

CATALOGUE OF FIT-FOR-PURPOSE SOLUTIONS FOR CIRCULAR FOOD DELIVERY SYSTEMS IN THE BALTIC SEA REGION



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Interreg
Baltic Sea Region



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CIRCULAR ECONOMY

Change(K)now!



with contribution of all partners of the Change(K)now! project

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Credit: Thomas Panzau

1. Introduction

The catalogue of fit-for-purpose solutions for circular food delivery systems is the first deliverable of the project **Change(K)now! – A mindset change from single-use to circular or multiple-use food delivery systems in cities of the Baltic Sea Region (BSR)**.

The catalogue aims to match the solutions and practices to the challenges of circular food delivery systems in the BSR municipalities. It presents examples of circular food delivery approaches and needs for the further development of circular food delivery systems in the BSR. Thus, it is a background study that can be used as a basis for developing Change(K)now! solutions in Group of Activities 1.2–1.5.

A circular food delivery system refers to a closed-loop cycle where resources are conserved, waste is minimised, and environmental impact is reduced. In the Change(K)now! project, circular food delivery system focuses on municipalities and municipal entities, food delivery businesses, and customers. These players can drive the mindset change in food delivery from single-use to multiple-use crockery and packaging.

The main parts of the catalogue are the chapters that summarise the results of mapping the current approaches to circular food delivery (Chapters 3.1-3.2) and the results of the survey on barriers and needs (Chapter 3.3). Chapter 4 presents examples of circular food delivery approaches from nine countries (Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Sweden and Norway).

The compilation of the catalogue was led by the Stockholm Environment Institute Tallinn Centre with contributions from all Change(K)now! project partners.

2. Methodology

The mapping of the circular food delivery approaches was carried out in December 2023–March 2024. A template (see [Annex 1](#)) was used to collect examples – primarily from the Change(K)now! partner countries and municipalities, as well as Sweden and Norway. The project partners filled in the templates based on the publicly available information (websites), as well as additional data sources, such as interviews. The information from the templates was integrated into three key summary paragraphs (if the respective information was available): description of the solution/approach, strengths and limitations.

In total, 43 examples were collected from all BSR countries. The examples (see [Chapter 4](#)) introduce the strategic framework and practical solutions in three catering clusters (institutional catering, public events and food takeaway (Table 1)).

Table 1. Number of examples per country

COUNTRY	STRATEGIC SOLUTIONS	PRACTICAL SOLUTIONS
Denmark		5
Estonia	1	7
Finland	2	4
Germany	2	9
Latvia	1	2*
Lithuania	1	1
Poland		3*
Sweden		2
Norway		1
EU-wide initiative		1
TOTAL	7	35

*As of April 2024, the provision of one solution has been (temporarily) stopped.

The aim of the **survey on barriers and needs** among the project partners was to assess and map the readiness of municipalities and other actors for the shift from linear food delivery models to circular solutions, thus contributing to the development of Change(K)now! solutions ([Chapter 3.3](#)).

The survey was carried out in February–March 2024 among the project partners (see the questionnaire in [Annex 2](#)). The survey resulted in 11 responses from 14 partners. If there were more than one partner from a municipality or country, they filled in one questionnaire (Hamburg, Latvia, Finland).

2.1 How to use the catalogue

The catalogue is organised according to the levels of measures and types of catering: 1) municipal strategic management, 2) institutional catering at public entities, 3) catering at public events, and 4) food takeaway and home delivery. Several thematic examples are suitable for more than one category; these have been classified in Chapter 4 according to the main category where they fit the most.

The examples of solutions/approaches can be chosen according to the:

- circular food delivery strategy ([Chapter 3.1](#))
- reusable packaging scheme ([Chapter 3.2](#))
- type of solution provider ([Chapter 4](#))

3. Approaches to circular food delivery

3.1 Circular food delivery strategy

The examples of the catalogue ([Chapter 4](#)) describe the following circular food delivery design/ strategies approaches:

1. **Prevention/reduced packaging** – the reduction of overall packaging in food delivery to reduce material consumption and transportation costs/impacts. For example, cafes that do not serve anything in disposable packages.
2. **Reuse systems** – encourage reusable packaging that can be returned, cleaned, and refilled; implement deposit systems to incentivize customers to return packaging for reuse.
3. **Repair of food packaging/crockery** – extend the lifetime of packaging/crockery.
4. **Sustainable packaging materials** – innovative, ecological and easily recyclable materials/designs with the least impact overall.

The majority of current circular food delivery solutions (26 examples) focus on reuse systems (cups, bowls, trays, etc. – both conventional and innovative reuse systems (Table 2)). The predominant material for reusable containers is plastic. A few cases focus on reduced packaging (4 examples) and alternative materials (glass jars, edible packaging, textile napkins).

No examples of the use of innovative, ecological materials that could be easily recycled for circular food delivery were found in the Baltic Sea region countries. The two examples of food packaging made of bioplastics (see Table 2) save the use of fossil raw materials and are reusable but still generate waste.

Biodegradable/compostable plastic cannot be entirely regarded as a sustainable material because it does not get composted in nature but only under very specific conditions in an industrial facility. Therefore, the practical applications for compostable plastic are extremely limited, and compostable plastic products are usually incinerated. Furthermore, compostable plastic should never be sorted as plastic waste, as the additional additives it contains can degrade or ruin the quality of recycled plastic.

Table 2. Examples of solutions of circular food delivery strategies/approaches

Approach/ strategy	Link to CHAPTER	EXAMPLES*
Prevention/reduced packaging	4.2.3 4.4.9	"Drink tap water" project in schools (PL) Edible cutlery and bowls – Spountainable (DE)
Own packaging	4.2.1 4.1.6	Own packaging for surplus school food (FI) Kehrwieder discount alliance (DE)
Reuse systems	4.2.2 4.2.4 4.2.6 4.2.7 4.3.1 4.3.2 4.3.3 4.3.4 4.3.5 4.3.6 4.3.7 4.3.8 4.3.9 4.3.10 4.3.11 4.4.1 4.4.2 4.4.3 4.4.4 4.4.5 4.4.6 4.4.7 4.4.8 4.4.10 4.4.11 4.4.12 4.4.13 4.4.15	Refillable drinking bottles at schools – Waterschool project (DE) Reusable thermoses for delivering food at schools (PL) Reusable food trays in the army (EE) Lunch in glass jars for workplaces without a canteen (DE) Deposit cups and plates at Breminale festival (DE) Deposit cups and plates at the Hamburg DOM fair (DE) Deposit-free tableware and deposit cups at Norden festival (DE) Cashless deposit with a wristband at OMR Festival (DE) Deposit cups at Riga's Christmas market (LV) Deposit cup rental service – Panditops (EE) Deposit cup rental service – Topsiring (EE) Deposit cup rental service – CupCup (LT) Deposit cup rental service – GreenCup (FI) Deposit cup rental service – Genkrus (DK) Mobile washing service for events – Mobilopvask (DK) The Tap & Reuse system – Kleen Hub (DK) Deposit system for takeaway packaging – New Loop (DK) Circular and digital packaging solutions – Cirqle (DK) RECUP and REBOWL deposit system (DE) Reusable food packages and platform – Ringo (EE) Reusable food and drink containers – RingKarp (EE) Return kiosk with instant deposit refund or app-based system – Cuploop (EE) Reverse vending machines for bottle and can recycling – Tomra (NO) Icecream in glass jars and edible packaging – Molberts (LV) Food delivery in glass jars without a deposit from restaurants (LV) Food delivery in glass jars with QR codes or deposit – VegeVek (PL) Reusable crockery, cutlery and glassware – Duni (SE) Reusable packaging for food home delivery – Baun (EE) and Gordon Circular (SE)

Bioplastic packaging material	4.2.5 4.4.14	Reusable lunch boxes from bioplastics for school starters – Bio-Brotbox (DE) Reusable food packaging from bioplastics – FKUR (DE/USA)
Repair	4.2.8	Repair of ceramic plates (FI)
Other	4.2.9	Reusable napkins for senior centre patients (FI)

* Green – institutional catering; blue – public events; red – food takeaway and home delivery

3.2 Schemes for reusable packaging

The reuse systems can include the following main schemes with return incentives or discounts:

1. **The deposit system** – the customer pays an upfront deposit (price of the packaging) that is refunded when the cup/container is returned.
2. **Tracking through the app** – the customer must download an app, create an account and provide bank card information. When the customer takes out a reusable item, e.g., a plate, it is registered together with an earmarked deposit on the customer's online account. Upon returning the cup/container, the earmarked deposit is deleted. If the cup/container is not returned within a specified period, the customer is charged for the item.
3. **Discount** – offering a discount to customers who bring their own reusable cups/containers.

In addition, drinks and meals can be **served at no extra fee**, e.g. in simple reusable cups or on rescued (old) plates, which are encouraged to be returned for reuse.

In the catalogue, the following examples describe the above-listed schemes for reusable food and drink packaging (Table 3):

Table 3. Schemes for reusable packaging

SCHEME	Link to CHAPTER	Examples
Deposit refund in cash or to the bank card	4.3.1 4.3.2 4.3.5 4.3.6 4.3.7 4.3.8 4.3.9 4.3.10 4.4.4 4.4.12	Deposit cups and plates at Breminale festival (DE) Deposit cups and plates at the Hamburg DOM fair (DE) Deposit cups at Riga's Christmas market (LV) Deposit cup rental service – Panditops (EE) Deposit cup rental service – Topsiring (EE) Deposit cup rental service – CupCup (LT) Deposit cup rental service – GreenCup (FI) Deposit cup rental service – Genkrus (DK) RECUP and REBOWL deposit system (DE) Food delivery in glass jars with a deposit – VegeVek (PL)

Deposit refund to bank card, based on scanning QR codes	4.4.2 4.4.5 4.4.6 4.4.15	Deposit system for takeaway packaging – New Loop (DK) Reusable food packages and platform – Ringo (EE) Reusable food and drink containers – RingKarp (EE) Reusable packaging for food home delivery – Baun (EE)
Instant deposit refund to bank card, based on RFID tags	4.4.1 4.4.3 4.4.7	The Tap & Reuse system – Kleen Hub (DK) Circular and digital packaging solution – Cirqle (DK) Return kiosk with deposit or app-based system – Cuploop (EE)
Tracking through the app	4.3.4 4.4.7	Cashless deposit with a wristband at OMR Festival (DE) Return kiosk with deposit or app-based system – Cuploop (EE)
Discount to customers who bring their own cups/jars	4.1.6 4.4.10	Kehrwieder discount alliance (Hamburg, DE) Icecream in glass jars – Molberts (LV)
No charge scheme	4.3.3 4.4.11	Deposit-free tableware at Norden Festival (DE) Food delivery in glass jars without a deposit from restaurants (LV)

3.3 Barriers and needs

The following sub-chapters outline the survey results on the main barriers and needs in the strategic framework, institutional catering, public events, and food takeaway activities to support circular solutions.

3.3.1 Strategic framework

While countries have imposed at the national level tax/increased cost on single-use packaging for consumers, the survey reveals that there is a need for **national regulation** that supports reusable food packaging for takeaway and home delivery (Figure 1). In most EU countries, it is not a municipal but a national-level task to work with packaging. However, municipalities can set criteria for public events and procurement as well as test reusable packaging on a local scale with voluntary entrepreneurs.

Guidance materials to help entrepreneurs implement a circular food supply system are equally important. Even if national or municipal-level guidance materials exist, they should be disseminated continuously and more widely.

Promoting the circular food delivery systems is primarily done in the interest of the municipality and government. However, if no specific goals and guidelines are set at the local or national level, then this topic is not significantly **communicated**.

In addition to putting more effort into raising awareness, local authorities would require more **time and resources** to **monitor compliance** with the obligation to use multiple-use crockery at public events.

Besides local businesses, municipalities would need more information about the circular food delivery options and systems, too, e.g. about possible use areas, choice of materials, and waste statistics. The policy makers need such technical knowledge to ensure effective legislation.

Thus, municipalities can support circular food delivery by various means: raising awareness, introducing **local-level** prohibitions or restrictions on single-use disposables (in internal and public events), but also by adding respective criteria into procurement contracts, including for school catering. However, circular food delivery is not yet part of the model contracts for school catering everywhere.

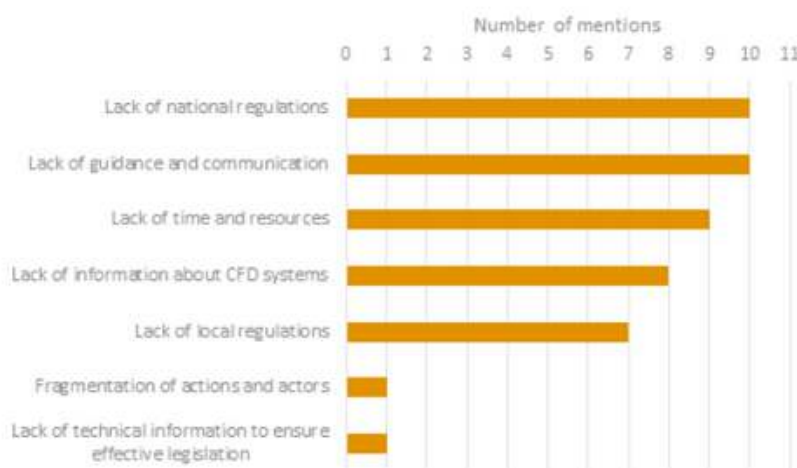


Figure 1. Strategic level barriers to circular food delivery systems (n=11)

3.3.2 Institutional catering

In order to implement circular food delivery along the value chain, **goals and binding requirements** should be set for food packaging in the catering of municipal institutions, e.g., reusable large containers (Figure 2).

However, setting goals and imposing requirements should be supported by providing guidance on how to procure circular solutions. While municipalities may have knowledge of alternatives to single-use tableware, they lack **knowledge of technical solutions and guidance** for procuring food in alternative packaging. Several examples were brought out in the survey:

- Large containers as a reusable system for large kitchens are still missing; reusable boxes for legumes, meat or bread are available, but not for other food groups;
- Bulk systems for big kitchens are available, but not for all food groups. Circular bulk systems only work with boxes but not with jars for liquids or milk products;
- Some food needs special storage conditions (e.g. fresh meat), or some coffee machines cannot fit all-size cups etc).

In some cases, the regulations concerning food and hygiene may constrain the development of technical solutions for circular food delivery systems.

In addition, the kitchens may not accept the circular solutions if the costs are too high, e.g.:

- some of the bulk groceries (like rice, lentils or pasta/noodles in package-free stores may be more expensive than in conventional stores);
- the lack of different sizes of reusable containers may make circular options more expensive.

Thus, as pointed out in the survey, there needs to be a balance between different development targets: economics, ecological impacts, etc.

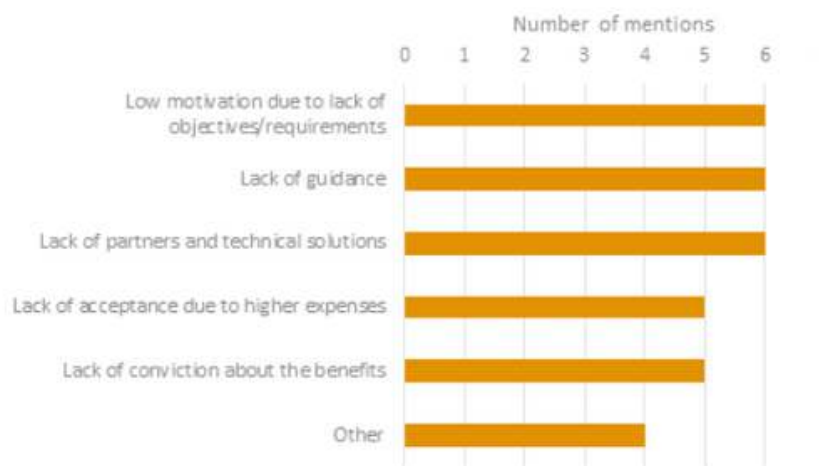


Figure 2. Barriers to circular food delivery systems in institutional catering (n=11)

3.3.3 Public events

In public events, the lack of acceptance by food stall operators and event organisers is clearly the most frequent barrier to circular food delivery systems (Figure 3). This barrier was explained by **higher expenses** (reusable items may cost more than disposal items for operators), technical challenges like **logistic and spatial requirements**, and additional administrative efforts (preparation, contracts, etc.) required to shift to reusables. If the operators are **not obligated or personally motivated** to use circular crockery, they choose the easier option.

It can be difficult for the organiser to **choose the solution** that fits the event right if there is little experience. Every solution needs consideration and preparation; every option has benefits and disadvantages. For example, using an app-based system solves the problem of high deposit requirements, such as for families, but the app requires a good network connection (which can be a problem at large events like festivals). The organisers must also consider how to fit the event into the budget, e.g., whether to add a fee for washing and transport service to the deposit of a cup which the customer will not get back, or hide a handling fee in the entrance ticket. For participants in sports events (such as marathons), only the latter option is suitable.

On the other hand, in some countries or municipalities, there are **too few or no full-service providers** for circular solutions at large-scale public events (e.g. Latvia, Lithuania, Poland). Transporting cups for washing over a long distance may significantly increase the CO2 footprint of the event.

Also, **technical solutions** differ between countries and municipalities. For example, it is not possible to recover the deposit on the card in Latvia. It is possible to pay for the deposit by card, but there is currently no option to return the deposit fee to the card.

Legal constraints were mentioned the least as a barrier. Rather, the barrier is the lack of regulatory obligation or monitoring of compliance with the regulation, as also mentioned above. For instance, in Germany, there is a legal obligation for all businesses to offer reusable food and drinks as an alternative. However, there are many exceptions to this regulation, so many businesses do not know whether they are affected. Furthermore, the regulation is neither monitored nor sanctioned, which is why it is not followed. At the moment, it is rather a voluntary decision of the event organiser to adopt strict rules for their own event.

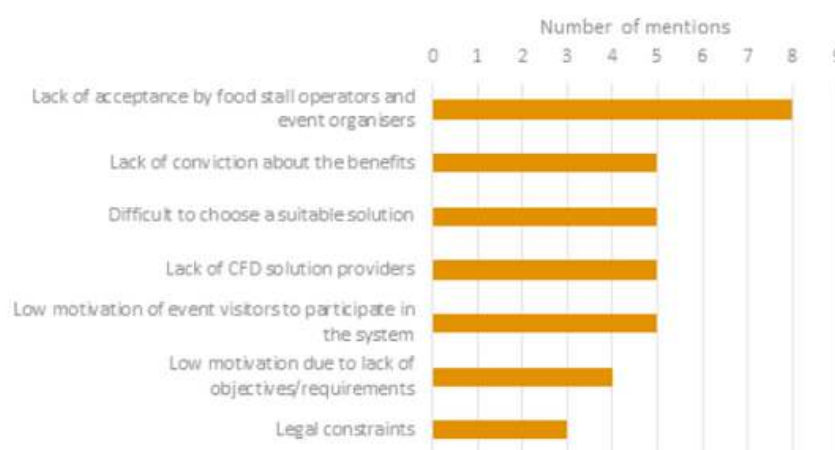


Figure 3. Barriers to circular food delivery systems at public events (n=11)

3.3.4 Food takeaway and home delivery

The most often mentioned barriers to circular food delivery systems in takeaway and home delivery was a lack of acceptance by customers due to **inconvenient return possibilities** or **complicated systems** in general (Figure 4). Thus, from the consumer's perspective, the circular food delivery system has to be convenient. It is crucial to have a proper return system with a sufficient number of return points. On the other hand, in Anykščiai district, there are currently no return points and no service providers for reusable packaging.

However, the convenience of return possibilities may not be the first barrier if the **deposit price** is high and getting the money back is difficult.

If the container is available to return the dishes without asking for a deposit, the customers prefer the reusable dishes, but the proportion of returned containers decreases significantly. Thus, if a deposit packaging substantially increases the price and, at the same time, reduces the convenience of the service, then most customers do not prefer reusable dishes voluntarily.

It may also confuse potential customers if there are different circular food delivery systems on the market. Some customers may find it difficult to use a QR code, or they do not want to carry a cup or bowl with them after consumption, or it takes too many days to get the deposit back.

From the perspective of **reusable food packaging operators – cafés and other caterers**, it may be an issue if they need to order too many cups and pay in advance. **Logistics, storage, and washing** requirements and capabilities can also be issues. However, many cafés store single-use packages, so there should be no major problems with storing reusable packages.

In addition, if circular food delivery leads to **higher costs**, nobody in the catering sector wants to reduce their competitiveness with higher prices because the competition is high and the consumers are generally price-sensitive.

Also, the caterers need to take into account that explaining the circular system to the customers can be **time-consuming**, especially if reusable dishes are offered next to disposable ones.

Since the lack of ability to scale the circular food delivery system up and down was also mentioned as one of the barriers in several municipalities, there is a need for such reusable packaging service providers who can offer the service **to large numbers of customers** at a time.

Finally, more staff in the food supervisory authority would be required to **check compliance** with the reusable packaging obligation to reuse and impose sanctions.



Figure 4. Barriers to circular food delivery systems in takeaway and home delivery (n=11)

4. Examples of existing circular food delivery approaches



Credit: Florian Reimann, DUH

4.1 Strategic management and communication framework





4.1.1 Criteria and tools for responsible public food service procurement and delivery (Finland)



STRATEGIC FRAMEWORK



PUBLIC PROCURERS



INSTITUTIONAL CATERING



CITY AUTHORITIES



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description:

The Ministry of Agriculture and Forestry of Finland was leading the development of the criteria and tools for responsible food and food service procurement, which are addressed to all public procurement units that purchase goods and consumables for institutional kitchens (schools, hospitals, etc.).

The criteria and tools contribute to achieving the vision of the National Public Procurement Strategy 2020: Finland will be a European pioneer in public procurement management, competence, utilisation of knowledge, innovativeness and economic, ecological and social responsibility.

The tools in the framework of sustainable food procurement (incl. guidances for practitioners) address the following fields: strategic management, public procurement skills, data management, impact assessment, feasible procurement processes, financial viability, social viability and ecological viability. In food delivery, the aim is to reduce packaging waste and enhance the circularity and multi-use of food delivery packages instead of one-time use.

The criteria bank (<https://kriteeripankki.fi/>) provides procurement experts with criteria and goals, such as for sustainable and recyclable food packaging.

Strengths:

The criteria and tools are practical and easy to adopt. However, for the broad uptake of the criteria and tools at the local level, municipalities must also develop procedures for their application.

Read more:

- Criteria and new tools for responsible food and food service procurement: <https://www.hankintakeino.fi/fi/materiaalipankki/kriteerit-ja-uudet-tyokalut-vastuullisiin-elintarvike-ja-ruokapalveluhankintoihin>
- Procurement guide for responsible food services: <https://julkaisut.valtioneuvosto.fi/handle/10024/164611>
- Guide to responsible food procurement: https://www.motiva.fi/files/21431/Opas_vastuullisiin_elintarvikehankintoihin_-_suosituksia_vaatimuksiksi_ja_vertailukriteereiksi.pdf



4.1.2 Municipal regulations for events on properties, streets and venues of the city (Hamburg & Munich, Germany)



STRATEGIC FRAMEWORK



PUBLIC PROCURERS



INSTITUTIONAL CATERING



CITY AUTHORITIES



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description:

Hamburg:

Currently, the city districts of Hamburg are advised to request that events on properties, streets and venues of the city use reusable packaging, cutlery and containers that require a deposit. The city provides a guide to event organisers on the legal possibilities with regard to the request to prevent and reduce waste.

From mid-2024, this advice will be sharpened by making the above requirement generally **mandatory**. Every exception will require a permit from the municipality. Reusable containers brought by customers will also be permitted. Weekly markets will be exempt. More details will follow once the new law is passed.

Munich:

At events **on properties, streets and venues of the city**, food and drinks **may only be served** in reusable packaging and containers that require a deposit and only with reusable cutlery (e.g. at the Munich Oktoberfest). All single-use tableware is forbidden. Exceptions to this obligation may only be permitted in special individual cases. Any funding of facilities and events will be made dependent on compliance with this obligation (§4(8)) <https://stadt.muenchen.de/rathaus/stadtrecht/vorschrift/273.html>

Since January 1, 2023, restaurants, cafés, bistros and delivery services have been **obliged to offer a reusable alternative** if single-use plastic packaging is used for takeaway food and drinks. The amendment to the Packaging Act regulates this in § 33 and § 34, which applies to all of Germany.

The reusable alternative may not be offered under worse conditions or be more expensive than the same product in disposable packaging. Using a deposit is permitted. The reusable packaging handed out by shops must also be taken back. Other packaging does not have to be accepted.

Customers must be informed at the point of sale by means of clearly visible and legible information boards or signs that they can receive goods in reusable packaging.

There are exceptions for small businesses, such as snack bars that have no more than five employees and whose sales area does not exceed 80 m². Nevertheless, they are obliged to fill reusable items brought by customers.

Read more:

- Munich: <https://www.ihk-muenchen.de/de/Service/Umwelt/Kreislaufwirtschaft/Mehrwegpflicht/>

4.1.3 Municipal regulation and rules for organising sustainable events (Tallinn, Estonia)



STRATEGIC FRAMEWORK



PUBLIC PROCURERS



INSTITUTIONAL CATERING



CITY AUTHORITIES



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description:

In 2019, the Tallinn City Government banned single-use plastic cups and cutlery in its public events, allowing only reusable or compostable (EN 13432) dishware to serve food and drinks in a public event. However, this ban did not significantly decrease the amount of single-used fossil-based plastic dishes. Therefore, Tallinn amended this regulation (rules for organising and holding public events in Tallinn) by banning all single-used dishes made of any material and allowing only reusable ones. Since June 2023, all public events in Tallinn, accommodating up to 30,000 visitors per day, and starting from January 2024, all public events, irrespective of visitor numbers, are **mandated to exclusively serve food and drinks in reusable containers (cups, plates, bowls) and use reusable cutlery**. Disposable straws and cocktail garnishes not made of plastic (including bio-based plastic), oxidatively degradable plastic, or biodegradable plastic are permissible.

Tallinn implemented the mandatory reuse of food packaging earlier than the state – all over Estonia, only reusable containers and cutlery for serving food and drinks at public events have been allowed since January 2024, according to the Packaging Act.

The rules for organising sustainable public events, adopted in 2023, encompass minimum requirements for event planners across various categories, including waste management, materials and purchases, catering and water use, transport, energy and resource efficiency, communication and impact on the community and environment. The overall aim is to reduce the environmental footprint of public events.

The rules are mandatory for all city authorities and their partners when organising conferences, seminars, receptions, charity or entertainment events, competitions, performances, trade events, or any similar gatherings of people hosted by city institutions.

Strengths:

After adopting the regulation, an increasing number of reusable food packaging solution providers have entered the market.

Public events that have piloted reusable dishware (incl. the youth song and dance festival, marathons, etc.) are satisfied with the results. The amount of waste has decreased remarkably, and reusable containers and cutlery have become convenient with the proper organisational approach (service provision, collection system, clear communication, informative materials and guides, early involvement of all stakeholders, etc.).

Read more:

- Rules for organising and holding public events in Tallinn:
<https://www.riigiteataja.ee/akt/410062014016?leiaKehtiv>
- Rules for organising sustainable public events:
<https://greentallinn.eu/innovation/keskkonnasobralike-urituste-juhend/>



4.1.4 Municipal regulation on reusable packaging in street trade (Riga, Latvia)



STRATEGIC FRAMEWORK



PUBLIC PROCURERS



INSTITUTIONAL CATERING



CITY AUTHORITIES



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description:

New municipal regulations on coordinating street trading during events and temporary street trading came into force on January 1, 2024.

According to this regulation, the trade organisers and merchants are prohibited from selling drinks in non-reusable cups at public events and temporary street markets.

Riga is currently the only city in Latvia where such regulation has been adopted.

Read more:

- Riga City Council's regulation (paragraph 88.11): <https://likumi.lv/ta/id/322921-par-kartibu-kada-tiek-saskanota-un-organizeta-ielu-tirdznieciba>



4.1.5 Municipal regulation on reusable packaging in street trade (Utena, Lithuania)



STRATEGIC FRAMEWORK



PUBLIC PROCURERS



INSTITUTIONAL CATERING



CITY AUTHORITIES



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description:

The Municipal Council of Utena District adopted the Rules of Trade and Provision of Services in Public Places of Utena District Municipality in 2020. According to the rules, single-use plastic dishes and cutlery are prohibited at public events.

The rules apply to vendors who provide services at public events in temporary facilities, such as kiosks, specialized cars, car trailers, pavilions, and outdoor cafes.

The aim of the regulation is to decrease the amount of single-use plastic during public events.

From other Lithuanian municipalities, for example, the city of Vilnius has banned disposable plastic items from being used during any city events as of March 2020.

Read more:

- Utena Municipal Council's rules (paragraph 26): <https://www.e-tar.lt/portal/lt/legalAct/aa3a5c60fa4f11e5a52397090a2fa158/asr>
- City of Vilnius: <https://zerowastecities.eu/vilnius-says-no-more-single-use-plastic/>



4.1.6 Reusable to-go cup concept of the City of Hamburg (Germany)



STRATEGIC FRAMEWORK



PUBLIC PROCURERS



INSTITUTIONAL CATERING



CITY AUTHORITIES



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description:

In 2017, the Hamburg Agency for Environment and Energy initiated the Kehr wieder project in order to reduce waste from disposable coffee cups. According to Stadtreinigung Hamburg, 13% of waste in public waste bins were disposable cups; this amount equals around 165,000 coffee-to-go cups in Hamburg every day. The Hamburg Agency for Environment and Energy issued a grant for a coherent concept of the long-term operation of a privately supported deposit-based reusable cup system that can be implemented in Hamburg. The concept consists of two parts:

- Widespread implementation of the reusable cup system – launched by RECUP,
- Kehr wieder discount alliance – a campaign together with Hamburg cafés and bakeries to encourage customers to use their own cups when they buy a drink and to get a discount on them.

RECUP deposit cups are available with a takeaway discount in 260 cafés and stores within Hamburg (as of December 2023). Furthermore, the Hamburg transport company Hochbahn uses RECUP cups with all bus drivers and other Hochbahn employees, as well as the bakery company Dat Backhus, which has 118 branches. Hamburg government canteens are also taking part, for example, the health authority canteen in Hamburg-Rothenburgsort. The supermarket chain Rewe, with the "Allwörden" and "Nur Hier" pre-checkout bakeries in 29 stores, participate, as well as many smaller cafés and individual stores. The funfair Hamburger Dom is a partner of the RECUP deposit system, serving coffee at 35 locations. If customers bring their own cups to get them filled with coffee in cafés and shops that have joined the Kehr wieder initiative, they get a discount of between 10 and 30 cents on coffee. The locations participating in the Kehr wieder alliance can be recognised by the Kehr wieder logo on the door. There is also an online map where one can find all participating locations for RECUP and the Kehr wieder initiative (on their respective websites). To link the Kehr wieder discount alliance and the RECUP deposit system, cup lids with the Kehr wieder logo are available in Hamburg.

Strengths:

The initiative is a win-win situation for all parties: the selling points do not need to buy single-use cups. The customers get a discount on their coffee drink when using a refill cup. All parties participate voluntarily; thus, there are no restraints or penalty fees. Up to now, the implementation of the project has been successful, and there are more and more places to participate. For example, the Hamburg transport company Hochbahn saves 560,000 disposable cups a year with deposit cups. The canteen of the health authority in Hamburg-Rothenburgsort has just introduced the RECUP, and the canteen of the police academy will follow shortly: the savings potential at these two locations is around 100,000 disposable cups per year.

Read more:

- <https://www.hamburg.com/residents/green/11852664/kehrwieder-initiative/>





4.1.7 Environmental objectives of a catering company – Päijät-Hämeen Ateriapalvelut Ltd (Finland)



STRATEGIC FRAMEWORK



PUBLIC PROCURERS



INSTITUTIONAL CATERING



CITY AUTHORITIES



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description:

The environmental objectives have been developed together with the team and product development manager of Päijät-Hämeen Ateriapalvelut Ltd. The company has set these guidelines for their operation.

Päijät-Hämeen Ateriapalvelut Ltd is partly owned by the City of Lahti. The company provides catering for most of the schools in Lahti – it has four production kitchens and 55 service kitchens, serving 16,000 portions/day.

The environmental objectives have been set by considering the environmental goals of the city of Lahti and the United Nations SDG goals. Indicators have been established for these objectives, which are monitored semi-annually. The environmental objectives are:

- Minimization of waste generation and sorting waste,
- Reduction of bio-waste quantity,
- Reduction of energy and water consumption,
- Mitigation of environmental impacts from transportation,
- Reduction of detergent consumption,
- Environmental communication.

In Finland, school lunch is generally served using porcelain plates, glass for drinking, and metal cutlery. To wash those, Päijät-Hämeen Ateriapalvelut uses ecolabelled washing detergent. Some schools in Lahti serve food without trays, which saves water, detergent, and energy. Eliminating trays also reduces food waste.

Reducing food waste saves money and the environment. The amount of biowaste is monitored by using a waste management program. In food procurement, special attention is paid to the traceability and safety of ingredients. Local producers and seasonal ingredients are prioritised.

Päijät-Hämeen Ateriapalvelut has made two Sustainable Development pledges and committed to the following: 1) reducing the amount of biowaste and 2) reducing the amount of cleaning and washing agents and increasing the use of environmentally friendly cleaning agents.

The pledges can be followed at: <https://sitoumus2050.fi/toimenpidesitoumukset#/details/591211>

Strengths:

Systematic development and management pay off. Päijät-Hämeen Ateriapalvelut has received awards, e.g., for the SDG pledges and development work on school food.

Read more:

- <https://www.paijatateria.fi/>

4.2 Institutional catering





4.2.1 Own packaging for surplus school food (Päijät-Häme, Finland)



STRATEGIC FRAMEWORK



SENIOR CENTRE



INSTITUTIONAL CATERING



ARMY



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description:

The catering services of Salpaus campuses started to use the solution in four locations in Lahti (2 campuses), Heinola and Asikkala in the autumn of 2023.

The solution was developed by the eco team – a team of employees who are responsible for the organisation's environmental programme.

The catering services hand out surplus food for pupils in Salpaus Further Education daily. The pupils pack the food themselves in their own packaging. There are some limitations for packaging: volume max 1 litre, decent and clean.

The solution contributes to the prevention of food waste and packaging materials. Before the solution, the amount of food waste was about 8,000 kg/a year; now, the amount of waste is about 80% less than before. Pupils use their own packaging mainly; they only occasionally purchase packaging that costs 0.50€.

Strengths:

The catering services have received only positive feedback. The amount of food waste has decreased, and single-use packaging is minimal. There is also a positive social aspect, e.g. increased well-being of pupils, since they receive nutritious food that they can eat after school. When pupils use their own packaging, there is less mess due to more sturdy packaging than the single-used ones.

Limitations:

Initially, when no rules were in place, some misbehaviour was detected. After the guidelines were introduced, things worked out well.

The only issue is the timetable. The surplus food must be delivered right after lunch (due to regulations), which causes little pressure.

Handing out food is a bit in a grey area, whether pupils' own packaging is clean enough, etc.

Read more:

- News article and video: <https://yle.fi/a/74-20066209>



4.2.2 Refillable drinking bottles at schools – the Waterschool project (European-wide initiative)



STRATEGIC FRAMEWORK



SENIOR CENTRE



INSTITUTIONAL CATERING



ARMY



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description:

Waterschools is an EU-wide project co-funded by the Erasmus+ Programme to support schools in communicating messages about the importance of drinking water.

The Waterschool project supports the EU Plastic Strategy by encouraging initiatives that reduce single-use plastic bottles and developing teaching materials for children to protect the environment from plastic pollution.

Furthermore, the project encourages kids to use a refillable drinking bottle to support a circular food delivery system. Plastic waste from bottles has become a massive threat to our environment. Most European regions enjoy good access to high-quality drinking water. Drinking tap water in Waterschool reduces waste from single-use plastic bottles and raises awareness of water quality.

Key steps:

- The school decides to become a Waterschool.
- Training sessions with teachers to plan the implementation of Waterschool.
- A waste collection campaign in school to demonstrate how much waste plastic bottles of soft drinks generate.
- Sessions with pupils on how to reduce plastic bottle waste.
- Joint decision with the parents' association to remove vending machines from the school.
- Organising refillable drinking bottles for the pupils.

Strengths:

Kids will drink more water (for health reasons), plus less single-use plastic will be produced, and the circular food system will be empowered by using reusable/refillable drinking bottles.

Read more:

- <http://www.waterschools.eu/>
- Good examples from Waterschools: <http://www.waterschools.eu/case-studies>
- Planet Friendly Schools: <https://www.planetfriendlyschools.eu/projects/water-school-1>





4.2.3 "Drink Tap Water" project at schools (Szczecin, Poland)



STRATEGIC FRAMEWORK



SENIOR CENTRE



INSTITUTIONAL CATERING



ARMY



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description:

The project was developed in 2023 by the Department of Water Supply and Sewage – ZWiK Szczecin. The aim is to shape eco-friendly attitudes and reduce the use of plastic bottles. Through education in schools and participation in municipal events, we try to reach as many residents as possible. We explain to them that tap water is healthy, tested, and drinkable.

The "Drink Tap Water" project involves broadly educating children and adults about replacing bottled water with that from the tap. Our project will not only contribute to reducing the amount of plastic in our environment but also strengthen pro-health habits in the youngest. The launch of our project is just the beginning of educating the residents of Szczecin and installing the water drinkers. We definitely want more water taps in schools and urban spaces. Twenty-three schools were selected for the project, where we installed 40 water drinkers. The wall-mounted water dispenser for filling bidons is activated by a button built into the housing. Such devices are very convenient to use and have a spout that reduces splashing.

By providing children with constant access to fresh, clean drinking water, we have a chance to ingrain good eating habits in them. Although children are very eager to choose sweet, colourful drinks, having clean water at hand, they will reach for it more often and quickly notice that it quenches thirst better. Thanks to parents and teachers, children will also understand that tap water is much healthier than most "bottled" products. By building positive associations in children regarding a healthy lifestyle and creating conditions in which they can develop positive habits, we give them a chance for a better, healthier future. The goals of the project are:

- Root healthy attitudes in children.
- Demonstrate the process of water production and its path from source to tap.
- Increase awareness of sustainable management of water resources.
- Demonstrate the link between human action and pollution of the water environment.
- Introduce correct habits of using water resources.
- Demonstrate ways to use water rationally.
- Encourage greater use of alternative water sources.
- Increase environmental awareness.

Strengths:

Education raises people's awareness about the origin and quality of the water in Szczecin's taps. More and more people are learning that tap water is drinkable.

Read more:

- https://zwik.szczecin.pl/pij-kranowk/pij_kranowke_1





4.2.4 Reusable thermoses for delivering food at schools (Szczecin, Poland)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY & HOME DELIVERY



SENIOR CENTRE



ARMY



COMPANY



SCHOOL

Description:

There are many schools in Szczecin and Poland that do not have their own kitchen and get their lunch in reusable thermoses from another school kitchen.

For example, food is cooked in the kitchen of School No. 2 in Szczecin for the larger number of establishments (students of other schools/preschools) that do not have their own kitchens. Cooked food is placed in containers – thermoses, which are transported to collection points (Elementary School No. 39 and Elementary School No. 23), where the meals are served for consumption in reusable dishware. In total, about 630 lunches for pupils and 80 lunches for preschoolers are provided per day in both primary schools.

The solution in these schools has been in use since 2010, when the agreement between the schools on the joint operation of a school canteen was concluded.

Strengths:

The schools have operated under this system for over a dozen years – the solution has worked well. Logistical savings are a big advantage, and the cost of lunches has also decreased.

Limitations:

In general, the only drawback of the solution is the need to replace thermoses for transporting food. This replacement occurs every few years.

Read more:

- Example of the city of Szczecin's order on the use of canteens in schools:
https://bip.um.szczecin.pl/chapter_11465.asp?soid=AC74C28E32D24193A5239C626338FD47



4.2.5 Reusable lunch boxes from bioplastics for school starters – Bio-Brotbox (Germany)



STRATEGIC FRAMEWORK



SENIOR CENTRE



INSTITUTIONAL CATERING



ARMY



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description:

The Biobrotbox network for conscious child nutrition began in Berlin in 2002. Back then, Dr Burkhardt Sonnenstuhl and then Federal Minister for Consumer Protection Renate Künast pondered in an organic farm what could be done so that schoolchildren ate a sensible lunch. The idea of the organic lunch box was born. Each year, around 70 breadbox initiatives distribute 175,000 refillable boxes with organic lunch ingredients in all 16 German federal states, reaching around a quarter of all first-graders starting school in Germany. There is hope that pupils will continue using the box to bring their lunch to school, thus avoiding single-use aluminium or plastic foil wrapping. Each city or community needs to start their own local initiative. Key steps:

- Contact the German Bio-Brotbox (Organic Lunch Box) information centre for advice.
- Form a network / look for fellow campaigners in your local area.
- Contact the schools in your area where boxes are to be distributed and persuade school authorities.
- Record the total number of first graders, and possibly add something – for ordering the bread boxes.
- Conclude a cooperation agreement with Bio-Brotbox GmbH.
- Organise the contents of the boxes (approach sponsors from the organic and other sectors) and order boxes (via Bio-Brotbox GmbH).
- If necessary, find patrons for the campaign (e.g. local education politicians, celebrities from sports, culture, and society with a local connection).
- Organise the packing and distribution of the boxes a few days before school starts.
- Accompanying press and public relations work (support from the German information centre is possible).

Strengths:

The initiative combines waste reduction with healthy and environmentally friendly nutrition. It addresses teachers, pupils and their parents at the same time. Numerous companies in the organic food industry and other sectors show their social commitment by participating in the campaign.

For many parents and children, the Bio-Brotbox is their first contact with organic food.

In 2019, the initiative received the "We are IN FORM" award from the Federal Ministry of Food and Agriculture for its commitment to healthy eating.





The lunch box material consists of at least 75% sugar cane plants. When sugar cane is processed, a fibrous residue – bagasse is produced, which is used to fertilize plants, among other things. This bagasse is used as organic plastic for the lunch box. Thus, a lunch box can save at least 75% of fossilraw materials. It is 100% recyclable in special composting systems and can be fed into the recycling cycle via existing take-back systems. As pupils clean the boxes at home, no central cleaning solutions need to be established.

Limitations:

To realize and broaden the initiative needs much voluntary work. There is no financing for local initiatives; thus, they need to look for sponsors. The Bio-Brotbox campaigns are usually organised on a voluntary basis by broad social alliances and financed by the private sector.

Read more:

- www.bio-brotbox.de

4.2.6 Reusable food trays in the army – Baltic Restaurants AS (Estonia)



STRATEGIC FRAMEWORK



SENIOR CENTRE



INSTITUTIONAL CATERING



ARMY



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description:

The catering service provider Baltic Restaurants Estonia has used reusable 6-compartment food trays to provide meals for the soldiers of NATO forces in Võru county since October 2023.

We offer a catering service for NATO soldiers in a tent with no possibility of a dishwasher. The soldiers previously ate from disposable cardboard plates. They used 57,500 disposable plates and 20,000 disposable bowls monthly. After starting to serve food on reusable trays, we use only 4,000 disposable bowls and 0 disposable plates monthly.

The trays should last for one year. Thus, each month, we save 57,500 disposable plates and 16,000 disposable bowls. Changing soldiers' mindset was the hardest part of switching to reusable trays.

The trays are washed in the kitchen from where meals are transported to the tent – therefore, no separate transport for washing trays is needed.

Next, the plan is to replace single-use cups and cutlery with reusable ones.

Contact:

- <https://www.balticrest.com/eesti/en/>





4.2.7 Lunch in glass jars for workplaces without a canteen – Marktkost (Germany)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY & HOME DELIVERY



SENIOR CENTRE



ARMY



COMPANY



SCHOOL

Description:

The solution was developed in 2019 by Marktkost – lunch as a service GmbH. The customers can sign up on the Marktkost homepage and select their meals from the offers. The food packaging is reusable instead of disposable, as the jars are both delivered and collected by Marktkost. Therefore, no packaging waste is generated. The meals consist of high-quality, mostly seasonal and local food. Also, vegetarian + vegan options are offered. The food in glass jars can be kept for up to 7 days without any preservatives. The service is available in Berlin, Brandenburg and Leipzig.

Strengths:

1. Less waste is generated because of:

- Reusable glass packaging,
- Reusable transport boxes,
- Reusable shipping bags,
- Reusable cooling elements,
- QR codes instead of labels & leaflets.

2. Climate-friendly menu – local and seasonal food from the region of Brandenburg and Leipzig.

Are there any limitations in the solution?

- The jars can only be returned to Marktkost
- Because of food safety, lids are disposable
- Weight: only suitable for short transport distances

Read more:

- <https://marktkost.de/>





4.2.8 Repair of ceramic plates (Päijät-Häme, Finland)



STRATEGIC FRAMEWORK



SENIOR CENTRE



INSTITUTIONAL CATERING



ARMY



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description of the solution:

Astiakorjaamo and E.Ahlström Oy started a collaboration to implement a new circular economy model and extend the lifetime of worn ceramic dishware in 2020. E.Ahlström, a wholesaler and design house of crockery, kitchen accessories and interior design for restaurants, hotels and professional kitchens, restores discarded dishes into AINIA products or recycles them as raw material for bricks.

The company Astiakorjaamo, the owner of repair technology, has been in the ceramics business for decades. They initiated the idea and elaborated on the technology to repair the used ceramic crockeries. E.Ahlström is managing customer actions and sales.

Dishes can be restored up to five to seven times. Repaired ceramic plates and mugs are used in institutional kitchens and are also sold to individual customers. The service is available all over Finland.

The objectives of the service:

- Enhance re-use and longer use-time of ceramic crockery;
- Improve material efficiency (reduce the use of virgin material);
- Emphasize the reparability of institutional kitchen crockery and provide a solution for it;
- Contribute to the transition towards sustainability;
- Contribute to the circular economy.

Strengths:

AINIA dishes are just as durable as new dishes, and their carbon footprint is 90% smaller than the carbon footprint created by manufacturing an entirely new dish.

The solution is feasible as the technology and business model are in use. There are no obstacles to replicating the solution, but so far, the solution is in operation only in Finland.

Read more:

- <https://www.uusiouutiset.fi/kuluneille-ravintola-astioille-jatkoaikaa/>
- <https://astiakorjaamo.fi/>
- <https://www.eahlstrom.fi/brandit/ainia>





4.2.9 Reusable napkins for senior centre patients (Espoo, Finland)



STRATEGIC FRAMEWORK



SENIOR CENTRE



INSTITUTIONAL CATERING



ARMY



PUBLIC EVENTS



COMPANY



FOOD TAKEAWAY &
HOME DELIVERY



SCHOOL

Description:

In 2017, the City of Espoo organised a competition to identify sustainable everyday acts.

The winner of the competition was a senior centre at Kauklahti. The centre is home to 74 disabled elderly and long-term patients who need napkins to protect their clothes.

Baseline: At first, plastic disposable napkins were used, which consumed $5 \times 74 = 370$ napkins/day, i.e. more than 130,000 per year!

The change: In order to save natural resources, the senior house purchased washable cloth napkins to replace disposable ones. This replacement generated savings in both public procurement and waste costs. For the price of one cloth bib, you can get disposable napkins for one resident for one and a half months.

The objectives of the solution are:

- Eliminate plastic napkins and take reusable fabric napkins into use;
- Contribute to the transition towards sustainability;
- Contribute to the circular economy

Textile napkins also protect residents' clothes better than disposable napkins, which has reduced the need to wash clothes

Strengths:

- Positive impact on sustainable development via circular economy solution.
- A positive carbon handprint and lower carbon footprint.
- Easy to adopt, easy to maintain.

Read more:

- <https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:71bc2f97-e1e5-3810-8ab3-2d0a380e5c31>



4.3 Public events





4.3.1 Deposit cups and plates at Breminale Festival (Bremen, Germany)



STRATEGIC FRAMEWORK



EVENT ORGANISER



INSTITUTIONAL CATERING



FULL-SERVICE PROVIDER



PUBLIC EVENTS



WASHING & LOGISTICS SERVICE PROVIDER



FOOD TAKEAWAY & HOME DELIVERY

Description:

The mandatory reusable tableware for the food stands at the Breminale Festival was first introduced in 2022. For 2023, Breminale organiser concept bureau UG improved the solution further, introducing stricter rules. Reusable cups have been used at the festival for a long time. Reusable plates and cups (for both cold and warm beverages) are provided against a deposit of 1 €. The cups are made from polypropylene and polycarbonate, and the plates are made from polypropylene.

Dirty dishes and cups are collected by the food providers, who hand out the deposit (a visitor has to return a wooden coin with each item). When collection boxes are full, the food providers deliver them to central collection points of the circularity service provider, who transports the dishware to their washing facility in the city of Hannover. If dishes or cups break during use, they are recycled on the festival grounds. Information materials all over the festival grounds inform visitors of the circular system and its environmental benefits. In the festival of 2022, 2.6 t of waste was avoided, which is equivalent to a reduction of 8.6 t CO₂. Together with BUND (Friends of the Earth) Bremen and the Institute for Energy and Circular Economy at Bremen University of Applied Sciences (*Institut für Energie und Kreislaufwirtschaft an der Hochschule Bremen*), the concept bureau UG is developing a digital decision support tool called zoCat (*zukunftsorientiertes Catering = future-oriented catering*), which will help event organisers to choose the most sustainable tableware for their event from various impact categories. The tool will be available (by July 2024) free of charge at www.iekrw.de/zocat.

Strengths:

Detailed communication plans for festival visitors, food stand owners, and the municipality ensured a seamless implementation. Visitors have responded very well to the new features of the festival.

Limitations:

The dirty items have to be delivered to the city of Hanover, ~125 km away. Therefore, in the future, a local dishwashing facility should avoid the trip to Hanover. A consortium of Breminale and more than 20 other Bremen event organisers have been able to push through a municipal reusable dishwashing requirement politically, making it more realistic to set up a dishwashing line in Bremen in the near future. For the food stand operators, the collection and delivery of the items take a lot of time.

Read more:

- <https://www.bremen.eu/breminale>
- https://mehrweg-mach-mit.de/wp-content/uploads/220913_Best_Practice_Event_Breminale_FINA_L-1.pdf





4.3.2 Deposit cups and plates at the Hamburg DOM Fair (Hamburg, Germany)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY & HOME DELIVERY



EVENT ORGANISER



FULL-SERVICE PROVIDER



WASHING & LOGISTICS SERVICE PROVIDER

Description:

Hamburg Authority for Economy introduced reusable cups at the Hamburger DOM fair on a voluntary basis in 2017, and in 2019, reusable cups became mandatory for food stall operators. Three parties are involved in the solution. The company RECUP offers reusable items (cups, plates and bowls). A second company bought a license to use the items – they distribute the items to the food stall owners of the fair and collect them at the end of the fair for storage and potential reuse at other events. The Hamburg Authority for Economy, which is the fair operator, organised the solution but is not actively involved in the logistics. For the time being, the reusable system is mandatory for cups only, while reusable plates and bowls are optional. This option is possible because the license always includes all items offered by RECUP. While the food stall operators are required to use reusable cups, they are free to choose the option organised by the Hamburg authority, but they can also choose their own system. The items have to be cleaned by the food stall operators themselves. In 2023, 12,000 cups were used at the fair, and the cups can be reused up to 1000 times.

Strengths:

The analogue, offline solution (compared to other options that use an app) is working well because the many visitors to the fair put a big strain on the mobile network.

The low deposit of 1 € does not burden groups such as families. The low and even deposit of 1 € per item makes handling easy, compared to taking 1.50 € or similar.

Limitations:

Customers need to wait at food stalls to return their items. The use of machines is considered to tackle this problem, but no viable solution has been found yet. Handling the deposit system needs a lot of cash. Calculating the system's impact and advantages – and thus justification – is not straightforward. The system development also poses practical challenges, such as deciding whether items should be bought or rented. Using a circular/reusable system is more expensive than a disposable one, mainly due to the high logistical and storage requirements.

Read more:

- <https://www.youtube.com/watch?v=hjEdrwMpDZ0>





4.3.3 Deposit-free tableware and deposit cups at Norden Festival (Schleswig, Germany)



STRATEGIC FRAMEWORK



EVENT ORGANISER



INSTITUTIONAL CATERING



FULL-SERVICE PROVIDER



PUBLIC EVENTS



WASHING & LOGISTICS SERVICE PROVIDER



FOOD TAKEAWAY & HOME DELIVERY

Description:

The solution was developed in 2020 by the Norden Festival – two years after the start of the festival in 2018. The Norden Festival uses reusable cups, plates, bowls and cutlery. The crockery and cutlery are made of ceramics and metal and were donated by the people of Schleswig. Because no one is stealing the old plates and cutlery, the festival visitors can use them without a deposit fee. The cups are made of plastic and are owned by the city of Schleswig, which uses them for all city events. The festival pays a handling fee to the city for the use of cups. The festival visitors pay a deposit of 2 € per cup. In 2018, the festival started with one dishwasher. Now, the festival has a container and an inline washing machine in which four people wash the dishes. Festival visitors bring the dirty dishes to the dishwashing tent or to the designated drop-off stations on the festival grounds; from there, the washers collect the full boxes and return the clean dishes to the ten food houses. The cost of the operation is covered by the entry fee to the festival.

Strengths:

Old, used crockery and cutlery are very easy to handle as no deposit is needed, and people return them. However, the festival also has an entry fee, and people stay on the festival grounds. Because of the entry fee, the festival is able to offer this service, which otherwise would not be possible.

Limitations:

Food stall operators don't want to pay a fee for washing and distributing reusable items because it is more than the disposable option would cost them. The cost of storage and logistical effort is considerable. The solution is feasible and replicable with the limitations mentioned above due to the type of the event.

Read more:

- <https://www.norden-festival.com/en>





4.3.4 Cashless deposit with a wristband at OMR Festival (Hamburg, Germany)



STRATEGIC FRAMEWORK



EVENT ORGANISER



INSTITUTIONAL CATERING



FULL-SERVICE PROVIDER



PUBLIC EVENTS



WASHING & LOGISTICS SERVICE PROVIDER



FOOD TAKEAWAY & HOME DELIVERY

Description:

The event organiser, Online Marketing Rockstars (OMR), developed the approach starting November 2022 for the conference held in May 2023. OMR offered reusable plates, bowls, knives, forks, spoons and chopsticks. They collected a deposit of 5 € for each piece, which was refunded upon return of the item. This high value provided a high incentive to return the items, but because the payment at the event was conducted through a cashless system integrated into the personalised wristbands of the event participants, no immediate monetary burden was produced. The deposit was marked in the participant's virtual account and erased upon item return. At the end of the festival, the participant would pay the remaining saldo, including the deposit of any items that were not returned. Food that did not require any of the above items was handed out on napkins, with attention being paid to the sparing use of those. No requirements were given for the packaging of foodstuffs delivered to the food trucks. The event organiser used 93,000 reusable items, half of which were cutlery, and the rest were bowls and plates (additionally, 280,000 cups were used; however, those were organised and managed through another system).

Strengths:

OMR's challenge was that they did not own any reusable items, nor did it make sense for them to own them, as the conference is only once a year. In addition, their expertise is in organising the conference, not implementing a circular concept for food utensils. OMR's solution to sit down with a manufacturer of high-quality, reusable items and a company that specialises in implementing the circular approach (including coordination of item collection and cleaning) proved very powerful and a win-win situation for all involved. The first company produced the items, and the second bought them from the first and rented them to OMR. After the event, the items were returned to company 2, who can use the items for other events. The cashless payment system explained above allowed for a reliable return rate for the items (via placing a high deposit of 5 € per item, including every piece of cutlery) without putting an immediate financial burden on the customer.

Limitations:

OMR incurred additional financial costs to implement and run the solution, which is only partially covered by the fees that the food trucks had to pay for the service. Commitment and willingness on the side of the organiser are therefore required. The receiving back of the items and cancelling the deposit on the customer's cashless account required considerable personnel time, adding to the cost of the solution.





It is being considered to link every single item taken out by the customer to their personal account so that items can be returned independently of the customer. A machine can then read out from each item who had taken it out and cancel the deposit automatically.

Read more:

- <https://www.youtube.com/watch?v=YkzS40x-6H8>

4.3.5 Deposit cups at Riga's Christmas market (Latvia)



STRATEGIC FRAMEWORK



EVENT ORGANISER



INSTITUTIONAL CATERING



FULL-SERVICE PROVIDER



PUBLIC EVENTS



WASHING & LOGISTICS SERVICE PROVIDER



FOOD TAKEAWAY & HOME DELIVERY

Description:

Arrangements with merchants. The initial idea was for the traders to buy reusable cups, organise washing, and take care of cash. However, after consultation with the traders, the event organiser provided the reuse service. In the acts of transfer and acceptance, the traders indicated how many cups they needed. Washing costs were billed according to the amount the traders consumed, which was 0.12 cents per cup.

Washing. The cups were taken to the laundry for washing every day. In public holidays, the washing service had to be bought outside of working hours. The event organiser initially intended to do everything: pack the cups in boxes and transport them to the laundry and back twice a day. However, the workload was too high, and the organiser hired employees to help. The employees have to be reliable because glasses are "live money". If some glasses disappear, they are exchanged for money.

Cash refund. Cash circulation was a "headache". The deposit was returned in cash at the special drop-off point. At first, the employees regularly exchanged money at the bank. Then, the collectors were taken. The event organiser must have a large amount of cash for the deposit system; in this event, it was about 10 thousand euros a day. There was a case on Saturday night when people stood in lines, but there was not enough cash, and the drinks had to be poured into regular cups.

Return. Before the holidays, the event organiser rented another 8–9 thousand cups. More than half of the cups were not returned. The problem was that the cups were very beautiful. Unprinted cups were returned, but the cups with prints were not returned. According to observations, older people supported the deposit system more. People aged around 30 years often said that the deposit system was unnecessary. In cooperation with the Bank of Latvia, it was possible to get back 2 € coins, which were limited and had a beautiful design. Then, people were motivated to return the cups. It was a small trick, but it worked very well. However, one of the most critical moments to motivate and teach people why they need a deposit is what the traders tell their customers. Here, too, the attitude was different. Various stories were heard from traders: "The system is like this for us, we can't do anything," or "Look, we have a deposit, it's so great, try it, you will enjoy a drink from a beautiful glass". An audio file in Latvian and English went over the music to inform people before shopping that they pay 2 € per cup and get it back. Merchants admitted that this made things easier, as many visitors had already heard of the deposit system before shopping.

Volume of waste. Last year, huge garbage bags had to be collected every 2 hours. This year, it was possible to do without the janitor for a day successfully; there were no mountains of garbage. The market was very clean. Of course, traders have to change their thinking because they always have the sight in front of them that disposable cups cost less. But at some point, the packaging law will change that, too. The deposit works if you are a progressive entrepreneur and think with an eye to the future.



4.3.6 Deposit cup rental service – Panditops (Estonia)



STRATEGIC FRAMEWORK



EVENT ORGANISER



INSTITUTIONAL CATERING



FULL-SERVICE PROVIDER



PUBLIC EVENTS



WASHING & LOGISTICS SERVICE PROVIDER



FOOD TAKEAWAY & HOME DELIVERY

Description:

OÜ Eesti Pandipakend is a recycling organisation that has collected and recycled deposit-based beverage packaging across Estonia since 2005. For the event organisers, they offer reusable deposit-based cups – Panditops and the following services since 2019:

1) Deposit cup rental service

Eesti Pandipakend rents deposit cups, plates, bowls or boxes (made of plastic) and cutlery (made of wood fibres) to the event organiser, who organises the distribution of the items to the event traders, collects the used dishes from the guests, refunds the deposit and sends the dishes back to Eesti Pandipakend, where the dishes are cleaned and prepared for the next event.

2) Deposit cup collection service

Eesti Pandipakend handles the distribution of dishware directly to the event traders, collects the dishes from the event visitors and refunds the deposits. Eesti Pandipakend brings to the event as many return points as necessary and is responsible for everything concerning the deposit packaging. Return points can be organised as manual reception or vending machine solutions. The collection service price for the event organiser includes:

- return point(s) with furnishings (cups return machine, posters for sellers);
- transport of cups to the event site and back to the warehouse after the event;
- cups and dishes rent fee;
- personnel fees (working hours before, during and after the event). Depending on the event location, the price may also include accommodation for personnel.

3) Return machine

In addition to the manual collection, Eesti Pandipakend offers a cash-free cup return machine. After use, the event visitor returns the deposit cups and dishes to the vending machine and the deposit is returned to the visitor's bank card.


4) Deposit packaging collection

If requested, Eesti Pandipakend offers a deposit packaging collection service at the event, sends the packaging to recycling and pays the deposit to the event organiser.

5) Return point furnishings rent

Eesti Pandipakend also offers the special green return point tent, desk and chairs for rent.

An example of using Panditops is the Youth Song and Dance festival in Tallinn in 2023, where almost 500,000 disposable plates and cups remained unused.



In this way, about 3.5 tons of waste was prevented. For the visitor, this meant paying a deposit of 2 € for the crockery, which was fully returned in cash or to the customer's bank card at 11 dish collection points on site.

Read more:

- <https://panditops.ee/en>

4.3.7 Deposit cup rental service – Topsiring in cooperation with GreenCup and Cuploop (Estonia)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY &
HOME DELIVERY



EVENT ORGANISER



FULL-SERVICE PROVIDER



WASHING & LOGISTICS SERVICE
PROVIDER

Description:

The solution Topsiring was developed in 2016. MTÜ Topsiring offers the following services:

Deposit cup rental service:

Topsiring brings the reusable cups (made of plastic: Tritan, PP) to the event site and distributes them to caterers. The cups will be handed over on the basis of the delivery note, and the invoicing will take place on the spot later. At the end of the event, Topsiring collects the returned and unused cups from the caterers based on the delivery note.

Topsiring washes the used cups in a tunnel washing machine on-site or outside the event area, and if necessary, the caterers can use the washed cups again at the same event. The cups are stored tightly stacked in special measuring tubes, so there is no need to count the cups one by one.

The deposit cup scheme for the event visitors:

- When buying a drink, a 2 € cup deposit is added to it (3 € for wine glasses and mugs).
- Return the used cup to the return point for a refund of the deposit in cash.
- The visitor can get the deposit back from the caterer who rented the cup or another caterer who rents out the cups at the same event. At larger events, there are also return points available.

The company GreenCup provides **reusable crockery and logistics services**, and Cuploop offers **return kiosks**.

Since 2023, MTÜ Topsiring has been implementing a project (financed by the Environmental Investment Centre) to develop an industrial and automatic module for the production of reusable cups with an embedded RFID (Radio-frequency identification) chip.

Strengths:

MTÜ Topsiring, in cooperation with Aquaphor International OÜ, uses the Tritan leftover from the production of Aquaphor filter jugs to produce drinking cups. The share of secondary material is between 10 and 20%. Tritan products are resistant to hot drinks and can withstand hundreds of washes.

Read more:

<http://www.topsiring.ee/>





4.3.8 Deposit cup rental service – CupCup (Lithuania)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY & HOME DELIVERY



EVENT ORGANISER



FULL-SERVICE PROVIDER



WASHING & LOGISTICS SERVICE PROVIDER

Description:

The solution was developed by a couple: Valdonė Daugėlaitė-Šuškevičė (researcher of the circular economy) and Irmantas Šuškevičius who founded the company CupCup in 2019. The company provides reusable food packaging for catering establishments, festivals and other events. For open public festivals, a deposit payment for a cup is 1 €, which is returned to the customer after the cup is returned. For closed events, like corporate events, it is also possible that the organisers pay the deposit for all cups, and they are responsible if some cups are not returned. After the event, CupCup collects the drink containers, cleans them, and prepares them for the next event.

With CupCup, the festivals and events reduce the amount of waste they produce. For instance, in the summer of 2019, more than 722 kg of single-use plastic waste was avoided at seven Lithuanian festivals by applying the CupCup reusable cup system.

Strengths:

CupCup crockery can be sent to any location in Lithuania where the event is organised, and the crockery will be collected after the event.

Limitations:

However, the solution has to be advertised more to the public. For example, cafés are sceptical and unwilling to get involved in the system; for them, using single-use cups is simpler.

It is difficult to monitor cups and crockery and keep track of how many times a particular container has been used and how much it depreciates before it needs to be replaced.

Read more:

<https://cupcup.lt/>





4.3.9 Deposit cup rental service – GreenCup (Finland)



STRATEGIC FRAMEWORK



EVENT ORGANISER



INSTITUTIONAL CATERING



FULL-SERVICE PROVIDER



PUBLIC EVENTS



WASHING & LOGISTICS SERVICE PROVIDER



FOOD TAKEAWAY & HOME DELIVERY

Description:

Two friends set up a new company in 2021 to rent and wash reusable cups for events. The GreenCup company offers the “whole package”: transporting, storing, and washing cups. They also help customers promote reusable cups at events and implement various schemes for reusable cups, depending on the type of the event:

- Refundable deposit scheme
- Compulsory levy scheme
- No charge scheme

They have general cups in storage, which can be used in different types of events, or customers can order cups with their own logos.

Reusing cups reduces waste and decreases the need for new materials to produce single-use cups. Reusable cups are made of polypropylene, which is durable and recyclable. Cups can be used about 200–300 times and then recycled as raw material for new products.

Strengths:

The company is Finland's leading reusable event cup importer, washer and renter. They offer full service and support customers' transition to more sustainable events. Their products and services offer environmentally friendly ways to organise events by reducing waste and saving event organisers' money with less waste.

Limitations:

There is still work to do to convince people to use reusable cups instead of single-use ones. They have raised awareness among actors concerning new regulations on SUP.

Event organisers may have challenges in planning internal logistics when they start using reusable cups. Planning is affected by location, space, storage capacity, educating personnel, collecting cups and guiding the event participants. The company has worked with these challenges and is continually developing processes. To conclude, logistics and personnel are the main challenges.

Read more:

<https://greencupnordic.com/>





4.3.10 Deposit cup rental service – Genkrus (Denmark)



STRATEGIC FRAMEWORK



EVENT ORGANISER



INSTITUTIONAL CATERING



FULL-SERVICE PROVIDER



PUBLIC EVENTS



WASHING & LOGISTICS SERVICE PROVIDER



FOOD TAKEAWAY & HOME DELIVERY

Description:

Genkrus offers rental, collection, logistics and advice services for reusable cups. We serve catering and public events at schools, stadiums and other venues, in private companies and canteens. We even target food takeaway at hospitals and airports. Reusable cold drink cups, hot drink cups, wine glasses, plates, bowls, sausage trays, cutlery..., and whatever a future customer/market requests! 50% of the products we handle are products the customer has acquired by himself. The other 50% of the products handled are from our own neutral rental assortment. Our logistic setup supports multi-branded markets, e.g. airports and street food, which have several branded products parallel in use (McDonald, Lagkagehuset, Joe & the Juice, etc.). We provide an integrated system with on-site collection of used products, logistics for return, and washing of the used products. For the products with deposits, we offer digital management systems for deposit return and monitoring.

We have three years of experience operating reusable cups and one year of experience operating plates/bowls. We continuously improve and extend our collector systems and the product assortment for external reasons (each segment/customer has different requirements) and for internal reasons (costs/efficiency). We have gathered comprehensive statistics for lost product rates (with and without deposits / open events vs closed events / central city events vs peripheral events / young audience vs family audience / big events vs small events, etc.) that help us continuously improve return rates. We have comprehensive customer feedback (positive and critical) and a pool of external user surveys.

Strengths:

Own nationwide logistics. We cover Copenhagen and Sjælland with daily pick-ups and deliveries, Fyn and Jylland with weekly pick-ups and deliveries, and Sweden at the moment only at specific events. With our trucks carrying more than just reusables, we can handle big volumes as well as small volumes per pick-up. Focus on user/customer convenience = Our collection systems ensure that the user returns the product easily and at the highest return rates and that the customer/event has the lowest handling costs at the highest convenience. We are just one out of six (known to us) existing Danish industrial in-line washers of plastic products. In 2022, we have been more or less copied by a UK college and, in 2023, by a Belgian. Our systems are in no way patented. We have openly shared our knowledge with both copying colleges. Adaption to customer/market requirements is the 'backbone' of our strategy.



**Limitations:**

Our digital management systems have not been operated on a regular basis in Denmark/Sweden, only in other European countries (we cooperate with external partners on digital systems). Our operation covers an area within 500 km of Copenhagen (cost-wise). Multiplication in other countries will represent an investment challenge.

Read more:

<https://genkrus.dk/>



4.3.11 Mobile washing service for events – Mobilopvask (Denmark)



STRATEGIC FRAMEWORK



EVENT ORGANISER



INSTITUTIONAL CATERING



FULL-SERVICE PROVIDER



PUBLIC EVENTS



WASHING & LOGISTICS SERVICE PROVIDER



FOOD TAKEAWAY & HOME DELIVERY

Description:

Dansk Mobilopvask was founded in 2018. The solution is used by festivals and other events, municipalities, suppliers of reusable packaging, and food delivery services. We offer the rental of cups and jugs, washing, quality control of the washed packaging and logistics for all types of events. We wash the reusable packaging in which the food is delivered – in either plastic or steel. The cups can be stored at our own storage hotel or returned to the customer.

From our point of view, it would be important that the municipality's approach to supporting a circular food delivery system is to have a standard for the packaging so that there is one type of bowl, one type of tray, etc., in different sizes to ensure an easier collection.

It is also essential to keep an eye on the logistics and collection of the used packaging. When is the food delivered? When is the packaging collected again? When can the packaging be washed? When must the packaging be used again? With the correct type of packaging and a correct collection/return of reusable packaging, a very high return rate is ensured.

Strengths:

We have several individual washing lines, which means the possibility of washing different products at the same time: during an event or afterwards.

We continuously collect data about the wash: how much is washed? How much is thrown away? We have a continuous dialogue with our customers about how the process should be optimised to make return rates even better. All products for the washing and drying process are Nordic Ecolabelled products.

Read more:

www.danskmobilopvask.dk



4.4 Food takeaway and home delivery





4.4.1 Deposit cup rental service – Genkrus (Denmark)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY &
HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR
REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE
PACKAGING

Description:

In October 2020, the Kleen Hub founding team, with our in-house tech team, developed the solution for the old Kleen Hub app-based system, and in January 2023 – for the new Tap & Reuse solution. We offer any type of reusable packaging since the core of our system is Tap & Reuse, which makes any type of reusable packaging smart with a dishwasher-safe RFID label (embedded chips and QR codes).

The customer borrows the packaging from Kleen Hub and has ten days to return it to a service point or takeaway provider in the network. If the packaging is not returned, the customer is charged a price that corresponds to the packaging's purchase price. The return rate of our reusable packaging is 98%.

We have metal and plastic cups and bowls in stock, and we can source them in any style (pizza, burger, sushi, etc.) from suppliers and provide them to anyone with our white-label technology. We can even help design and develop the packaging. No washing – we don't have a washing facility, but we work with great third-party providers in Denmark). We work with different Reverse Vending Machine suppliers who work with our technology, but we have “no-tech” return stations available. We work with food delivery companies to integrate our Tap & Reuse into their platforms. The solution is used by coffee and restaurant chains, festivals, corporate offices, and soon stadiums. We have 13,000 users and 140 clients in Denmark, Spain, Portugal and soon in Brazil and Colombia. We have clients from Coffee Collective, ISS, Nordea, Danske Bank, Roskilde Festival, and the United Nations – to name a few of them.

Strengths:

We are the only (cash) deposit and app-less solution in Denmark, which translates into the most convenient system to get everyone involved with reusable packaging because downloading an app to rent a cup/bowl/x is a massive barrier to adoption. Also, deposits have the wrong incentive, handling cash and taxation is problematic, etc. Tap and Reuse is 100x faster than an app system: 2–3 seconds compared to 2 minutes+ setup. Our new system already sees a 20x higher adoption rate than the old app-based one. We could integrate our system into existing POS (Point of Sale) hardware, but that is quite costly. Customer feedback is amazing since now it just works with the tap of a payment (virtual or physical card).

Read more:

<https://www.kleenhub.com/>





4.4.2 Deposit system for takeaway packaging – New Loop (Denmark)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY &
HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR
REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE
PACKAGING

Description:

The system is for reusable and modular packaging, initially for all kinds of cold and hot beverages but potentially also for takeaway foods. The solution eliminates single-use takeaway packaging through a comprehensive set-up and digital platform. Our system is based on individual QR codes, enabling tracking of all packaging and consumer interactions. We deliver the full system, including:

- Food-approved reusable packaging made of recycled plastic in an optimized process reducing the use of material,
- Return vending machines,
- Logistics,
- Washing,
- Digital infrastructure for deposit handling, communication, and tracking.

We are working with the owner and development company of Refshaleøen, who will be a partner on the project. They wish to include the solution in their future lease agreement by banning single-use packaging on items where the project will offer reusable alternatives.

Furthermore, we will offer the same solution in Copenhagen, where the larger chain stores will potentially introduce the system.

Strengths:

Our deposit model works seamlessly without registration in the sales process (not lowering transaction time). This model also enables high returns, given that anyone can return the packaging if left behind – anyone can redeem the deposit (in contrast to the “library model”, where you have to register, and the deposit is locked to the customer buying the product).

Limitations:

Establishing a reuse system in a location like Refshaleøen, which hosts a street food fair, a bakery, restaurants, and various festivals and events, requires scaling the system up and down. We need to establish a “mass drop-off return point” for “professional deposit collectors” for this scaling without overwhelming the sales units and return deposit stations. Such a return point could be, for instance, at the public recycling station on Uplandsgade, and it will require financing and allocating a good amount of square meters for the machine.

Read more:

<https://newloop.dk/>





4.4.3 Circular and digital packaging solution for companies and events – Cirqle (Denmark)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY & HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE PACKAGING

Description:

Cirqle was founded in 2020, and its first services were boxes for home delivery and catering. Since then, we have widened the service with cups, trays, bowls, etc. The services are used by international coffee solutions providers (e.g. Peter Larsen Kaffe at the Northside Festival). We advise organisations on the most suitable circular food delivery solution and provide the following services when the transition is initiated:

- Digital platform where packaging is tracked in the supply chain,
- Reusable packaging with RFID tags,
- Reverse vending machines (if deposit schemes are applicable),
- Washing service (3 facilities in Denmark and via a global partner, we have washing facilities close to all major cities in the world),
- Transportation,
- ESG reporting: waste savings and CO₂e emissions.

Cirqle can work with multiple types of reusable packaging (EPP boxes, pallets, coffee cups, beverage cups, trays, bowls, etc.). Cirqle adds RFID tags to track packaging in the supply chain and to report waste savings and CO₂e emissions very precisely.

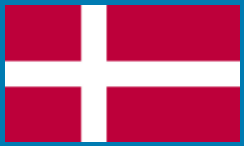
A municipality, first of all, needs to decide on its long-term strategy, saving targets, and how to go about it in the short- and long-term. Cirqle can help with the planning, facilitate workshops, and prepare action and communication plans. Once the decision is made, we will provide end-to-end service, including reusable packaging, washing, logistics, and reporting on waste savings and CO₂e emissions via the digital platform. We advise choosing a pilot case and getting experience with the circular system before scaling it up. Organisations can save up to 95% of CO₂e emissions and significant amounts of waste with the Cirqle approach. A savings estimate is made with Cirqle's 3rd party-certified emission calculator and then tracked monthly.

Strengths:

We are the only (cash) deposit and app-less solution in Denmark, which translates into the most convenient system to get everyone involved with reusable packaging because downloading an app to rent a cup/bowl/x is a massive barrier to adoption. Also, deposits have the wrong incentive, handling cash and taxation is problematic, etc. Tap and Reuse is 100x faster than an app system: 2–3 seconds compared to 2 minutes+ setup.

Our new system already sees a 20x higher adoption rate than the old app-based one. We could integrate our system into existing POS (Point of Sale) hardware, but that is quite costly. Customer feedback is amazing since now it just works with the tap of a payment (virtual or physical card).



**Limitations:**

- A new approach which is not yet in large-scale operation.
- Pricing for reusable products is often slightly more expensive than for single-use products. Taxation from EPR (Extended Producer Responsibility) may change that.

Read more:

<https://cirqle.org/>



4.4.4 RECUP and REBOWL deposit system (Germany)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY & HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE PACKAGING

Description:

RECUP and REBOWL offer a Germany-wide reusable system for coffee-to-go and take-away food. Since its founding in 2016, the Munich-based start-up RECUP has officially established its deposit system in 11 German cities and is represented in a total of 30 cities with around 850 vendors.

Empty cups can be returned to all RECUP partners throughout Germany. With over 20,000 delivery and return points, RECUP and REBOWL are Germany's largest reusable systems for takeaway drinks and food. The RECUP app is available to download for an overview – with the shortest route to the nearest RECUP partner and caffeine replenishment.

Coffee providers pay 1 € per day and location to RECUP as a fee for using the system. For REBOWL, the deposit price is 5 €. The customer pays the same deposit amount per cup and bowl and receives it back after return. The cups and bowls are cleaned on-site and then returned directly to the system. Each RECUP can withstand up to 1,000 wash cycles, and each REBOWL up to 500.

The cups and bowls are made in Germany and are 100% recyclable.

Strengths:

RECUP/REBOWL is already worthwhile for a customer from the 12th to-go drink or the 6th takeaway dish of the day. From here on, disposable packaging is more expensive for the customer.

Read more:

<https://recup.de/>



4.4.5 Reusable food and drink containers – Ringo (Estonia)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY & HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE PACKAGING

Description:

The company Ringo Eco OÜ was registered in 2020, and the service has been operating since May 2022. The solution users are retailers, restaurants, caterers, event organisers and end users/customers.

Ringo Eco provides collection, washing and deposit handling services for reusable packages. Ringo return bins can be ordered by office buildings, restaurants, apartment buildings, private houses, etc.

Ringo Eco also offers an open e-shop platform for retailers, restaurants, and food producers, who can join the Ringo platform with their reusable packages.

Deposit package management is QR code-based to be as cheap as possible and to allow for easy expansion of the network of return bins.

Depending on the nature of the event, either the caterer or the event organiser chooses the method of refunding the deposit. At most events, the deposit can be returned both by scanning the QR code or in cash either from the trader or at Ringo's information tent.

For customers, the process is as follows:

- Choose a reusable package. Pay a deposit of 2 €.
- When the package is empty, set up a user profile on Ringo's homepage and scan the QR code on the package.
- Take the empty package to the return box.
- The deposit will be transferred back to the account of your choice (within a month).

During May 2022–May 2023, Ringo had 30,000 customers, 300+ return points, 140+ retailers/restaurants/food producers where Ringo reusable food packages are available, 500,000 packages/cutlery/crockery in storage, ca 1.1 million package releases, 30,000 packages used more than six times.

Ringo's solution will be further developed by the summer of 2024 so that at some events, all phone scanners can get a limited amount of money back within 2 minutes and do not have to wait for the packages to be scanned at Ringo's laundry. In addition, the company will offer this summer the possibility of returning the deposit to a bank card at events in Ringo's information tent.

Read more:

<https://ringo.eco/en/>

4.4.6 Reusable food and drink containers – RingKarp (Estonia)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY & HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE PACKAGING

Description:

The idea was generated in December 2020 by Katarina Papp and Ökopere OÜ. The solution users are restaurants and take-away food providers. RingKarp offers reusable food and drink containers. They are made of 70% PBT plastic and 30% fibreglass, with lids made of durable PP plastic. The products do not contain BPA, phthalates or other hazardous substances. The colour of the containers is completely safe in contact with food. The containers are also suitable for vegans as no animal fat is used in the material. The cups are made of Tritan, which is suitable for hot and cold drinks.

RingKarp containers can be used in the microwave and up to 120 degrees in a conventional oven and are dishwasher safe. In Switzerland, where the boxes have been in circulation for four years – only 1% of the products have been withdrawn from the market for recycling.

A container costs 10 € and a cup 5 € to motivate customers to bring them back and ensure that the boxes and cups are actually circling and reused, not ending up in the bin or piled up in people's kitchen cupboards. The 10 € and 5 € deposit allows RingKarp to be part of a pan-European system. Exactly the same boxes circulate at exactly the same price in Switzerland, Germany, Denmark, France and Italy.

RingKarp takes advantage of the existing capacity of catering facilities to wash reusables. Therefore, the daily transport of boxes from the collection bins to the washing stations, from the washing to the warehouse and back to the restaurants is not needed. In addition, there is no need to spend resources on producing and maintaining returning bins. Returns can be made to any food outlet in the network, and there is no need to search for return machines/boxes.

More than 70 food outlets in 11 Estonian counties have joined RingKarp, and more than 3,000 RingKarp containers are in circulation.

A calculator for potential savings in money and CO₂ emissions when joining RingKarp is provided on [RingKarp's homepage](#). When actively used, RingKarp is the most cost-effective solution to reduce your footprint compared to other reuse systems.

RingKarp containers can be reused at least 200 times. With RingKarp, it is possible to replace 200 single-use food boxes with one reusable food box. Over four years, the average food retailer has the possibility to replace the 192,000 disposable food cartons needed with 1,000 reusable food cartons by recycling them 200 times. So, it is the food retailer's choice to spend 1,000 single boxes per week or 1,000 circular boxes over four years. By opting for the RingKarp containers, the retailer will save 21,596.83 kg/CO₂ in 4 years. It's like flying nine times from Tallinn to Argentina.



**Limitations:**

The RingKarp containers are produced in Switzerland in a carbon-neutral way. As they are made of food-safe plastic, the aim is to recycle them into new boxes and cups. At the moment, this is not yet possible due to legislation and the containers are currently recycled into plastic pellets for use in other areas. Some people consider the deposit too expensive, especially if you buy food for the whole family.

Read more:

<https://en.ringkarp.ee/>

4.4.7 Return kiosk with instant deposit refund or app-based system – Cuploop (Estonia)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY &
HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR
REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE
PACKAGING

Description:

The company Cuploop was founded in 2018. The solution is mainly used at smaller events, in canteens and cafeterias. Cuploop also collaborates with Tallinn Song Festival Grounds, which is home to the biggest national events in Estonia.

Cuploop offers the installation of the Smart Kiosk. RFID technology enables the Smart Kiosk to scan the reusable cups (which contain an RFID chip), offering instant and accurate tracking capabilities. The cups will then be collected and washed by local partners, who will make the cups reusable at another event or gathering. The reusable cups are set to undergo up to 100–500 cycles before recycling.

The Cuploop technology can be integrated with custom apps, allowing clients to tailor their refund methods, such as bonus points, fines or deposit money.

For customers, the Drop, Tap & Go process is as follows:

- Purchase food or drink in a reusable package and pay a deposit (you can also pay in cash).
- Upon finishing, return the packages to the machine.
- Tap your bank card on a bank terminal to collect the deposit.

Strengths:

The service is very easy to use – setting up a user profile to return a cup is not needed.

RFID technology is effective in fast scanning of the cup, which provides quick service to users. The RFID IDs are unique in that Cuploop's software can collect data on when the packaging is sold and returned and the number of cycles the packaging has gone through. The system will enable efficient tracking and inventory management, ensuring that the vendors know how many packages they have available and when they might expire.

Limitations:

Customers must be aware of the product's potential and willing to deposit the reusable cup at the reverse vending machines. Renting the return kiosks might be expensive for an organisation (e.g. a university that wants to rent several kiosks for its buildings).

Read more:

- <https://cuploop.com/>
- <https://www.linkedin.com/company/cuploop-robotics/about/>





4.4.8 Reverse vending machines for bottle and can recycling – Tomra (Norway)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY & HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE PACKAGING

Description:

Tomra was founded in 1972 and is based on the design, manufacturing and sale of reverse vending machines for the collection of used beverage containers.

The reverse vending machines use optical sorting technology to collect beverage containers for recycling. Tomra's system is designed as an open system, meaning packaging from different packaging providers can be returned at all hours of the day to a shared infrastructure of automated collection points throughout a city.

The reverse vending machines are mainly used by supermarkets and convenience stores.

In 2024, Tomra and Aarhus Municipality in Denmark entered a collaboration to establish an open system for reusable takeaway packaging in Aarhus. The system works by paying extra for the beverage, which includes the cup. The customer will later be given back the deposit when returning the cup at one of the reverse vending machines in the city centre.

The payment system is enabled in collaboration with VISA, Mastercard and Shift4. In this project, Tomra provides the automated collection machines for reusable takeaway packaging and is responsible for emptying the machines and transporting the packaging to its own industrial sanitization facility in Aarhus.

On their website, Tomra states that they collect 40 billion beverage containers yearly from their reverse vending machines. The aim is to decrease the mining of new resources by recycling and reusing beverage containers.

Strengths:

Tomra surely has made an impact, at least in Denmark, where a lot of supermarkets are equipped with Tomra's technology to receive and sort beverage containers. In terms of the reusable package system in the municipality of Aarhus, Tomra ensures a well-working system, not relying on external partners by emptying, transporting and washing the packaging themselves.

Read more:

- https://www.tomra.com/en/reverse-vending_
- <https://www.tomra.com/en/news-and-media/news/2024/tomra-launches-system-for-reusable-takeaway-packaging>





4.4.9 Edible cutlery and bowls – Spootainable (Germany)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY &
HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR
REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE
PACKAGING

Description:

Spoontainable GmbH sells edible products: spoons, coffee stirrers, plates, bowls, etc.

Spoons are made from rescued cocoa or oat shells, which are left behind in the food industry and further processed by us. Depending on which spoon you choose, it will taste slightly bitter, like cocoa or more neutral, like an oatmeal cookie.

The oat and cocoa fibres provide enough stability and prevent the spoon from breaking. Our edible ice cream scoops last for over 60 minutes in frozen and unfrozen desserts, and then it slowly softens.

Our Twirlys, the sustainable alternative to single-use plastic or wooden coffee stirrers, are made from rescued cocoa shells. The plates are made from wheat bran and are available in sweet and salty flavours. We use 100% natural ingredients and produce the cutlery and crockery in Germany.

It is mostly a business-to-business (B2B) solution – so ice cream shops, cafés, etc., order the products for takeaway.

Strengths:

No return of the products is needed, and the solution uses saved foods (e.g. a spoon from saved oats).

Limitations:

It works only for specific foods, not a sturdy/stable spoon, but for drinks, ice cream, and soft foods, it's possible.

Read more:

<https://spootainable.shop/>





4.4.10 Icecream in glass jars and edible packaging – Molberts (Latvia)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY &
HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR
REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE
PACKAGING

Description:

Molberts ice cream stores in Riga have a zero-waste approach to business: ice cream is sold in reusable packaging or eatable packaging – in a waffle cone.

Customers are invited to take their ice cream jars to a collection point or return them by the next delivery and receive a 0.50 € discount on their next ice cream purchase.

However, jars are often not returned, which shows (at least for now) that full circular thinking has not yet been adopted. But there is potential to encourage it.

Strengths:

Other producers could think about the possibility of using edible packaging. The discount for the next purchase is an attractive solution for a company.

Read more:

<http://www.molbertssaldejums.lv/>





4.4.11 Food delivery in glass jars without a deposit from restaurants Osta and Garage (Latvia)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY & HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE PACKAGING

Description:

During the COVID-19 period, restaurant visits were not allowed. The management (owners) of the restaurants Osta and Garage in Riga found a solution to deliver food to people's homes without single-use plastic packaging (saving costs for packaging and waste tax).

Meals were delivered in glass containers, and when ordering food next time, containers were collected from the customers (no extra payment/deposit was required).

Strengths:

No deposit system was used as it would have made the order more expensive, and the customers were not ready for it.

The solution worked well during COVID-19 time, but the company stopped doing that as home delivery is no longer their service.

Limitations:

Technically, the solution was not difficult to implement; the only drawbacks were the cleanliness of the returned jars and the weight of the glass containers – organising the washing of containers was an issue as the glass containers were too heavy.

A lesson for the future: customers order food from different restaurants and don't want to have different reusable containers from restaurants at home, especially in the case of small apartments. Therefore, it is better to implement a joint deposit container system for take-away food, at least at the municipality level.



4.4.12 Food delivery in glass jars with QR codes or deposit – VegeVek (Poland)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY &
HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR
REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE
PACKAGING

Description:

The solution, developed in 2020 by a vegetarian and vegan catering company, VegeVek, from Gdańsk, consisted of two food delivery services:

1) QR code-based vending system in the office fridge

The service allowed employees to order meals prepared by VegeVek chefs in reusable jars directly to the office. For that, VegeVek placed a fridge in the office kitchen. The employees paid for the food by scanning a QR code on the jar label. After the meal, the employees cleaned the jars and put them into a box. The courier who supplied the fridge with food collected the jars.

2) Food delivery in reusable jars to customers and local retailers

Customers could order meals in jars online, and the deposit was directly added to the product price. For example, the meal cost was 3–4 €/dish, and the deposit for the jar + label + rubber ring was 1.2 €. When ordering the meal next time, the system asked to enter how many jars the customer would return, and this amount was deducted from the price of the order. VegeVek delivered the food to the customers and collected the used jars at the next delivery.

We also sold meals with a deposit to retailers. Retailers sold the meals with a deposit to the customers. Upon returning the jar to the shop, the customer got the deposit back. VegeVek picked up the returned jars from the shop.

The services were shut down due to the COVID-19 pandemic, but the aim is to restart them in the Change(K)now! project.

Strengths:

- Attractive vegan food in reusable glass jars,
- The cost of a single portion was competitive,
- The number of raving fans was growing steadily.

In addition, the QR code-based vending system did not use the deposit; instead, it relied on the contract signed with the office, which wanted to have zero-waste lunches for their employees. This contract allowed VegeVek to sort out all legal concerns at once, and the office manager was responsible for checking whether the fridge was on and the jars were cleaned. If someone had taken a meal without paying, we would have charged the office for the incorrect balance.

Limitations:

The solution requires time, funds and efforts on marketing & promotion of the system among the customers and shops, and means to survive the seasonal fluctuations in the market.

Read more:

- <https://www.facebook.com/VegevekPolska>
- <https://www.instagram.com/vegevek/>





4.4.13 Reusable crockery, cutlery and glassware for dining and takeaway – Duni Group (Sweden)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY &
HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR
REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE
PACKAGING

Description:

The updated strategy of Duni Group, which included an increased focus on sustainability and innovation, was established in 2021. Duni Group, a market leader in sustainable dining and food packaging solutions for restaurants, offers products in more than 40 markets.

The ReDine series of reusable glasses, cups, plates, bowls, pizza boxes and cutlery are used by private buyers, restaurants and catering companies.

Duni offers a series of durable plastic products that are microwave-safe and dishwasher-safe more than 50 times. Duni also offers customer-adapted products for setting tables and takeaway solutions. Based on the client's needs and concerns, they will help design the desired product.

The plastic products are constructed in PP/PP + mineral/Tritan/SAN, resulting in a hardy design. Most of their reusable items are made in Europe.

With the ability to endure several cleaning procedures, the products are estimated to substantially reduce the negative impact of single-use products, but only as long as the products are returned to the cleaning stations as intended.

Together with the Swedish award-winning company OrganoClick, Duni has developed unique Bio Dunisoft® napkins made from corn, lemon peels and other food waste.

Limitations:

There might be a problem in making the customers bring back the products after use. If the customers discard the products after the first use, the whole idea of a more sustainable product crumbles. It is important to make the customers aware of the product's potential and the actions needed for the idea to work.

Based on their website, there is no information on whether Duni offers transport and washing facilities for the products.

Read more:

<https://global.duni.com/en/duni/reusable-assortment>





4.4.14 Reusable food packaging from bioplastics – FKUR (Germany/USA)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY & HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE PACKAGING

Description:

KuR produces biodegradable bioplastics Bio-Flex®. Bio-Flex® is a product family of biopolymers that combines renewability, biodegradability and compostability. The natural raw materials basis of these PLA blends (polylactic acid blends) is, for example, corn, sugar cane or castor oil.

All Bio-Flex products are compostable (according to EN 13432) and are based entirely or partly on renewable raw materials. In addition, the majority of Bio-Flex® granules meet the requirements of national and international compostability standards and are thus considered certified compostable bioplastics.

With Bio-Flex® cups, bottles, boxes, coffee capsules, fruit + vegetable bags, trays, and other food packaging can be made.

Reusable cups made from this bio-based plastic are lightweight, durable and potentially dishwasher safe, as Bio-Flex® is more resistant to mechanical stress and moisture than starch-based bioplastics.

Limitations:

PLA polymer has low biodegradability in the natural environment and requires a high-heat industrial facility to compost. At present, PLA cups (and other PLA products) are generally either landfilled or incinerated.

Since PLA looks and feels like plastic, it may lead to wrong waste sorting, and as a result, PLA contaminates conventional plastic recycling. Also, composting facilities cannot differentiate between bioplastics and conventional plastics.

Read more:

<https://fkur.com/en/applications/cups-from-bioplastics/>



4.4.15 Reusable packaging for food home delivery – Baun (Estonia) and Gordon Circular (Sweden)



STRATEGIC FRAMEWORK



INSTITUTIONAL CATERING



PUBLIC EVENTS



FOOD TAKEAWAY &
HOME DELIVERY



RETURN-SYSTEM PROVIDER FOR
REUSABLE PACKAGING



FULL-SERVICE PROVIDER



PRODUCER OF REUSABLE
PACKAGING

Description:

Baun is a textile bag operating on a deposit system, with which the customer can order food from the e-store to home. There is a QR code inside of each bag. The deposit amount (2.50 €) will be returned to the customer's bank account within seven days of returning the bag. The price of using the bag for a consumer is 0.33 € per bag. The bag can be returned to the courier or a return point. The service is currently expanding beyond e-stores to real stores.

Baun bags are made of rPET plastic, which is produced from already existing plastic (100% recycled plastic), and at the end of its lifecycle, the bag can be recycled again. It is possible to reuse the same bag up to 200 times. One bag is made of 16 old plastic bottles.

Gordon Circular offers consumers who buy their food online the option to receive and return their delivery in circular packaging. Reusable fabric bags are picked up at the next delivery. The system replaces paper bags for e-commerce deliveries with a circular solution where the packaging is returned, washed and made ready for a new delivery. The results so far show a return rate of 98% for the circular packaging. This means that each package can be circulated an average of 50 times before it disappears from the system.

A life cycle analysis carried out in collaboration with Linköping University shows that the Gordon Circular reusable bag only needs to be five times in the loop for the whole system to have a lower impact on the climate than a paper bag that is only used once.

Read more:

- <https://baun.ee/en>
- <https://gordondelivery.com/en/cirkular-forpackning/>



Annex 1. Template for collecting examples of approaches to circular food delivery systems

1. Country, municipality:
2. Is this an approach to circular food delivery in 1) strategic management, 2) institutional catering, 3) public events, or 4) food takeaway and home delivery?
3. If applied in strategic management: What approach does the municipality use to support a circular food delivery system? (e.g. strategy, action plan, regulation, guidelines):
4. If applied in institutional catering, public events, or food takeaway and home delivery, what type of food packaging does the approach/solution use? (e.g. package-free food, reusable and modular packaging, reusable cutlery and crockery, paper cups)
5. Description of the approach/solution:
5.1 When was the approach/solution developed? 5.2 By whom was the solution developed? 5.3 By whom is the solution used? 5.4 Which services does the solution provider offer? (If applied in institutional catering, public events, or food takeaway and home delivery) 5.5 Objectives, targets and main measures of the approach (If applied in strategic management): 5.6 Impact of the solution on prevention, reuse and reduction of materials in circular food delivery (if available, e.g. in numbers):
6. What are the strengths of the approach/solution? What has worked well?
7. Are there any weaknesses in the approach/solution? What hasn't worked, and what could be improved? Has the solution been adapted or developed further? Has feedback been collected from consumers?
8. Adaptation potential of the approach for the partner municipalities: feasibility, acceptability and replicability on a scale from 1–7 where 1 means completely unfeasible/unacceptable/unreplicable and 7 means completely feasible/acceptable/replicable:
Feasibility: Is the solution legally feasible? Is the solution technically feasible? Is the solution financially feasible? Acceptability: Is the solution socially acceptable? Replicability: Is the solution replicable in other BSR municipalities?
9. Link(s) and reference(s):

Annex 2. Questionnaire for identifying barriers and needs

In your opinion, what are the main barriers to circular food delivery development and implementation?

Please tick the boxes of the relevant barriers and specify, if possible, the challenges that these barriers create in your municipality/institution/company.

If any crucial barriers are missing from the list, please add new rows for them.

Name of the partner:

POTENTIAL BARRIERS	PLEASE SPECIFY
<i>Strategic management in municipalities (from a municipality view)</i>	
National regulations that do not support circular food delivery systems (e.g. objectives, targets, requirements and measures)	<input type="checkbox"/>
Local regulations that do not support circular food delivery systems (e.g. objectives, targets, requirements and measures)	<input type="checkbox"/>
Lack of municipality-level guidance materials to help stakeholders implement the circular food delivery system	<input type="checkbox"/>
Poor communication and awareness raising (municipality level) on circular food delivery options and benefits	<input type="checkbox"/>
Lack of time/resources (municipality level) to support circular food delivery system at the local level	<input type="checkbox"/>
Lack of information on the municipality level about the possible use areas (incl. statistics) of circular food delivery solutions	<input type="checkbox"/>
...	<input type="checkbox"/>
<i>Institutional catering (in municipality/institutional view)</i>	
No motivation due to a lack of clear objectives and requirements	<input type="checkbox"/>
Lack of knowledge and conviction about the benefits (incl. environmental impact) of circular food delivery	<input type="checkbox"/>

Lack of knowledge and guidance (materials) to procure food in a circular way	<input type="checkbox"/>	
Lack of potential partners and technical solutions for circular food delivery	<input type="checkbox"/>	
Lack of acceptance due to higher expenses	<input type="checkbox"/>	
...		
<i>Public events (in event organisers' view)</i>		
No motivation due to a lack of clear objectives and requirements	<input type="checkbox"/>	
Lack of knowledge and conviction of event organisers about the benefits (incl. environmental impact) of circular food delivery	<input type="checkbox"/>	
Lack of circular food delivery solution providers (e.g. for large events to ensure a <u>sufficient number of deposit containers and return points</u>)	<input type="checkbox"/>	
Difficult to choose a suitable solution among the different service providers	<input type="checkbox"/>	
Lack of acceptance by food stall operators (need to plan logistics and storage , i.e. enough deposit containers, higher expenses due to washing and distributing the food and drink containers)	<input type="checkbox"/>	
Legal constraints (e.g. tax accounting) that hinder to implement the reusable/deposit systems in events	<input type="checkbox"/>	
Low motivation of event visitors to participate in the system (e.g. low return rates)	<input type="checkbox"/>	
...	<input type="checkbox"/>	
<i>Food takeaway and home delivery (food providers, e.g. cafes, restaurants, etc. and customers' view)</i>		
Lack of knowledge and conviction of both cafes and consumers about the benefits (incl. environmental impact) of circular food delivery	<input type="checkbox"/>	
Lack of acceptance by cafés and restaurants due to logistics, storage and washing requirements and opportunities	<input type="checkbox"/>	
Lack of acceptance of deposit system by cafés and restaurants due to financial aspects (e.g. higher cost for clients, management of deposit fees, etc.)	<input type="checkbox"/>	
Different competing deposit and return systems on the market confuse and make it difficult to	<input type="checkbox"/>	

handle the different containers (applies both for cafés and restaurants as well as customers)		
Lack of ability to scale the system up and down by the providers of reusable food and drink containers, depending on the number of customers using the system at the same time	<input type="checkbox"/>	
Lack of resources for marketing and promotion of the system among the customers	<input type="checkbox"/>	
Lack of acceptance by customers due to higher expenses for the deposit	<input type="checkbox"/>	
Lack of acceptance by customers due to complicated deposit transaction activities	<input type="checkbox"/>	
Lack of acceptance by customers due to inconvenient return possibilities (e.g. too few return points)	<input type="checkbox"/>	
...	<input type="checkbox"/>	

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CIRCULAR ECONOMY

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