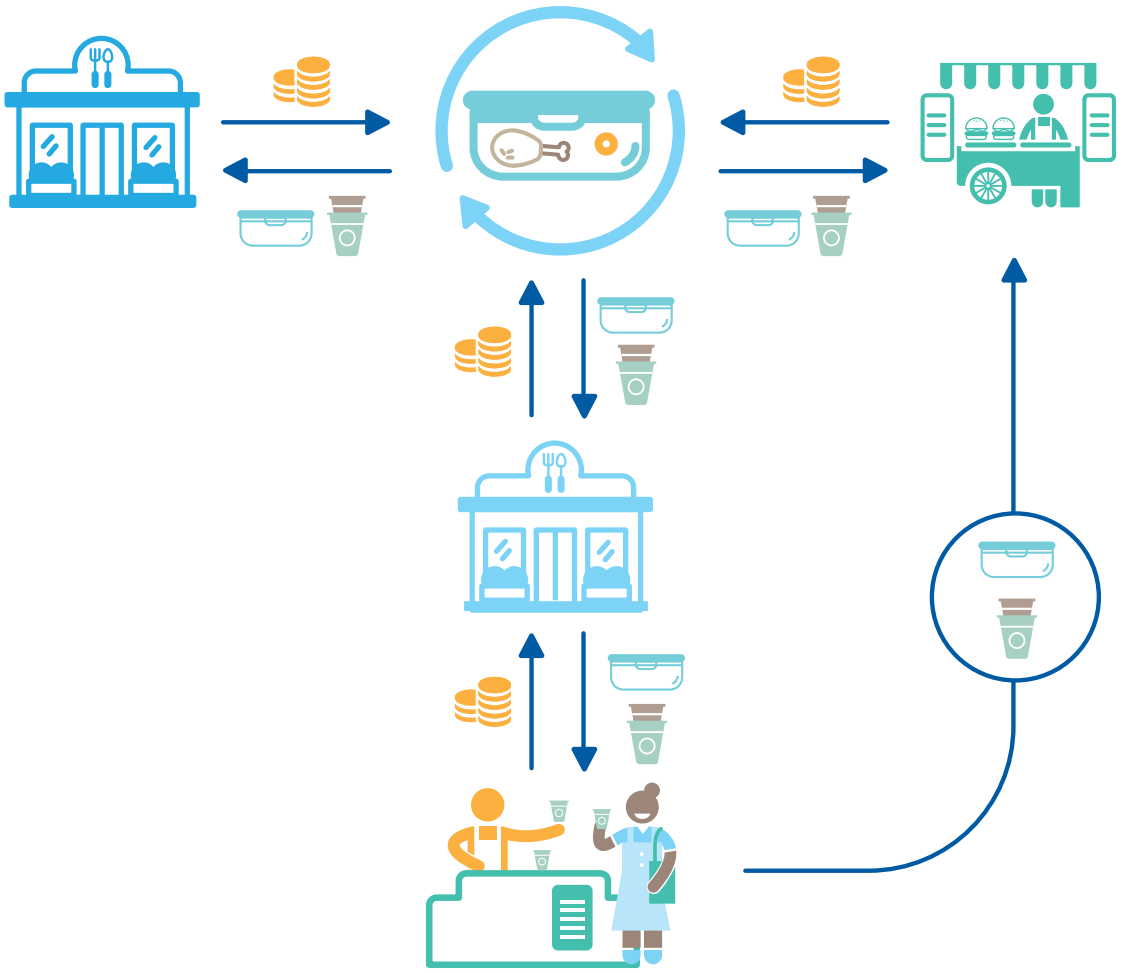


If you work for a start-up company, a public utility company or a non-profit organisation, you might want to seize **business opportunities that create jobs and contribute to environmental protection**. During the last years, several system providers of reusable food and beverage containers have emerged, with different organisational structures and business models. They have in common to provide reusable food containers and cups across different restaurants, cafés and other types of stores that prepare meals and drinks for takeaway and delivery.

While some of them are in **early test phases** with a couple of participating restaurants, others have already developed into **city or country wide networks**. Considering the recent public policies for phasing-out certain single-use plastics such as food and beverage containers, straws, plates, and cutlery and for the promotion of reusable packaging (see section 3), such reuse systems could develop quickly and also start to compete with each other in individual cities. The existing reuse networks apply different business models.

Business models of reuse networks

1. Restaurants & takeaway vendors pay fees to reuse network

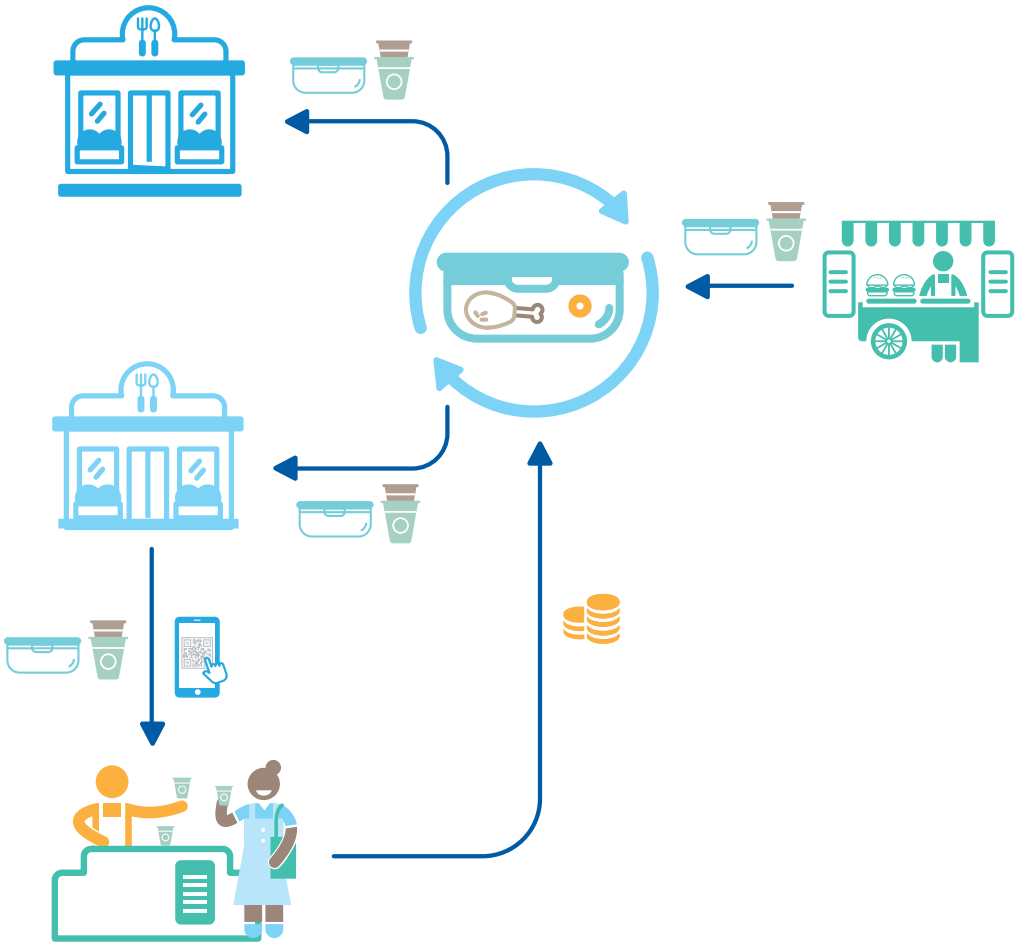


Restaurants and vendors pay subscription fees to the reuse network operator and buy reusable cups and containers from it. Restaurants and vendors hand out the food and beverage containers to customers with a deposit and pay the deposit back upon return ('deposit-refund'). Subscriptions to the network can give the exclusive right to buy, sell and return products of the reuse network service provider, who needs to guarantee the availability of sufficient stocks for delivery within a certain time span. The system works in an analogue and digital manner. It is ready for use without scanning infrastructure.

Customers can return empty cups and containers at any participating restaurant and vendor of the network. Customers do not need to become members or pay any fees except the deposit for the food and beverage containers they take.

Example: reCIRCLE in Europe (and others – the Annex provides an overview)

2. Private customers pay fees to reuse network



Citizens who consume food takeaway and delivery (i.e. **'customers'**) **pay membership fees** to the reuse network operator. These customers can borrow filled cups and food containers from all restaurants and vendors that participate in the reuse network. They do not need to pay deposits but scan QR codes and pay money only if they have not returned empty food and beverage containers after a certain period.

Restaurants and vendors do not need to pay fees but install scanning infrastructure for QR codes of smartphone apps, act as handing-out and take-back stations and follow guidelines.

Example: barePack in Singapore (and others listed in the Annex)

Business models of reuse networks

3. Other business models (e.g. 'pay-per-use')

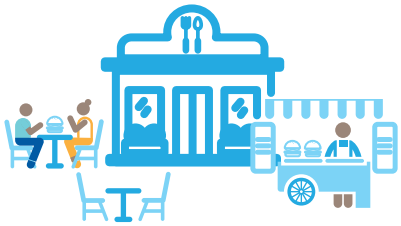
As the development of reuse networks is dynamic, other business models emerge. For instance, some networks start with the **'pay-per-use' principle**, in which restaurants and vendors mainly pay for each time they hand out reusable containers. It is free for customers who need however to register and to pay if they do not return empty containers. This usually goes hand in hand with IT systems, smartphone applications and scanning in restaurants as well as the registration of customers. Further developments and testing of models to balance different aspects of convenience, efficiency, costs, ecological footprints etc. are probable.

Example: Vytal in Germany

Additional services offered by reuse network operators

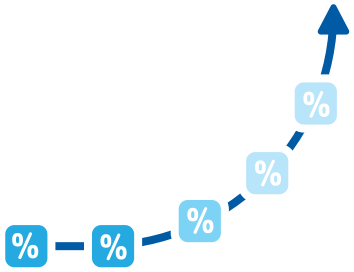
Washing: Some of the reuse networks offer washing services in a professional, centralised cleaning facility, which generates additional income and business activity. This can be an add-on option for participating restaurants and takeaway vendors. Restaurants might prefer to wash returned food and beverage containers themselves.

Selling food and beverage containers: The design of good quality containers and cups is important for the success of reuse. Partnerships with a packaging manufacturer and selling such food and beverage containers can be an additional service.



Offering advice & consultancy: Demand for expertise in how to introduce reuse systems is growing. Food and beverage takeaway chains, supermarket chains, food courts in shopping malls, markets, and event organisers of festivals and sports stadiums might want to introduce own reuse systems and require advice

Growing bigger: How you can build up a reuse network across vendors



One of the **key tasks** as a reuse network operator is to build up a network of restaurants and takeaway vendors that apply reusable food and beverage containers and the reuse concept. The higher the number of participating restaurants and takeaway stores, the more visible the service gets to restaurants as well as to customers, and the more competitive it will be compared to single-use plastics. Reuse also gets more efficient if many vendors apply the same concept and type of reusable food and beverage containers.

Existing reuse service providers have developed **marketing materials, websites, and outreach strategies** for this purpose. They actively approach individual restaurants and takeaway vendors to understand their needs and improve services to them. One key advantage is that restaurants and vendors can save money through joining the reuse network compared to single-use plastics (see section 1). Another argument is that they can contribute to environmental protection and obtain a 'greener' image.

Reuse network operators often list participating restaurants and stores on their websites, sometimes with interactive maps, which creates **publicity** for them. If you want to set up a reuse network, you can also provide posters, frequently asked questions documents and guidelines to participating restaurants and vendors to facilitate information to their staff and customers.

New partner restaurants, cafés and takeaway stores of your reuse network might want to **start with a test period** of several months. During this period, they can test the reusable food and beverage containers with their respective meals and drinks and adapt their operational procedures. They can also start informing their customers and verify if the system suits them. After the test period, you can further assist your partner restaurants and vendors in rolling out reuse and communicating with customers (see section 1).

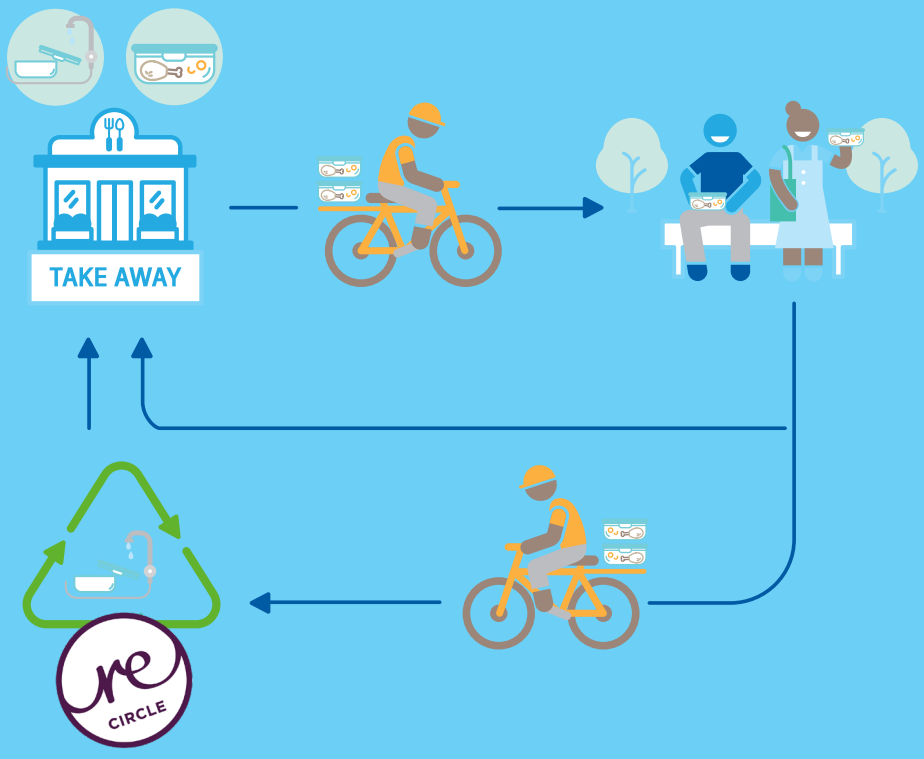
An additional way to increase the size of your reuse network is to create **partnerships with online food delivery platforms** that already have a small or big network of partner restaurants and other types of vendors (see section 3). **Cooperation with local governments**, gastronomy business associations, NGOs, community groups, universities, schools and other local stakeholders (e.g. for waste reduction campaigns) can also contribute to let your reuse network grow.

EXAMPLES FROM PRACTICE

reCIRCLE – a deposit-refund network across restaurants in Switzerland & Europe

ReCIRCLE provides reusable packaging in the food and beverage takeaway sector since 2015.[21] It offers a lunchbox as **service model**, a reusable system for takeaway restaurants, functioning as a network. Restaurants become members of the reCIRCLE network, so called 'partners'. This is voluntary and does not preclude the use of disposable packaging at the same time.

ReCIRCLE provides partners with **washable containers with hermetic lids**, ('box'). It promotes partner establishments on its website and provides marketing materials such as advertising banners, flyers, displays, etc. By participating in the network, **restaurants save costs**: Adding up the costs of the fees as well as the subscription and washing costs, the total is generally lower than buying disposable packaging.

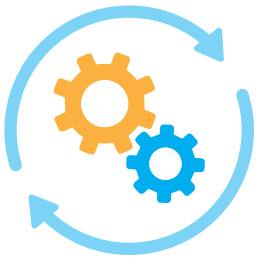


For the **customer, reCIRCLE functions as a deposit-refund system**. The restaurants buy the boxes in small numbers (just in time delivery) and the boxes are property of the restaurant. The guests buy their dish in a box and pay 10 Swiss Francs (CHF) in addition to the price of the food (10 Euros in the EU) and then the box becomes property of the guest. After eating the meal, the customer can return the box to any of the partners and receive in exchange the 10 CHF or a clean box. The returned boxes are washed in the respective participating takeaway stores and restaurants. However, many customers choose to keep their box, wash it themselves and have it refilled when they next order food in the store. All boxes can be sold back to reCIRLCE for the full price to avoid financial risks for the restaurants. The deposit can be digitalised, but the system also works analogue.

New partners start with a test period of three months during which they get full service, with communication material and 20 boxes for free (to be bought or returned after the test). The reCIRCLE partnership costs 150 CHF per year (i.e. 140 €). A deposit system, in which customers pay for the box works differently than so-called 'pay per use' models. It is faster profitable and gives value to the food and beverage containers, which have qualities such as recyclability and stability while heating and freezing. A consumer can pay for a box once and use it ongoing. This approach promotes behavioural change, so that customers and restaurants do not "hoard" the boxes. The packaging never loses its value due to the lifetime right to return.

Since its start, the company has established a network of around 1,500 participating restaurants and takeaway stores in Switzerland and strives to open a European network of reusable packaging, working with franchise systems. It has already started operations in Germany and France.

Operating successfully: How you can manage the return of reusable packaging



Another key element in making your reuse network work is to **incentivise customers to return** reusable food and beverage containers to participating restaurants and vendors or other collection points. If such incentives are not strong enough, customers might collect empty containers and cups at home or throw them into garbage bins or even into the environment. There are different kinds of potential incentive systems. Check which one might work best for your context. Communication materials and cost calculators also need to be provided by the reuse network operator.

Incentives for return by customers to participating restaurants and vendors

1. Deposit-refund

Deposits are a direct financial incentive for customers to return empty food containers and cups. Customers pay an additional deposit amount on top of the normal product price, which is then reimbursed upon return. The required deposit amount depends on the respective context, including income levels of customers.

For food delivery and takeaway, it often means selling reusable containers for food and beverage with the guarantee to buy them back. As there is usually not yet any specific regulation for it, it is slightly different from regulated deposit-refund systems for bottles and cans that exist in several countries. As a reuse network operator, you can start selling reusable containers for food and beverage to restaurants and vendors, which then sell it to customers. Customers then sell it back to restaurants and vendors.

You need to clarify in your respective context how to apply value added taxes (VAT). VAT might need to be added at each change of possession of reusable food and beverage containers, which causes extra costs. In some contexts, specific tokens might also be used instead of money to simplify the exchange.

2. Payments for no-return

Charging the costs of empty food and beverage containers only to customers who do not return them is another way. However, this works only in a reuse network based on the membership of citizens that have registered with personal data, pay monthly fees, and scan QR codes upon the borrowing of each container and cup. After a certain period of time, for instance two weeks, the reuse network service operator can send a reminder to customers and later on debit the price for unreturned food and beverage containers.

As a reuse network operator, you act as a kind of **clearing house between participating restaurants**. If restaurants, cafés and takeaway stores are in an area where many customers bring back their boxes and cups, they may be collecting more empty food and beverage containers than they need. You can then buy back unused boxes and cups from them, so that the participating restaurants and vendors do not have any risks and additional costs for such deposits.

To **guarantee the quality and for reasons of hygiene**, participating restaurants should remove heavily used reusable containers and cups from the reuse system each year. Only containers and cups that are no longer presentable should be exchanged. Depending on the business model and type of subscriptions, such exchange of reusable boxes and cups can be paid for by the participating restaurants and vendors or be conducted for free by the reuse network operator (see box). The reuse network gets more efficient with 'all inclusive' subscriptions as the costs can be calculated better and participating restaurants have an incentive to refer more frequently to their reusable containers than to their single-use ones.

Return of containers and cups by restaurants and vendors to reuse network operators

'All inclusive' subscriptions

The reuse network operator changes once a year heavily used food and beverage containers for free. Participating restaurants and takeaway vendors pay higher subscription fees for it but can also save more money as they do not have to pay extra for each exchange.

'Non-inclusive' subscriptions

Participating restaurants pay each time when heavily used and unpresentable food and beverage containers need to be exchanged by the reuse network operator. The reuse network operator and the individual restaurants can agree on the number of free and paid exchangeable boxes and cups when taking out the subscription

EXAMPLES FROM PRACTICE

barePack – a system for reusable food & beverage containers in Singapore

Founded in 2019, the start-up company 'barePack' provides a reusable packaging solution for takeaway and food delivery in Singapore to as well as in France. In Singapore, currently more than 150 businesses participate.[22] The system works through digital support. Customers (private citizens) install an application on their smartphone and pay a monthly membership fee to barePack (about 3 to 5 Singapore $, i.e. 1,90 € to 3,10 €).

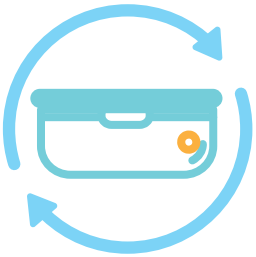
When they get reusable food containers and cups at takeaway vendors participating in barePack, they **scan a QR code** at the store and show it as a proof of borrowing to the staff. Upon return to any of the participating takeaway stores, customers scan again a QR code to confirm return. Customers can borrow five containers and cups at the same time. In case they do not return empty containers and cups, they need to pay for them. The containers and cups remain the property of barePack. Some of the participating restaurants offer discounts for barePack members if they opt for reuse.

Participating takeaway vendors do not pay any subscription fees. BarePack assigns them a specific QR code, creates a vendor profile in its app and provides reusable food containers and cups. It also offers support and marketing materials. When customers bring back empty containers and cups, the **staff of takeaway stores cleans them by adhering to health and safety standards** and reuses them again for other customers.

To highlight potential cost savings for takeaway stores, barePack offers a **cost calculator** on its website that estimates the current material costs for single-use packaging that can be avoided by participating in barePack's reuse network.

To enhance its outreach, barePack seeks **partnerships with corporations to enable memberships of their employees** who work in offices and get takeaway or delivery for lunch. BarePack provides educational materials for employees and analytics for corporations on how much single-use packaging has been avoided. It can also install separate collection points for reusable containers and cups in offices to facilitate their return.

Ensuring quality: How you can design reusable packaging



To make your reuse network succeed, ensure high quality of the reusable food and beverage containers you apply. **To save costs and to be environmentally better than single-use plastic** packaging, reusable containers need to be of **high quality in terms of design, stability and appropriate materials** for the respective purpose. The high quality increases the number of times reusable packaging can be reemployed. The environmental life cycle balance is typically improved with a higher number of reuse loops. With each reuse loop, participating restaurants and takeaway vendors save the costs for single-use plastic packaging.

Reusable boxes, cups and cutlery **should be able to withstand heat and freezing temperatures, be washable many times, be hermetically sealed and stackable and should not contain any harmful substances**. It is also important that reusable products can be recycled at the end of their life to guarantee circularity of materials and improve the life cycle balance. Reusable containers can consist of plastics or other stable materials. The use of recycled materials might also be considered, depending on aspects such as quality standards of recycling as well as food and drug regulations for food-contact packaging.

Furthermore, restaurants, takeaway vendors and stores serve many kinds of different dishes and food products. There is a need for **different forms and sizes** of food containers, which can also have different compartments. To fit the requirements of your participating restaurants and takeaway vendors, you need to study their specific needs.

You might also want to **partner with a local packaging manufacturer** for context-specific research and development of reusable food and beverage containers. Such products could then be produced locally, contributing to jobs and local circular economy value chains. The design process of suitable food and beverage containers in your context can also include customers, food delivery providers and other relevant stakeholders.

Blue Angel ecolabel for reusable packaging systems

GOOD TO KNOW

Since 2019, the German 'Blue Angel' ecolabel offers criteria for awarding its label to reusable packaging systems.[23] So far, the three reuse system providers 'FairCup', 'reCup', 'Vytal' and 'Rebowl' have successfully completed the application procedures.

The 'Blue Angel' follows the **objective** to reduce single-use food and beverage containers and to promote reusable containers. The **criteria** cover three areas: the properties of the food and beverage containers, the organisation of the reuse system and the handling by restaurants and vendors.

The **container design** needs to be free from certain substances (polycarbonate, melamine), withstand temperatures between 0°C to 85°C, demonstrate food safety and tastelessness, be recyclable (made of unmixed plastic and without coating), be able to last more than 500 wash cycles (reusable lids 100 wash cycles) and contain a clear labelling for deposit-refund. In case the packaging is produced with renewable materials, they need to be sourced from sustainable agriculture or forestry, and if containers are made of ceramic, they need to follow best available techniques.

Providers of reusable container systems need to use containers with the design requirements outlined above. They have to apply a deposit-refund system with a deposit of at least 0,50 € per cup and need to offer reusable lids with a deposit or for purchase. Reuse system providers need to monitor and report the number of refills of deposit containers within a year ('circulation figure'). They must take back and recycle containers at the end of their life cycle. Furthermore, they shall have logistic concepts that optimise transport distances. To ensure hygiene, reuse system providers have to give information to participating restaurants and vendors about hygiene aspects (guidelines attached to the criteria). In case of specific food and beverage containers for events, the reuse provider needs to make sure that they are used at several events and only a maximum of 50% of containers receive a special printing for a specific one-time event.

Restaurants and takeaway vendors participating in the reuse system have to apply specific rules, which are outlined in an Annex of the ecolabel criteria. For instance, they should first offer reusable containers to customers and hand out single-use packaging only upon the explicit request by customers. They should introduce financial incentives to customers to opt for reuse (discount for reuse / higher price for single-use), and also accept 'bring-your-own' containers of customers. Reusable or single-use lids should be offered against deposit or payment. Restaurants need to monitor the number of refills, use 'Blue Angel' information materials and take back used containers for recycling.

In case of further updates of the criteria, aspects such as standards for cleaning reusable containers and a minimum circulation figure of containers might be considered.

Tracking progress: How you can show success

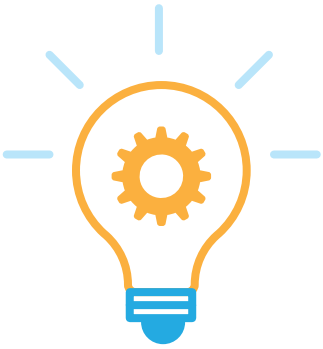
Gathering data is essential to convince restaurants and takeaway vendors to join your reuse network and customers to opt for reusable food and beverage containers. As reuse network operator, you are in a **unique position to count how many reusable food and beverage containers you bring into circulation** and how often you take heavily used containers out of circulation. Some reusable food containers also remain with customers or get lost. They are either paid in advance through a deposit or need to be paid by customers if they do not bring them back but the reusable packaging keeps its value (if not discarded into the waste management system or the environment).

In case you have a business model based on scanning QR codes at each borrowing, you also have information on **how many times your reusable food and beverage containers are used**. If your business model relies on deposit-refunds without QR scanning, collecting usage data of your food and beverage containers requires participating restaurants and takeaway vendors to gather such data and report to you as reuse network operator.

Based on this information, you can **calculate the amount of substituted single-use plastic packaging and estimate cost savings** for restaurants and takeaway vendors as well as **environmental benefits**, e.g. avoided greenhouse gas emissions from less plastic consumption in CO_2-equivalent or avoided plastic leakage into waterways and the ocean depending on the local waste management system (see also the guiding questions in section 1).

3.
Online Food Delivery Platforms and Transport Providers

Getting started: How you can encourage reuse



If you work for an online food delivery platform, you might want to **show cost saving opportunities** and good quality food and beverage container options to your partner restaurants and vendors. You might also seek to create a **'greener' image** and secure the **social acceptability** of your business model by rendering food delivery more environmentally sustainable. Switching from single-use plastics to reusable food and beverage containers and bags is a way forward in this regard.

You can deal with it as a specific action or as part of a larger **corporate social responsibility strategy** that also addresses other aspects such as avoiding food waste, transitioning towards low-carbon transport with fair working conditions, and contributing to equitable and environmentally sustainable food value chains.

As **interface between customers and restaurants**, online food delivery platforms influence how customers choose their meals and drinks and how restaurants deliver them. Their numbers of customers and participating vendors as well as their turnovers have increased rapidly over the last years (see Annex for an overview of platforms in East- and Southeast Asia). This gives food delivery platforms a particular leverage and social responsibility. It has also encouraged several online food delivery platforms to take first actions to reducing single-use plastics. Experiences with these measures are a good basis for further development of reuse.

Options for food delivery platforms to promote reusable packaging

Programme 'avoid' and 'reuse' options for customers	Food delivery platforms can integrate the option into their online interface to choose reusable food and beverage containers and to renounce single-use plastic cutlery and straws. This can be optional or set as a default.
Partner with reuse network operators	For practical implementation, food delivery platforms can partner with reuse network operators as they provide reusable packaging, guidance to restaurants & vendors, marketing material, etc. (see section 2).
Exchange with partner vendors and transport providers	Food delivery platforms can train their own transport fleet or partner transport providers as well as staff of restaurants in how to replace single-use plastics by reusable food and beverage containers and bags.

Estimated increase in online food delivery 2019-2020

GOOD TO KNOW

Country	Turnover 2020 (million €)	Change 2019-2020	Users 2020 (million)	Change 2019-2020
China	45,622	+28.0%	410.8	+24.6%
France	1,799	+29.6%	15.7	+26.4%
Germany	2,195	+22.6%	19.4	+19.9%
Indonesia	1,728	+35.8%	37.3	+29.2%
Japan	2,757	+23.6%	21.0	+19.8%
Malaysia	187	+45.9%	6.9	+36.3%
Philippines	219	+48.4%	8.8	+38.9%
Singapore	411	+35.7%	2.4	+32.0%
Sweden	247	+26.6%	2.5	+21.9%
Switzerland	204	+25.5%	2.0	+19.9%
Thailand	243	+38.2%	10.0	+32.3%
Vietnam	268	+45.9%	9.5	+32.1%

Source: Statista, 2020. "Online food delivery" in these statistics comprise 1) restaurant-to-consumer delivery, 2) platform-to-consumer delivery. The turnover is a gross merchandise value billed by delivery services. The data do not include orders by phone and delivery of fresh/ unprepared food.

https://de.statista.com/outlook/374/137/online-food-delivery/ [data accessed on 17 December 2020]

Programming change: How you can provide reuse options to customers

You might have observed that some online delivery platforms have already started to include the **option for customers to avoid the unnecessary addition of single-use plastic cutlery and straws** in their delivery, as they are often not needed. Some platforms have put the avoidance of single-use plastic cutlery and straws as default mode so that customers need to actively tick a box if they want them. Some platforms also provide a choice between packaging materials.

In the same logic, further development consists in **programming the option to order reusable food and beverage containers** instead of single-use packaging. Customers either choose reusable packaging by clicking a box or they get it automatically by default if they do not tick a box for single-use plastics.

If you want to programme a reuse option, you need to include which of the restaurants and vendors offer reusable food and beverage containers and for which meals and drinks this is available into the **online database of your platform website**. You should coordinate this information with the restaurants and vendors to get the information and combinations right.

Additional programming can be necessary for tracing the reusable packaging cycles, for factoring deposits or for registering the borrowing. It might be **part of the business model** of online delivery platforms to charge customers a small extra fee for reusable boxes and cups to finance additional costs arising from programming, database management and information as well as other potential costs for logistics. Such costs can be visible as extra fees, which would however disincentivise customers, or be incorporated into the general price per meal and drink.

Programming should go hand in hand with **informing** your restaurants and vendors as well as your customers (i.e. consumers of food delivery) about reuse options. You can for example integrate it into a broader marketing campaign on your website and social media to promote a 'greener' image of your food delivery platform and attract customers.

Implementing change: How you can partner with reuse network providers

Online food delivery platforms do not need to develop an own reuse system but can rather team up with an existing reuse network operator (see section 2). In this way, you can **combine the strengths** of your online food delivery platform with the strengths of the reuse network. The latter has expertise in designing reusable food and beverage containers, in organising return logistics, and in teaching restaurants, vendors and customers how to use them. This expertise is usually not part of the core business of food delivery platforms.

At the same time, online food delivery platforms are in the **unique position to increase the scope** of such reuse networks by promoting it to their partner restaurants and vendors. Your role can consist in actively suggesting to restaurants and vendors listed at your platform to join the reuse network. You could highlight the cost saving advantages and the environmental benefits of reuse to them.

Such **partnerships have recently started** in some countries, generating first experiences. For instance, you can start with a test phase within one city for a couple of months. This helps to test the necessary programming of the online platform, the integration of new partner restaurants including the training of their staff as well as the return logistics. If it works properly, customers can choose reusable packaging, restaurants get the information to pack ordered meals and drinks in reusable food and beverage containers for delivery, and the transport providers deliver them to customers.

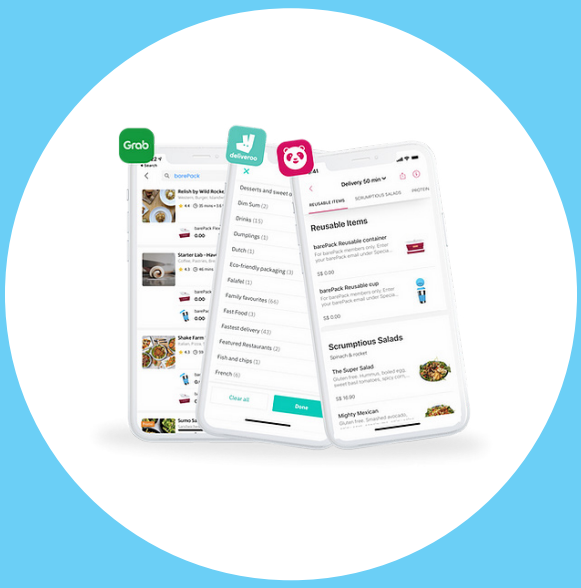
In case that a reuse network operator does not yet exist in your country or area, you could help to promote the creation of such a start-up business, either individually or in collaboration with other food delivery platforms.

There are several options to **organise the return logistics** and to **provide incentives** to customers to return empty food and beverage containers. They partly depend on the business model of the reuse network operator (see section 2). Reuse networks are more efficient if many restaurants and vendors participate and if they use the same food and beverage containers.

EXAMPLES FROM PRACTICE

Partnerships between a reuse network operator and online food delivery platforms in Singapore

Since 2020, the start-up reuse network 'barePack' in Singapore cooperates with the **online food delivery platforms GRAB Food, Food Panda and Deliveroo**. These platforms have programmed the option to get reusable containers and cups from the vendors that participate in the barePack network. Customers can search for barePack partner restaurants at the respective food delivery platforms and order their meals. Then customers look for the partner restaurant in their barePack app to obtain a one-time password for completing their order at the respective online food delivery platform. If customers choose to pick-up their orders themselves from restaurants and takeaway vendors, they scan a QR code upon pick-up for the number of 'FlexBoxes' and 'KindCups' they borrow. There is no deposit involved but customers are charged the costs of food and beverage containers if they have not returned them after a couple of weeks.[26]



Options to organise return systems by food delivery platforms and reuse networks

1. Restaurants & takeaway vendors pay fees to the reuse network

Restaurants and vendors are members of the reuse network and pay subscription fees. Private customers are not members but require an incentive to return reusable food and beverage containers (deposit-refund). It also needs to be clarified where and how customers return them.

Step 1 – Charging deposits when customers order meals and drinks

There are several ways to organise deposit-refund. For instance, food delivery platforms can reserve deposits on credit cards of customers when they order meals and drinks at the platform. Food delivery platforms then charge the deposits for the number of boxes and cups that the restaurant provided to customers for the ordered meals and drinks. Either the restaurants or the drivers enter the number of boxes and cups into an IT system. Food delivery platforms transfer the deposits to the restaurant where the customer ordered food as these restaurants exchange boxes against deposit from customers.

Step 2 – Customers return empty boxes and cups and get deposits back

- **Option A – Return to restaurants:** Customers return empty food and beverage containers to participating restaurants and vendors of the reuse network. They exchange the empty boxes and cups for the deposit amount. The food delivery platform that received the deposit payment from customers transfers the amount to the restaurant where the customer ordered the meals or drinks.
- **Option B – Return to transporters:** Customers give empty food and beverage containers back to the transport operators, i.e. bicycle, motorbike or car drivers during a next delivery. The drivers bring them back to participating restaurants, to a central washing facility or to a central hub of the reuse network with regular pick-up and transport to a washing facility. If drivers hand out new reusable boxes and get back empty reusable boxes, the IT systems of food delivery platforms can for instance calculate how many deposits to deduce from or reimburse to customers.

2. Private customers pay fees to the reuse network

Private customers are members of the reuse network and pay monthly membership fees. Restaurants and vendors do not pay subscription fees but install QR code scanning devices, get a stock of reusable food and beverage containers, and train their staff.

Step 1 – Borrowing reusable cups and food containers

During the ordering of meals and drinks at the food delivery platform, customers select reusable packaging. The related borrowing of reusable cups and boxes then needs to be registered with the reuse network, e.g. through the smartphone app of the reuse network linked to the food delivery platform with one-time-passwords. There might also be a scanning of QR codes when the driver delivers the filled cups and boxes to the customers (like in a restaurant for takeaway). There is no deposit involved but the software tracks how many food and beverage containers the customers have registered to their account. Customers would need to pay for them if they do not return them.

Step 2 – Returning reusable food and beverage containers

After use, customers return empty boxes and cups to any participating restaurant or vendor. Scanning of QR codes confirms the return. In case that customers have not returned empty food and beverage containers, they get reminders from the reuse network operator and ultimately need to pay for them if they do not bring them back. The reuse network might also have specific collection hubs or central washing facilities where customers can return them. Or they might even offer to pick a certain amount of empty cups and boxes up from customers.

Example: barePack in Singapore

Optimising change: How you can organise transport logistics

Delivery drivers of bicycles or motorbikes are the physical and visible link between online food delivery platforms, vendors, and customers. Their working conditions and salaries vary between countries, contexts and contractual arrangements with online delivery platforms or restaurants. Drivers are equipped with smartphone applications, indicating when and where they should pick up ordered meals and drinks and where to deliver them. They often face time pressure and difficult traffic conditions in their daily work.

Transporting meals and drinks in reusable food and beverage containers is in principle not different than transporting single-use plastic containers. Both need to be stored in larger **transport boxes or bags that should of course also be reusable**. Food delivery platforms or restaurants can provide reusable bags or boxes to drivers, which are standardised, high-quality and hygienic, and can be branded to make publicity for the respective businesses. The design and system choice of reusable transport bags and boxes needs to consider that some bags or boxes can be kept all the time by drivers while others might be necessary to wrap all meals and drinks of one order, in case that drivers have to deliver several orders at once. Such bags might then be given to customers in exchange for reusable bags they received from previous orders.

In case that drivers need to fulfil additional tasks for reuse systems, they require appropriate **training** by food delivery platforms and reuse network operators. For instance, if they need to bring back empty food and beverage containers from customers to restaurants or central washing facilities, they need information about how to properly handle them. Returned boxes and cups should be clearly marked and stored separately from new meals and drinks to avoid mistakes and the handing out of empty containers to customers. A solution could be to create hygienic washable bags to be left to customers. Such bags could be reversible, so that one side signals "food" and the reverse side signals "wash" and could also be branded by the online delivery platform.

Depending on the reuse system design, drivers might also require **IT equipment** in form of smartphones and apps to scan QR codes for the handout and return of reusable food and beverage containers. This might go hand in hand with the IT equipment they already have for the usual delivery process. There is also still scope for further innovation in the use of IT equipment and smartphone applications to make it as easy and convenient for customers as possible. To name an example, one innovation might consist in better connecting food delivery applications with reuse network applications.

As the **ecologic footprint of packaging is relatively small compared to transport and food production**, food delivery platforms and reuse network operators need to make sure that transportation does not turn down the positive effect of reuse. Therefore, algorithms to return the reusable packaging to the nearest partner restaurant need to be elaborated. Most effective would be a dense network of restaurants using the same types of reusable packaging. It might be more efficient and environmentally friendly that customers return empty food and beverage containers themselves to participating restaurants and vendors.

EXAMPLES FROM PRACTICE

The online delivery platform ‘Kecipir’ in Indonesia

The social enterprise ‘Kecipir’ runs an **online platform to connect organic farmers with customers** in the city Tangerang Selatan in Banten Province, south of Jakarta in Indonesia. Since 2019 it has applied reusable options for delivering fruits and vegetables. At first, ‘Kecipir’ used baskets and cloth-based reusable bags. As these two items did not sufficiently protect the quality of its products, it switched to food-grade reusable plastic boxes, reusable shopping bags, and other materials for wrapping vegetables and fruits such as paper bags.

‘Kecipir’ uses its **own courier for transporting** its products to customers, who also take back reusable containers and certain types of waste from previous deliveries. Couriers also inform customers about the circular delivery system and remind them to return packaging and reusable containers. ‘Kecipir’ then washes returned containers and uses them again. The social enterprise also applies a tracking system, which ensures that customers who have not returned the reusable container receive a notification reminder via the smartphone application or e-mail to return the empty container.

For some products such as mushrooms, berries, fish, and spices, ‘Kecipir’ still applies single-use packaging. However, the social enterprise partners with recyclers who can process this type of waste so that **customers return their single-use plastic and paper waste to be reprocessed**. Through printed materials, blogs, websites, applications, and social media, ‘Kecipir’ also conducts **education related to organic waste** (bamboo ties and banana leaves) for composting by customers as well as on reducing single-use plastics.

Partnering farmers, food processors and customers seem satisfied with the system – both in terms of price and the availability of substitutes to single-use plastics. Besides environmental benefits, ‘Kecipir’ also perceives economic advantages in terms of cost savings by washing reusable containers instead of buying single-use packaging.[27]

Monitoring: How you can measure success

Online food delivery platforms can **develop reliable monitoring approaches** to identify the amount of reduced single-use plastics in terms of numbers of items (potentially combined with estimates on the weight of plastic types in these items). On this basis, the reduction of greenhouse gas emissions and the prevention of (marine) littering can be estimated. Monitoring the decisions by customers during their orders at the online platforms can be a basis for it (e.g. the numbers of opting-out from single-use plastic cutlery or the numbers for choosing reusable food and beverage containers). Some comparison between the packaging preference during online orders and the actual delivery from restaurants and vendors to customers would however be necessary.

PART 2

Recommendations for Policymakers

1. Policy Recommendations

Local, regional and national governments and public administrations play a key role in facilitating the transition towards a circular economy. If you are part of these institutions, you can contribute to **creating a policy framework to promote reuse in food delivery and takeaway**. Multi-stakeholder approaches are crucial to identify suitable policies for your respective context, and should involve public institutions, restaurants and takeaway vendors, online food delivery platforms, transport providers, customers as well as academia and non-governmental organisations. The following 10 policy recommendations summarise options:

1 Apply the 'waste hierarchy' and '3R'

Reducing waste generation and promoting 3R ('reduce, reuse, recycle') are often already part of public policies. Waste management requires further efforts to enhance waste segregation at source, collection, sorting and recycling. In practice however, waste prevention often gets neglected. Measures to avoid waste generation during the production, trade and consumption of products therefore need more attention. Reusing food and beverage containers, cutlery, straws and bags avoids unnecessary single-use packaging and plastic waste. Reusable containers for food and beverage should be designed for close loop recycling after the end of their usage life. Promoting reuse in food delivery and takeaway can then contribute to healthier air, soil, water and marine environments, as less waste lands in the environment. It also contributes to resource efficiency and climate change mitigation. It should however be tackled in an integrated manner for sustainable development and circular economy, also minimising transport distances, food waste and the environmental impacts of food production by considering social and economic aspects.

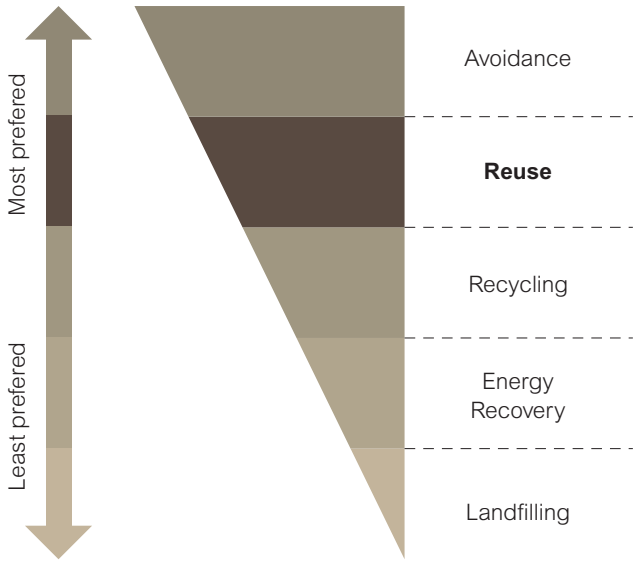


Figure: Waste management hierarchy.

2

Create a voluntary agreement with the food delivery and takeaway sector

Online food delivery platforms, restaurants, transport providers and customers might have different perspectives and interests. Connecting these stakeholders with each other and putting the issue of plastic waste on the agenda can facilitate the identification of suitable approaches to switch towards more sustainable packaging. Public and non-governmental institutions can provide platforms for this purpose and formalise intended cooperation, targets and actions. Such agreements can include pilot testing between reuse network operators and food delivery platforms in different cities. They can also stimulate compatibility between different reuse network operators and the packaging they apply. Furthermore, such agreements can go hand in hand with policies to phase out certain single-use plastics.

3

Phase out certain single-use plastics

A strong incentive to switch to reusable options consists in forbidding the sale of certain single-use plastic products such as straws, cutlery, plates, food and beverage containers, and bags. It forces businesses to identify options to avoid unnecessary packaging and items, to replace single-use plastics with reusable packaging, or to substitute single-use plastics with other materials. Such bans of certain single-use plastics should be organised with a certain transition period between the adoption of the regulation and the entering into force of a ban to give businesses time for adapting. Introducing national reuse targets for food and beverage containers can also be a way forward.

4

Oblige restaurants and takeaway vendors to offer reusable packaging

Governments can pass regulation to oblige restaurants and takeaway vendors to provide reusable containers, cups and cutlery as an option besides single-use packaging. This could facilitate the market entrance and development of reuse networks and the change of habits in restaurants and takeaway stores. Food delivery platforms can also be obliged to programming the option for customers to choose between reuse and single-use. Such obligations can also be part of voluntary agreements between the government and businesses if regulation is not feasible.

5

Support innovation and start-ups to create reuse systems across several restaurants and takeaway vendors

Organisations need to emerge that offer reusable packaging, structure return systems, approach restaurants and inform customers. Such reuse network operators can be start-up companies or non-governmental organisations, which require start-up funding, networking and a conducive environment at the beginning. Credit schemes for environmental technology promotion funded by public budgets or private foundations could support incubation phases. Municipalities can support the testing phase of new reuse schemes across several restaurants and takeaway vendors, which can also be accompanied by academic research. Online food delivery platforms can integrate the reuse option into their interface websites so that citizens can order reusable packaging or even get reusable packaging as default mode.

6

Inform, campaign, educate and enhance awareness amongst customers, restaurants and takeaway vendors

Public authorities and non-governmental organisations can contribute to making reuse in food delivery and takeaway popular. It requires information about waste, single-use plastic usage and environmental impacts. At the same time, citizens, restaurant owners and takeaway vendors need to see clear alternatives they can incorporate into their everyday lives and practices. Awareness raising should therefore go hand in hand with the development of reuse networks. If such reuse systems do not exist yet, 'bring-your-own' reusable containers, cups and cutleries can be promoted to citizens and restaurants, e.g. also by stickers attached to restaurant doors provided by municipalities or non-governmental organisations.[29] Campaigning and awareness raising require repetition and institutionalisation. Education needs to start in schools but, for example, also includes trainings for public staff or in restaurants.

7

Promote reuse through green public procurement

Public administrations at local, regional and national level can accelerate the switch to reuse systems in canteens of public administration, schools, universities, publicly owned companies, museums, stadiums and other institutions. They can also promote reuse at markets under municipal control as well as at concerts and festivals organised or financed by public authorities as part of contractual obligations. Hygiene concepts for the food and beverage sector by associations or public authorities should also consider reuse of cutlery, plates, cups, glasses, straws, containers for in-house consumption as well as for takeaway and delivery. Similar to public institutions, also private sector companies can adapt their procurement to introduce reuse systems in their offices and canteens.

8

Ensure health and food safety standards

Customers and staff need to be able to trust in hygiene standards of reusable food and beverage containers, cutlery and straws. It is part of the broader endeavour of policymakers and public administration to ensure food safety and avoid foodborne diseases along the value chain from production and processing to hygiene standards in restaurants, takeaway stores, canteens, markets and during delivery. Food and drug agencies or other food safety authorities develop guidelines and conduct controls or audits for this purpose. Such guidance can include orientation about appropriate hygiene and sanitation for appropriate handling, washing and drying of reusable plates, glasses, cups, food containers, cutlery, and straws. They can also provide guidance about additional hygiene requirements and monitoring during the COVID-19 pandemic, including physical distancing, frequent handwashing and the minimisation of direct touch contacts of items.[30]

9

Develop design guidelines and standards for reusable packaging

Multi-stakeholder partnerships and public administrations can support the development of standards and eco-design guidelines for reusable food and beverage containers to increase trust.[31] They can also prepare legal requirements for it. For instance, reusable packaging should be free from harmful substances, resist heat and freezing temperatures, be stackable and hermetically sealed. It should be possible to wash and reuse them many times to increase their cost saving advantages and environmental benefits. To enable efficient reuse systems, standardised food and beverage containers could be beneficial to avoid complications if restaurants participate in different delivery companies or if there are competing reuse networks. If restaurants offer different types of reusable containers and cups from different reuse networks, it creates disadvantages in terms of saving space and convenience.

10

Make producers responsible

Policymakers can introduce Extended Producer Responsibility (EPR) schemes for packaging. In such systems, companies that put packaged products on the market are responsible for ensuring the collection, sorting and recycling or environmentally sound treatment of the associated packaging waste (incl. plastics, cardboard/paper, glass, metal packaging).[32] Producers can also be made responsible for awareness raising amongst citizens for appropriate waste segregation and clean-up measures. EPR schemes increase the collection and recycling rates of single-use packaging waste. The associated costs covered by companies provide a small incentive to switch to more sustainable and potentially reusable food and beverage containers. However, further development of existing EPR systems could further promote reuse. For instance, deposit-refund systems for reusable and single-use bottles are part of existing EPR systems in some countries. A part of the fees paid by obliged companies to Producer Responsibility Organisations could be used to develop reuse systems in the food delivery and takeaway sector. This could go hand in hand with the elaboration of 'reuse targets' besides 'recycling targets'.

2.
Policy Examples from Asia and Europe

THAILAND

Reducing plastic waste and cooperating with the food delivery sector

In February 2021, the Thai Cabinet approved **a draft Plastic Action Plan**, prepared by Thailand's Ministry of Natural Resources and Environment (MoNRE). It is related to **Thailand's 'Roadmap on Plastic Waste Management 2018-2030'**. With this action plan and roadmap, Thailand intends to reduce plastic consumption and to enhance plastic recycling.[33] Amongst others, it envisages to **phase out plastic bags with a thickness of less than 36 microns, foam food containers, single-use plastic cups less than 100 microns, and plastic straws** by 2022. Cap seals of bottles, oxo-degradable plastics and primary microplastics should also be phased out. To achieve these goals, MoNRE and its Pollution Control Department (PCD) have created a Plastic and Electronic Waste Management Sub-Committee, including a working group that involves the private sector.

Specifically for the food delivery sector, MoNRE as well as its Pollution Control Department (PCD) and Department of Environmental Quality Promotion (DEQP) have concluded a voluntary **Memorandum of Understanding on "Reducing single-use plastics from food delivery"** with online food delivery platforms and other stakeholders from public administration, research and the private sector in September 2020. It involves big delivery platforms such as Food Panda, GRAB, Lineman, Lalamove as well as PTT Global Chemical Public Company, Wongnai Media Company, Velox Technology, the Institute of Public Policy and development, the Environmental Research Institute of the Chulalongkorn University, the Public Relations Department and the Department of Health.[34] According to a survey conducted by PCD, physical distancing measures related to COVID-19 during the first half of 2020 had led to an increase in food delivery by about 30%, resulting in an increase of plastic waste.[35]

To reduce the amount of single-use plastic bags, MoNRE introduced the **campaign "Everyday say no to plastic bags"** in January 2020. Preceding, it concluded a voluntary agreement with supermarkets and other retail chains to stop handing out single-use plastic carrier bags for free. Based on observations in Bangkok, most stores switched to selling reusable bags made of plastics or other materials. In a next step, the campaign also intends to address single-use plastic bags in traditional "fresh" markets.

INDONESIA

Managing packaging waste and phasing out certain single-use plastics

In December 2019, the Indonesian Ministry of Environment and Forestry (MoEF) launched a **'Roadmap to Waste Reduction by Producers'**.[36] The Roadmap seeks to encourage the reduction of packaging waste made of plastics, aluminium, glass and paper. It defines 'waste reduction' as limiting waste generation, increasing recycling and enhancing reutilization (defined in the policy document as using production materials that can be reused). It comprises several **new responsibilities for businesses** in food and beverage services (eateries, cafés, restaurants, catering services and hotels) as well as in manufacturing and retail.

Most of the Roadmap focuses on introducing a pre-form of **Extended Producer Responsibility for packaging**. This means that producers should be involved in planning, implementation, monitoring, evaluation and reporting of waste reduction and management. Furthermore, the Roadmap has the intention to **prohibit certain single-use plastics by 2030, including straws, cutlery, dishes (plates and cups), foam food containers, and plastic bags** by 2030. It also intends to prohibit **plastic sachets** of less than 50 ml or 50 grams for food, soap and shampoo by 2030.

So far, **limited bans have rather been introduced at local or provincial level in Indonesia**. There are more than 30 cities/ regencies and 2 provinces that have a regulation to ban or phase out single-use plastics, mostly focusing on banning plastic bags at supermarkets.

The first city in Indonesia to ban plastic bags in modern retail stores was the city **Banjarmasin** in the province South Kalimantan. Entitled the "City of Thousand Rivers", it has been highly affected by plastic leakage into waterways. In June 2016, the local government issued the Mayor Regulation No. 18 of 2016 on the Reduction of Plastic Bags. Based on a study by the Banjarmasin City Environmental Agency, it is estimated that plastic bags consumption in modern stores amounted to 33 tons or about 1,476,000 sheets per month in 2020, representing a reduction by 82% compared to 2016. One popular substitute was the "purun", a traditional woven basket made of a local grass plant endemic to the area, which is both reusable and compostable. Banjarmasin has had a famous culture around its "purun" bag products, which fell out of popularity over the past few decades, but which are now widely used again: The usage of "puruns" increased by about 50% since the plastic bag ban. While the existing regulation only applies to malls and modern retailers, Banjarmasin has plans to expand the scope of regulation to traditional markets and other plastics.

CHINA

Policies on reducing plastic waste

In January 2020, the National Development and Reform Commission (NDRC) and the Ministry of Ecology and Environment (MEE) published a new policy framework for reducing plastic waste. These Opinions on Further Strengthening the Treatment of Plastic Pollution explicitly **address the e-commerce, express delivery and food delivery sectors** for which green logistics models shall be established.[37] Implementation plans shall be developed in this regard.

The Opinions intend to significantly **reduce the consumption of certain single-use plastic products** between 2020 and 2022. They include bans of disposable foam plastic tableware and disposable plastic cotton bud sticks, ultra-thin plastic shopping bags (< 0.025 mm), polyethylene agricultural land film (< 0.01 mm) and products containing microplastics. In certain geographical areas, it also foresees restrictions and reductions for non-degradable disposable plastic straws and tableware and non-degradable plastic bags. The policy also seeks to avoid harmful additives in plastics and increase the use of recycled materials. Waste segregation at source, separate collection and recycling infrastructure are to be increased. In July 2020, a Notice on Solidly Promoting Plastic Pollution Control was adopted by several departments of the Chinese government to guide implementation of the Opinions.[38]

In February 2021, the Chinese State Council issued the Opinions on Accelerating the Establishment of a Green, Low-Carbon and Circular Development Economic System, which serve as a comprehensive document to provide solutions to low-carbon development and circular economy in China. The document also emphasizes the collection, recycling and recovery of plastic waste, controlling plastic pollution and preventing overpackaging.[39]

EUROPEAN UNION (EU)

Phasing out certain single-use plastic products

In 2019, the EU adopted a new binding regulation to phase-out certain single-use plastics that applies for all 27 member countries. Since July 2021, the 'EU Directive 2019/904 on the reduction of the impact of certain plastic products on the environment' (Single-use Plastic Directive) **bans the following single-use plastics**: cutlery, plates, straws and beverage stirrers made of all kinds of plastics as well as food and beverage containers made of expanded polystyrene. In addition, the EU Directive also bans oxo-degradable plastics, plastic cotton-bud sticks and sticks for balloons.

Furthermore, the EU Directive envisages to **reduce the consumption of plastic cups and food containers**, recommending member states to adopt targets and ensure the availability of reusable alternatives. Cups shall get **labels** that inform consumers about their plastic content and correct disposal (see images for cups). The **producers** of cups and lightweight plastic carrier bags – amongst other products – shall be **responsible** to finance waste collection, clean-ups and awareness raising. Member States need to ensure that **consumers are informed about alternatives** to single-use food and beverage containers and cups, plastic bags and other products.[40]

This EU Directive has been a centrepiece of the European Commission's 'Strategy for Plastics in a Circular Economy' of 2018.[41] In 2020, the EU has adopted a new 'Circular Economy Action Plan as part of its European Green Deal', which announces the elaboration of additional measures. For instance, the European Commission intends to suggest requirements for **minimum recycled content** in plastic packaging as well as construction materials and parts of vehicles made of plastics. It wants to ban intentionally added **microplastics** and addresses unintentionally released microplastics through better measurement (e.g. from tyres and textiles), labels, standards, certifications and regulation. Furthermore, the European Commission seeks to avoid misunderstandings amongst consumers about the notions **'biodegradable' and 'compostable'** plastics by assessing their environmental impacts and developing criteria for their use. It will also assess the environmental impacts of **'bio-based'** plastics in comparison to fossil fuel-based plastics. At international level, the European Commission supports the development of a "global agreement on plastics".[42]

GERMANY

Regulation to switch from single-use to reusable packaging

Since 2003, Germany has a **deposit-refund system for most bottles and cans** in place, which further developed over time. Customers can return empty bottles to reverse-vending machines in supermarkets to get their deposit back. The system envisages to increase the market share of refillable bottles and to increase the collection rates of single-use beverage containers.[43] The deposit-refund system is part of Germany's broader Extended Producer Responsibility for packaging legislation within a 'Packaging Act'. It obliges companies that put packed products on the market to ensure the collection, sorting and recycling or environmentally sound treatment of packaging waste.

Following the 'EU Directive 2019/904 on the reduction of the impact of certain plastic products on the environment', **Germany banned certain single-use plastic products by July 2021**. The banned products include single-use plastic cutlery, plates, straws, beverage stirrers, cotton-bud and balloon sticks as well as food and beverage containers and cups made of expanded polystyrene. It also bans all kinds of oxo-degradable plastics. The ban was adopted by the German Cabinet as well as the German Parliament in November 2020.[44]

Going beyond EU regulation, the German Parliament also adopted a modification of the Packaging Act to **ban single-use plastic carrier bags with a thickness of 15 to 50 microns from January 2022 on**. For the implementation of this ban, the German Ministry of Environment, Nature Conservation and Nuclear Safety (BMU) recommends switching to reusable bags and boxes rather than to other single-use materials such as paper bags. Ultra-lightweight single-use plastic bags below 15 microns continue to be allowed as they are often used for fresh and perishable food such as meat.[45] Already prior to the ban, the consumption of single-use plastic carrier bags had decreased by 64% compared to 2015 in Germany. This earlier reduction resulted from a voluntary agreement between BMU and the German Retail Federation, which started in 2016 and introduced the principle that plastic carrier bags are not given for free anymore. In 2019, the consumption was still at 1.6 billion plastic bags per year, i.e. 20 bags per person/year.[46]

Between January to May 2021, the German Cabinet and Parliament also adopted a revision of the Packaging Act, which amongst others **obliges restaurants and takeaway vendors to offer the option of reusable food and beverage containers**. The objective of the new regulation is to reduce the consumption of single-use food and beverage containers as foreseen by the 'EU Directive 2019/904 on the reduction of the impact of certain plastic products on the environment'. The regulation will get effective on 1 January 2023. The law **enables customers to choose whether they prefer reusable or single-use food and beverage containers**. Restaurants, coffee shops and takeaway vendors will need to inform their customers about the reuse option and have to make sure that food and drinks in reusable packaging are not more expensive and offered under less convenient conditions than in single-use packaging. The new regulation includes exceptions for vendors with less than five staff members and a sales area of less than 80 square metres, who can fulfil their obligation by accepting reusable packaging brought by customers instead of offering own containers or cups. Companies using vending machines can also fulfil their obligation by accepting reusable packaging brought by customers.[47] To promote reusable packaging, the German Environment Agency (UBA) and the Öko-Institute published a series of practical guides and informational materials for gastronomy businesses, local authorities and citizens in June 2021.[48]

FRANCE

Promoting reuse through legislation and a voluntary agreement

In February 2020, the French Government and Parliament adopted a comprehensive **'Anti-Waste Law'**.[49] It comprises significant modifications of the existing legal frameworks on environment, consumption and other related areas to reduce plastic waste, avoid food waste and enhance the repairability of electrical and electronic equipment. Amongst others, it serves to integrate the EU Directive on Single-Use Plastics into French law and partly goes beyond EU regulation. The law envisages to phase out all single-use plastic packaging by 2040 and, amongst others, **includes the following new rules to reduce single-use plastics and to promote reuse**:

- **Bans of certain single-use plastic products:** As regulated by the EU Directive on Single-Use Plastics of 2019, oxo-degradable plastics, single-use plastic straws, cutlery, plates, beverage stirrers, balloon sticks, cotton bud sticks and food and beverage containers made of expanded polystyrene get banned before July 2021. The law even goes a step further by also banning all kinds of single-use plastic cups (not only polystyrene), meat skewers, plastic confetti, free plastic toys added to kids' menus, and non-biodegradable plastic sachets for tea at different dates between 2020 and 2022. The import, production and sale of single-use plastic bags is also banned since January 2021, which follows earlier plastic bag bans.
- **Reuse in fast food restaurants:** From January 2023 on, fast food restaurants have to serve food and drinks with reusable cups, plates and cutlery instead of single-use plastics or cardboard. This applies only to food and drinks customers consume in the restaurant.
- **Reuse in daily food services:** Some customers receive a meal every day to their home from the same food service provider, for instance if persons are not able to cook for themselves anymore. This category of food service providers needs to apply and collect reusable food and beverage containers, plates and cutlery from January 2022. Exceptions, e.g. for certain public health reasons, shall be further detailed in a Decree.
- **Incentives for reusable cups in takeaway stores:** Sellers of takeaway drinks need to introduce price reductions for customers who bring their own reusable containers compared to drinks served in single-use cups.
- **Reuse in retail:** Retailers need to accept serving products in reusable containers brought by customers and need to inform their customers about how they should clean such containers and what types of containers are suitable. Customers are responsible to ensure hygiene. Retail stores with a surface of more than 400 m2 need to provide reusable containers to customers against payment or for free.
- **Reducing single-use plastics in publicly owned canteens and public procurement:** The canteens of schools, universities and kindergartens need to stop using plastic containers for cooking, heating and serving food in January 2025. Already in 2020, school canteens needed to stop using plastic bottles for water if there is access to potable drinking water. From January 2022 on, state institutions have to stop buying single-use plastics for their workspaces and events.
- **Access to potable water in institutions open to the public and at events:** Universities, libraries, railway stations, hospitals, schools and similar institutions need to ensure access to tap water by January 2022 and are not allowed to hand out plastic bottles for free since January 2021. At festive, cultural and sports events, sponsors cannot demand the use of single-use plastic bottles anymore if reusable ones exist. Restaurants need to indicate that customers can get tap water for free.

- **Reducing plastic packaging of fruits and vegetables:** Starting in January 2022, retailers need to avoid any plastic wrapping and stickers for fruits and vegetables such as banana and apples. Exceptions apply if fruits and vegetables would degenerate during sale without such wrapping or if they are sold in bulk of 1.5 kg or more.

In February 2021, the **French Ministry of Ecological Transition signed a voluntary agreement with businesses to reduce single-use plastics in food delivery**. Five online food delivery platforms (Uber Eats, Deliveroo, Stuart, Tiptoque, CoopCycle), six restaurants with central kitchens, three packaging providers and five reuse network operators participate. The agreement targets to make 50% of all food deliveries plastic free by January 2022 and 70% by January 2023. The participants committed to stop adding single-use plastic cutlery and sauce containers already by March 2021. During 2021, the signees implement tests for applying reusable food and beverage containers in different cities, which serve to evaluate technical and economic aspects of reuse systems, potential challenges and customer reactions. The French Agency for Ecological Transition (ADEME) will support the implementation of tests by providing credits and gathering all results. The agreement also seeks to promote recycling by avoiding the most problematic plastic types from July 2021 on and ensuring 100% recyclability of packaging used by participating businesses from January 2022.[50]

Outlook

This guide was developed during the global **COVID-19 pandemic, which has led to many uncertainties and challenges for the gastronomy sector**, ranging from additional health and hygiene measures to various kinds of restrictions, temporary closures and financial constraints for businesses and employees. Initiatives to switch from single-use to reusable items and packaging need to take into account the situation of restaurants, takeaway stores and other gastronomy businesses. Their respective challenges vary between countries and cities and relate to the general socio-economic conditions and further development of the pandemic.

At the same time, the trend towards increasing food delivery and takeaway services during the pandemic has made the **switch towards more sustainable packaging solutions and business models even more necessary**. Public policies for phasing out or reducing certain single-use plastics such as cutlery, straws, plates, cups and food containers have therefore not stopped but progressed in Asia and Europe. In countries like France and Germany, public policies also directly promote the development of reusable food and beverage systems as alternative to single-use in the upcoming years.

While **changes towards reuse in practice** have been hampered by the uncertainties and challenges caused by the pandemic, they still progressed albeit at a lower speed than they might have without the pandemic. The examples outlined in this guide show that the development of reuse network operators is still in a start-up phase and on the verge to larger market dissemination in some countries. This process is highly dynamic and different reuse networks test different business models, types of reusable packaging, IT solutions, return logistics, washing logistics, and incentives to customers and restaurants for behavioural change. They can also be supported by respective policies and incentives.

This guide therefore provides a first overview based on the current situation without assessing the business concepts and performances in more detail. **Further research, observation, and analysis** of how such reuse models and systems develop over time in different countries would therefore be necessary to better understand what works well, which barriers exist, and how they can be overcome. Continuous exchange between relevant stakeholders within a particular city or country as well as internationally can contribute to this process.

While this guide has focused on the specific topic of promoting reusable packaging in food delivery and takeaway, it is embedded in the more **general approach of moving towards a circular economy and more sustainable production and consumption patterns**. For the gastronomy sector, topics such as food waste avoidance, sustainable energy use and separate waste collection with further sorting and recycling are also relevant. The promotion of reusable packaging, in turn, is also important in supermarkets, express delivery, and the logistics sector.

The concepts of reuse and sharing are gaining ground for all kinds of products from electrical and electronic equipment to furniture and bicycles – each product type requiring its own considerations. **The idea is to extend the lifetime of products to reduce the need of extracting primary resources, preserve ecosystems and mitigate climate change**. Switching towards a more sustainable economy is a precondition for enabling the provision of sufficient, safe and savoury food for all.

Annex

Examples of providers of reusable packaging[51]

AYA cup, Vietnam	'AYA cup' is a reusable cup system in Ho Chi Minh City, cooperating with coffee shops as well as stores for bubble tea and smoothies. Customers can return cups at the same shop or at other participating shops. http://ayacup.com/en_gb/
Kecipir, Indonesia	Kecipir is a social enterprise that strives to realise agricultural production, distribution, and consumption in a more equitable and environmentally friendly manner. It connects local organic farmers with consumers delivering their products in reusable vegetable baskets. Its circular delivery system, based on the zero-waste principle, has been implemented since mid-2019. https://kecipir.com/
CUPKITA, Indonesia	Since July 2020, 'Cupkita' is piloting reusable cups in Jakarta with some partner coffeeshops. Customers pay deposits through QR code scanning when they get their drinks and receive deposits back upon returning empty cups. 'Cupkita' then professionally cleans the cups and provides them again to participating coffee shops. 'Cupkita' is a joint venture between the start-up company 'Muuse' and the 'Zero Waste Living Lab' of the Dutch company 'Enviu'. https://cupkita.id; https://www.zerowastelivinglab.enviu.org/our-ventures/cupkita/
Muuse, Singapore / Jakarta / Hong Kong / Toronto / San Francisco	The start-up company 'Muuse' is based in Singapore but active in different cities in Asia and Northern America. It originally started in mid-2018 in Bali, Indonesia, with reusable, upcycled glass cups. With the launching of 'Muuse' in Singapore, the design switched to stainless steel and an integrated QR code. Today, 'Muuse' offers reusable cups and food containers in partner cafés, where customers scan QR codes to borrow cups and scan QR codes again upon return. Customers can return empty containers in all participating shops. Customers can join the system for free for takeaway. If they also want to use if for food delivery, they pay a membership fee of 3.50-5.00 Singapore Dollars per month but also benefit from discounts. Muuse partners with GrabFood and Foodpanda in Singapore. https://muuse.io/
Siklus Refill, Indonesia	The start-up company offers refill stations in stores and mobile refill stations for products such as shampoo, laundry detergents and cooking oil to replace single-use plastic sachets in Greater Jakarta. By switching to refill options, Siklus also intends to save money for their customers per unit of product. https://www.siklus.com/
Hepi Circle, Indonesia	Start-up that intends to replace single-use plastic sachets with refillable containers in Surabaya, Indonesia. http://www.hepicircle.org/

Examples of providers of reusable packaging

barePack, Singapore	'barePack' provides reusable food containers and cups through a digitalized system with QR code scanning. http://www.barepack.co/
reCIRCLE, Europe	Start-up company in Switzerland, which is also active in Germany, France and other European countries. It provides reusable food containers and cups through a deposit-refund system. http://www.recircle.ch / www.recircle.de / www.loopeat.fr /
REBOWL and RECUP, Germany	The start-up REBOWL, launched in 2020, follows a similar approach as reCIRCLE with a deposit-refund system for reusable food containers across Germany. Customers pay 5 € (Euro) deposit per box, which they get refunded from takeaway stores upon return. Stores wash the empty boxes and use them again for other customers. Takeaway stores pay a fee to participate in the system and can start with a trial period of 3 months. REBOWL is part of the start-up company RECUP, which had been created in 2016 to offer an alternative to single-use cups and has meanwhile build up a network of 5,000 participating vendors of beverages in reusable cups. http://www.recup.de; www.rebowl.de
FairCup and FairBox, Germany	The two companies also rely on deposit-refunds of 1 € for cups and 4 € for boxes. The difference to other providers is that they can also be returned in reverse-vending machines in supermarkets similar to bottles. The cups and containers were awarded the ecolabel "Blue Angel". Partner takeaway stores pay a regular fee – they either clean empty cups themselves or use an additional cleaning service. Founded in Göttingen, the company is active across Germany. http://www.fair-cup.de
Vytal, Germany	The start-up company, founded in 2019, provides a wide range of reusable containers for food and beverages – bowls in different sizes, coffee cups, but also packaging for sushi and pizza. Vytal is Europe's first digital system which works without deposit. Like in a library system, users can borrow containers with the Vytal app for free and have 14 days to return them. If containers are not returned within this period, they are sold to the user automatically. This leads to return rates of more than 99% within 14 days. Vytal is currently working with more than 1,700 restaurants, canteens and supermarkets mostly in Germany and Austria. http://www.vytal.org
Relevo, Germany	The start-up provides reusable food containers and cups, so far mainly in Munich and surrounding areas. It works through a smartphone application similar to Vytal and bare-Pack: customers scan a QR code when borrowing and returning reusable containers and cups. It works without deposit-refund but customers get a bill if they do not return them within 14 days. http://www.gorelevo.de
City cup systems (e.g. Freiburg Cup; Bamberg-Becher), Germany	Initiated in 2016 by Freiburg's municipal waste management company, it is a local solution for reusable cups. Customers pay 1 € deposit per cup and can purchase a reusable lid for 0,50 €. About 145 takeaway stores participate. In the city Bamberg, a local non-profit initiative has introduced a reusable cup system. A citizen pays once 4 € and gets a specific token that he or she can always exchange against a cup and then get back again at return. http://www.freiburgcup.de; http://www.bambergbecher.de;
Cup-for-Cup, Germany	The company is active across Germany and offers reusable cups for takeaway stores, bakeries, cafés and petrol stations with a deposit of 1 € per cup. Member stores pay daily or monthly fees and buy the cups. http://www.cupforcup.de
Cup-Cycle, Germany	The company provides advice, reusable cups and take-back machines for corporations and chains. http://www.cupcycle.eu

Examples of providers of reusable packaging

SwapBox, Netherlands and Belgium

The start-up company offers reusable food containers, bowls and cups with a 'pay-per-use pricing', i.e. restaurants pay for each time they hand out a reusable container. SwapBox offers the service for free to customers. Customers register to the system with a smartphone application and receive a personal code. Restaurants verify the account, scan QR codes and serve the food in reusable containers. Customers can return empty boxes at participating restaurants or other drop-off points and Swapbox cleans them in a central facility before redistributing them to restaurants. If customers do not return empty boxes after 14 days, their account gets locked, they can buy the box or return it by paying an extra fee of 1 €.
http://www.swap-box.com

Swap.Eat, Belgium

The reuse network in Brussels offers reusable containers against a deposit of 2 € to 4 €. Customers can bring empty containers back to participating restaurants and receive a voucher in return that they can use for new containers or for price reductions of food in participating restaurants. Swap.Eat uses recyclable glass containers suitable for microwaves and dishwashers.
http://www.swap-eat.com

Pyxo, France

Based in Paris, the company provides reusable food containers and cups across France. It sells them, offers collection and cleaning services with local partners, and applies a digital deposit-refund service. The food containers have integrated devices for a deposit-refund by cards. Pyxo cooperates with caterers and local deliverers.
http://www.pyxo.fr

La Consigne GreenGo, France

The start-up in Paris, created in 2018, provides a digitalised deposit-refund solution for cafeterias of big companies and for takeaway in supermarkets. Customers in such partner canteens can return glass food containers and plastic cups in collection machines and get their deposit refunded via a smartphone application.
http://www.laconsignegreengo.com

En boîte le plat, France

It provides reusable glass containers to restaurants in Toulouse and Rennes. It is managed through the non-profit association ETIC Emballages, founded in 2019 by seven citizens. Customers pay 3 € deposit and can return containers at participating restaurants and takeaway stores. It started with a crowdfunding campaign and a test phase of 3 months with 9 restaurants and currently has about 35 partners and 3 full time staff. ETIC has been financially supported by foundations and public agencies.
http://www.enboiteleplat.fr.

BoxEaty, France

Founded in 2019 in Bordeaux, it employs reusable glass boxes with a deposit of 4 €. Customers can return them in participating stores and either get a new glass box, a special chip for next time or the 4 € back. QR codes on each box indicate current partner stores (about 20 at the moment). BoxEaty has been financially supported by the Region Nouvelle-Aquitaine through the EU's European Social Fund.
http://www.boxeaty.fr

Dabba Consigne, France

Created in 2019 in Grenoble, it offers reusable glass containers to currently about 20 partner restaurants and takeaway stores, where customers can borrow and return them through a deposit-refund system. The name refers to the "dabbawallahs" in Mumbai, India. Dabbas Consigne has been supported by local business incubators and associations and public administration.
http://www.dabba-consigne.fr

Milubo, France

Founded in 2019 in Paris, it provides reusable cups and boxes with a deposit-refund system. It uses a smartphone application. About 40 coffee shops and restaurants are participating.
http://www.milubo.com

Examples of providers of reusable packaging

Uzaje, France

The start-up company, founded in 2019 in Neuilly-sur-Marne / Paris region, provides containers made of glass or metal to participating restaurants, caterers, retailers and canteens. It collects them and cleans them in professional washing facilities. Uzaje envisages to set up industrial washing centres for reusable food containers, cups and bottles across France. Amongst others, it cooperates with the French Producer Responsibility organisation for packaging CITEO, the French Agency for Ecological Transition ADEME and the bank BPI France.
http://www.uzaje.com/en

Reconcil, France

The start-up company founded in 2017 in Paris provides reusable plastic containers for food to participating restaurants. It regularly collects used boxes by bicycle and cleans them in an automatic washing machine. Customers in restaurants pay a 2 € deposit, which they get reimbursed in the restaurant or just exchange their empty box for a full box at their next purchase of a meal.
http://www.reconcil.fr

Ma Bouteille s'appelle Reviens, France

The project created by the association Locaverre in 2018 in the region Auvergne-Rhône-Alpes offers reusable bottles and glass containers to local producers of juice, wine, beer, honey, jam and yoghurt. Stores use a deposit-refund system for labelled bottles with a label and washes them. The project receives financial support from an EU Fund for regional development and several other partners.
http://www.ma-bouteille.org

Pandobac, France

Provides different types of reusable transport plastic crates to replace single-use cardboard, polystyrene or wood. It started in 2018 at the Rungis International Market in the Paris region. The crates can be used by wholesalers to transport e.g. fruits and vegetables, bakery products, cheese, fish and meat. Clients pay monthly fees of 3 € to 5 € per crate. Pandobac can digitally trace its crates and offers a cleaning service with an own professional washing center.
http://www.pandobac.com

Réseau Consigne, France

It is an association to promote deposit-refund systems in France. It connects different start-up companies, stakeholders and initiatives, organizes meetings and trainings and maintains a database with studies, reports and analyses. The association is supported by the French Agency for Ecological Transition ADEME.
http://www.reseauconsigne.com

Examples of providers of reusable packaging

rePhil, Austria	The start-up in Vienna, Austria, focuses on canteens, campuses, shopping centers and train stations. Customers download a smartphone application to scan QR codes when borrowing and returning reusable containers and cups. http://www.rephil.at
YoYo Boost Reuse, Netherlands	The start-up company offers reusable packaging solutions to cafeterias, canteens and other partners. It provides advise on reusable tableware and reuse systems, supports the implementation, training and communication, assists in monitoring impacts (e.g. re-usability rates, waste reductions and CO2 emission avoidance), and facilitates recycling at the end of life of reusable packaging. http://www.yoyoboostreuse.com
&Repeat, Sweden	&Repeat is a deposit-return system for take-away created in 2020 which covers 4 chains (40 restaurants). 0.4 € deposit is paid per take-away packaging. http://www.andrepeat.io
Swedish Return System, Sweden	It exists since 1997 and is a system of reusable pallets and crates for grocery distribution, involving about 1,500+ participating businesses in Sweden. The system is owned by the Trade Association for Grocery of Sweden (SvHD) and the Swedish Food & Drinks Retailers Association (DLF). It involves a user fee, deposit, and rent. http://www.retursystem.se/en
RePack, Finland and other European countries	The start-up from Finland has introduced a foldable reusable bag for e-commerce. It is meanwhile active in different European countries. http://www.repack.com
Green Caffeen, Australia	System for reusable cups across Australia with currently 589 participating vendors. It is free for customers but they have to scan codes when burrowing and if they do not return empty cups within 30 days, they pay 12.99 Australian $ (8.50 €). https://greencaffeen.com.au/

Online Food Delivery Platforms in East- and Southeast Asia

Southeast Asia

The two companies **'Grab' and 'Gojek'** are closely associated with motorcycle taxis for which they provide outfits and the digital booking system through a smartphone application.

- 'Grab' emerged in 2012 in Malaysia but is meanwhile active in eight Southeast Asian countries through its online platform for transport as well as the delivery of food, groceries and packages.[52]
- 'Gojek' was created in 2010 in Indonesia and aspires to offer an online application for different purposes. Gojek is active in Indonesia, Singapore, Thailand (under the brand 'GET') and Vietnam (under the brand 'GoFood').[53]

The company 'Foodpanda' is active across several Southeast Asian countries, including Cambodia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and some other Asian countries (e.g. Japan, Taiwan).

- 'Foodpanda' is part of the company **'Delivery Hero'**, which was founded in 2011 and is headquartered in Berlin, Germany. 'Delivery Hero' is active in food delivery and e-commerce in about 40 countries with other brands such as 'Talabat' in the MENA region, 'PedidosYa' in Latin America, 'Donesi.com' in the Balkans and 'Foodora' in Scandinavian countries. In August 2020, 'Delivery Hero' has been added to the 'Deutscher Aktienindex (DAX)', which lists Germany's 30 most important companies with regards to market capitalisation and trading volume at the Frankfurt stock exchange.[54]

The company **'Lalamove'** provides all kinds of delivery, including food delivery. 'Lalamove' was founded in 2013 and is active in 24 big cities in Asia, Latin America and the United States.[55]

In some countries, also smaller food delivery platforms have emerged to connect local drivers, restaurants and customers with a social business concept with low or without any commissions for drivers. One example for such **community-based food delivery apps** is 'Tam Sang – Tam Song' ('You order – We deliver') in Thailand, developed by researchers of the Chulalongkorn University.[56]

China

The two largest food delivery platforms **'Meituan Waimai' and 'Ele.me'** dominate over 90% of the food delivery platform business.

- In the third quartal 2020, the daily volume of 'Meituan Waimai' amounted to 34.9 million orders. It is a subsidiary to Meituan, one of China's leading e-commerce platforms for services with around 3.6 million online merchants. Meituan is an integrated platform for services, ranging from dining and food delivery takeaway to hotel booking, movie ticketing, air and train ticketing, and entertainment.
- 'Ele.me' provides a variety of delivery services mainly for food, including for supermarkets and stores. It covers more than 2,000 cities in China, with more than 1.3 million participating shops, 15,000 staff and more than 9 million daily orders. Besides these big online delivery platforms, also some fast-food brands and local restaurants provide their own food delivery services.

Endotes

1.
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3.
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