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# DRAFT PROTOTYPE (SOFT) SOLUTIONS

Cluster II: Eat-at-place / events

*[draft document]*

PP15 Green Events Hamburg

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## 1. Introduction

Events are occasions where people come together and find inspiration. At the same time, enormous amounts of waste are produced at events, causing considerable damage to the environment. Especially in the catering sector, when food and drinks are served with tableware and cups for quick consumption at an event, single-use packaging comes into play. What sounds simple in individual cases - choosing a container or cup that can be cleaned and reused - is a major challenge on a societal and systemic level. How can the transformation towards a circular economy using reusable packaging succeed? This prototype solution tackles this challenge, presents practical measures that support reuse at events and a whole mindset change towards a circular way of acting.

The project is focused on municipalities and municipal entities, event organizers and stand operators who serve food and drinks and, crucially, event attendees. These players can drive the circularity of event-type eating by adopting sustainable solutions and changing routines and behaviors.

The problem is that such options are dispersed, their applicability is not tested beyond a particular case, and they are not tailored nor mainstreamed widely enough to create acceptance by businesses and consumers.

The aim of this solution prototype is to identify and describe the existing challenge that needs to be overcome for a transformation from single-use to multi-use packaging at events. In addition, practical measures are presented that can promote a change in routines and behavior towards the use of reusable packaging, and thus a sustainable reduction in plastic waste.

The special feature is the international cooperation of representatives from different countries in the Baltic Sea region, both with regional authorities and municipal networks. Together, the status quo was assessed, and step-by-step, this set of measures was found for a transformation to multi-use packaging at events.

The group of stakeholders that has been intensively involved in the development of the solution prototype consists of:

- PP20 Denmark, Copenhagen, Copenhagen Municipality
- PP5 Estonia, Tallinn, Tallinn Strategic Management Office



- PP3 Latvia, Liepaja, Liepaja city municipality administration
- PP2 Latvia, Riga, Riga City Council
- PP15 Germany, Hamburg, Green Events Hamburg

This document is structured as follows: First, in Chapter 2, the system of events is described: What characterizes an event and what environmental issues come into play there? It also identifies the key hurdles that need to be overcome in order to perform a transformation.

In the following, the legal framework conditions of the partner regions involved here are presented with the most important legislation relating to disposable and reusable packaging at events.

After giving a brief theoretical classification of what the concept of circular economy describes, the focus returns to events and the reusable value chain process is described. The key players involved in circular event catering are then named and their roles briefly explained.

Chapter three then lists the collection of hurdles and measures and describes the most innovative and important measures in more detail.

## 2. Methods & Data collection

The data basis for the solution prototype is essentially based on interviews, surveys and workshops. These were methodically developed and documented as part of a design SPRINT. In total, findings from over 40 interviews, 25 participants in an online survey and over 100 participants in workshops/ discussions were incorporated into the prototype solution. The above-mentioned partners from Denmark, Latvia, Estonia and Germany carried out the data collection. All identified stakeholder groups (see below) participated.

### Research into good practices

Good practices for partner municipalities were identified through interviews and online research. Good practice in this area refers to events that have already banned single-use plastics (regardless of whether an ordinance exists) and that implement an innovative use of reusable systems.

### Online survey

In an online survey, 25 people from different stakeholder groups were asked about the obstacles and possible solutions for implementing reusable systems at events.

### Design Sprint

The SPRINT method was used to identify the stakeholders involved in event-type eating. A value chain was developed to specify the process and dependencies of reusable event-type eating. Obstacles and possible solutions were then assigned. These were collected, analyzed and then evaluated according to their relevance and innovative strength.

The first step of the sprint method involved

**a. Identifying relevant stakeholders.** The most important stakeholder groups for public events were identified as:

- policy makers
- event organizers
- service providers
- stand operators
- end users.

**b. Identifying drivers and barriers:** Primary data collection methods such as online interviews, face-to-face interviews and informal discussions were conducted by all cluster partners.

**c. Conducting stakeholder workshops:** Workshops were held with the above-mentioned stakeholders and possible measures that could be useful for switching to reusable packaging at events were discussed.

### 3. System description: Eat-at-place/ events

Events are complex systems that differ widely depending on their type, size, duration, accessibility, financing and other factors. The diversity of events means that there are several possibilities as to which stakeholders are involved in the process and which problems arise when it comes to the transition from single to multi-use packaging. At the same time, the effectiveness of circular measures is also individual depending on the context of the specific event. First of all, it is therefore important to establish the scope of an event and the systemic assumption under which this document is to be read.

#### 3.1. Event scope and event type eating

An event is either one-off or recurring and serves to bring together a specific group of people to achieve a common goal, exchange information or entertain.

This working group focuses on public events such as street festivals, music events or sporting events. Public events are characterized by the following factors:

- **Open participation:** Public events are generally open to everyone. As a rule, participation does not require a personal invitation or special qualifications.
- **Diverse target groups:** The target groups of such events are often heterogeneous, which means that people of different ages, genders, social classes or interests can take part.
- **Venues:** Public events often take place in public places such as stadiums, parks, exhibition grounds, public squares or cultural centers in order to provide access to as many people as possible.
- **Event size:** The event size varies, but this project focuses on larger events (10,000 or more people).

The food and drinks on offer at events play a central role in the design of the event. The offer is usually provided either by caterers, food trucks, restaurants or food stands. The food and drinks are usually handed out together with crockery, cutlery and cups and then consumed in the event area and are not taken home. This is called **event-type eating**.

### 3.2. Environmental issues

Much of the waste generated at events is caused by the plates, cutlery and cups provided, which are often made from single-use plastics. Single-use plastics are expected to be thrown away by the user. With these plastics, convenience takes precedence over durability and reuse.

The production and disposal of plastic causes several gigatons of greenhouse gas emissions worldwide every year ([OECD 2022](#)).

“The plastics lifecycle is closely linked to climate change, as most primary plastics are fossil-fuel based. Fossil fuel extraction, plastics production and conversion contribute 90% of quantifiable plastics-related GHG emissions. Significant GHG emissions also come from the end-of-life stage.” ([OECD 2022](#))

If the packaging ends up in the environment, it pollutes animals, humans and the entire ecosystem. In terms of weight, single-use plastic makes up the largest proportion of plastic pollution in the sea. Up to 23 million tons of plastic waste end up in our oceans every year ([WWF 2024](#)). It becomes very clear that plastic pollution and measures to combat climate change go hand in hand.

To conserve resources and avoid waste, single-use plastics in particular must be reduced or avoided. A stronger focus on circular solutions, i.e. reusable packaging, is an important building block for this. So far, however, these have been used too little, especially at events ([WWF 2023](#)).

Furthermore, many types of single-use packaging are not considered in EU-wide or national legislation (see chapter 2.5.) or the introduction of reusable models is circumvented in practice for various reasons. The fact that the regulation is not sufficiently effective is evident in the reusable quotas. For example, in 2023, only 7% of cups and only 0.3% of meals in the German food service industry were served in reusable packaging ([Quelle](#)). The market-wide changeover to circular event catering is therefore still in the start-up phase.

### 3.3. Challenges and opportunities: reusable packaging at events

The transition from disposable packaging to reusable solutions is progressing slowly, as the stakeholders involved are faced with a variety of challenges. Again, these challenges vary considerably depending on the event format, its funding and the national and/or local legislation. However, the main problems can be categorized as follows:

#### **Technical Challenges:**

The infrastructure for reusable service providers varies from region to region. While providers of reusable packaging can be found in most of them, specific services such as a range of varied reusable designs, (mobile) washing lines, vending machines for reusables and reliable online payment services are not always sufficiently available.

This means that the specific needs of a wide variety of event organizers cannot be adequately met.

#### **Regulatory:**

Overly lax legislation on the use of reusable materials at events or unclear long-term perspectives on how these will develop are slowing down the conversion of companies to offering reusable solutions. Event organizers are also irritated by the sometimes complicated legal requirements or circumvent them, as controls and sanctions are often not to be expected.

#### **Financial challenges:**

In most cases, the switch from single-use to reusable packaging is associated with additional costs in terms of procurement, logistics, storage, cleaning and communication. Additional personnel resources cannot yet be compensated for. The economic viability of circular measures in the event sector is an essential factor to evaluate. Although the long-term advantages of circular practices, such as lower waste management expenses and minimized environmental harm, are significant, the upfront costs can be substantial.

#### **Knowledge & Behavior:**



Event organizers, stand operators and end users/ guests have knowledge gaps and uncertainties regarding the environmental impact of reusable packaging. In addition, there are gaps in the knowledge of all those involved in the process as to exactly how the reusable systems function and are handled. Many guests are used to the convenience of single-use packaging, which allows for easy disposal without the hassle of paying a deposit and returning the reusables. Changing this mindset towards a more sustainable option demands an increased awareness as well as incentives.

### Events as places of transformation

Even though these challenges are not easy to overcome, many event organizers are already developing creative approaches to reusable packaging in order to reduce waste. Events are occasions of inspiration and enthusiasm and are ideally suited as windows of transformation as they can be seen as a laboratory and place of experience. Guests can try out and live sustainability, and thus acquire the mindset and behavioral change towards reusability.

### 3.4. Regulatory framework

In 2019, the European Parliament and the Council of the European Union adopted Directive (EU) 2019/904, also known as the "Single-Use Plastics Directive", which sets out specific measures that are mandatory for all EU Member States in order to reduce the environmental impact of single-use plastics. These apply to all events. The directive includes the following two points:

**Ban on certain single-use plastic products:** Some single-use plastic products for which alternatives exist have been banned since July 3, 2021. These include e.g. cutlery, plates and straws.

**Reduction of single-use plastics:** Member states must take measures to reduce the consumption of other single-use plastic products for which there are currently no alternatives. These include, for example, food containers and beverage cups.

The directive gives member states flexibility in choosing specific measures to achieve the set goals. This is why there are different legal approaches in the various EU member states ([EUR-Lex 2019](#)).

In most EU countries, it is 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 ([source](#)). The most significant regulatory frameworks at national and municipal level are described below.



The regions with the strictest and most far-reaching regulations are named first. Those further down have less stringent regulations.

## **Estonia**

Since January 2024, only reusable containers and cutlery have been allowed for serving food and drinks at public events throughout Estonia, according to the Packaging Act.

### **Tallinn**

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-use fossil-based plastic dishes. Therefore, Tallinn amended this regulation (rules for organizing and holding public events in Tallinn) by banning all single-use 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 plastics, or biodegradable plastics are permissible.

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

## **Germany**

Since January 1, 2023, Restaurants, cafés, cinemas, supermarkets with fresh food counters, bakeries, canteens, delivery services, petrol stations, mobile catering businesses and **events of all kinds** 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 m<sup>2</sup>. The sales area includes all areas freely accessible to customers - including outdoor seating areas. For delivery services, this also includes all storage and dispatch areas. Nevertheless, they are obliged to fill reusable items brought by customers.

Events are also subject to the obligation. If food and drinks are supplied directly by the organizer, the entire event area is considered a sales area. However, sales stands of independent providers on event grounds are considered individually and according to their respective size: All stands of the respective provider as well as the vendor's seating areas on the event site make up the assessment variable.

The state authorities are responsible for monitoring the implementation of the obligation to provide reusable packaging. Violations can be punished as administrative offences with fines of up to €10,000. Citizens have the opportunity to report any offences they notice to the public order office and can thus support the prosecution of offences.

## **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.

## **Latvia**

The producer has an obligation to (1) offer or sell to the consumer reusable or plastic-free products as an alternative to single-use plastic products; (2) inform consumers about the possibility of using their takeaway drinking glasses or food packaging as an alternative to single-use plastic products.

## **Riga**

Since January 1, 2024, there have been municipal regulations coordinating street trading during events and temporary street trading. According to this regulation, the trade organizers 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.

## **Liepaja**

No additional regulations.

## **Denmark**

There are no additional national regulations regarding single-use plastics; the current regulations align with those established by the European Union (see above).

## **Copenhagen**

The City of Copenhagen (municipality) has a regulation concerning single-use plastics for events held in public areas and areas without streets, such as parks. Events are prohibited from using single-use plastic cups if they have more than 2,000 servings per day. The regulation refers exclusively to plastic cups ([Ellen Macarthur Foundation 2018](#)).

## **3.5. Circular Economy**

The circular economy is an important building block in tackling environmental issues. The circular economy is a model of production and consumption in which existing materials and products are (re)used as long as possible. In this way, the life cycle of products is extended ([Europarl 2023](#)).

There are strategies that reduce the consumption of natural resources and support the recycling of materials, thereby reducing the generation of waste. Such strategies are referred to as R-strategies. They are seen as the core framework for the transformation towards circular value creation. The R-strategies are as follows:

- R0 Refuse
- R1 Rethink
- R2 Reduce
- R3 Reuse
- R4 Repair
- R5 Refurbish
- R6 Remanufacture
- R7 Repurpose
- R8 Recycle
- R9 Recover ([Prosperkolleg 2021](#)).

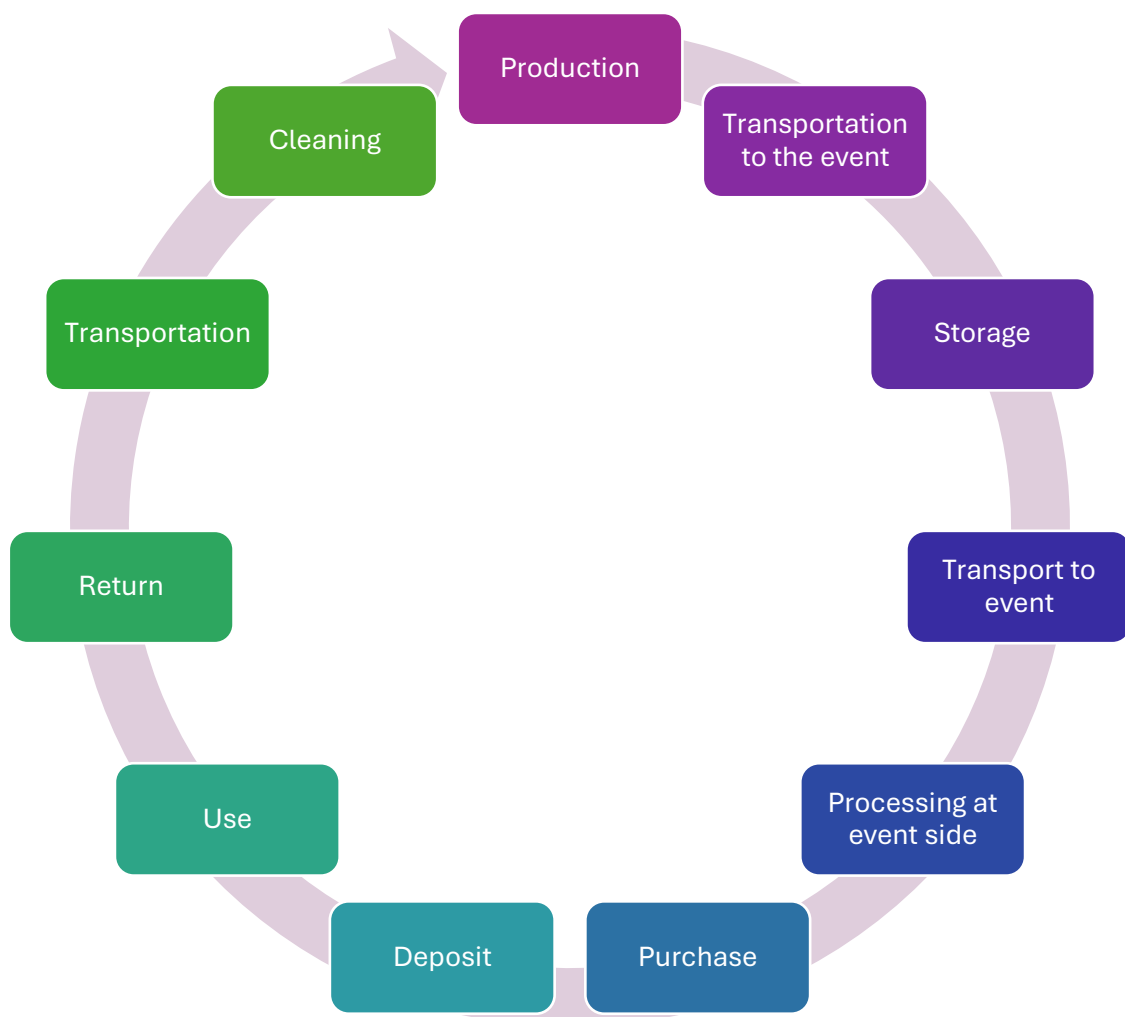
In practice, this means that waste is reduced to a minimum. After a product has reached the end of its life, the resources and materials remain in the economy as far as possible. This means that they are reused productively again and again in order to continue generating added value.

In the event-type eating work area, the focus is on the following strategies:

- R0 Refuse
- R2 Reduce
- R3 Reuse

The use of reusable packaging avoids (**refuses**) the use of disposable products, which are often thrown away after a single use. Reusable packaging helps to reduce the consumption of raw materials and energy, as it can be **reused** over many utilisation cycles. **Reusable** cups, plates and cutlery can be used several times, which reduces the need for new products and minimizes the amount of waste produced.

### 3.6. The reusable value chain at events



The diagram describes a value chain for the use of reusable packaging at events. The process is illustrated here generically and may vary depending on the type of event. The individual steps are as follows:

1. **Production:** Reusable packaging (e.g. cups, plates, cutlery) is produced.
2. **Transportation:** After production and sale, the reusable packaging is delivered to the buyer, e.g. a reusable service provider.
3. **Storage:** The packaging is stored in a warehouse until it is needed for the event.
4. **Transportation to the event:** The reusable packaging is transported to the event location.
5. **Processing at the event location:** The packaging is distributed to the stand operators and, if necessary, technical systems are provided for the deposit.
6. **Purchase:** Participants of the event receive the reusable packaging filled with food or drinks from the stand operator.
7. **Deposit:** They are issued against a deposit, which can be paid in cash, with an app or by bank transfer.
8. **Use:** The participants use the reusable packaging for consumption.
9. **Return:** After use, participants return the packaging to a return point and receive the deposit back.
10. **Transportation:** The cleaned packaging is transported to a washing station.
11. **Cleaning:** The reusable packaging is cleaned at the event area, in a mobile washing station or in a washing line to prepare it for the next use.

### 3.7. Stakeholders and their roles

In the case of event-type eating, the following stakeholders were identified as the most relevant when it comes to the potential to influence the systemic shift from single-use to multi-use:

**1. Policy Makers:** are usually representatives of public authorities, local administrations or government organizations that define framework conditions and guidelines for events. Their role is crucial for the regulation and setting of standards that must be adhered to.

**2. Event organizers:** Event organizers are in contact with all stakeholders and are responsible for the planning, organization and implementation of the event. They coordinate the various stakeholders and ensure that all necessary resources are available and manage the event budget. They work closely with the service providers and stand operators. They are planning events in line with local and national legislation and providing a good experience for the participants.

**3. Service providers:** The offerings of the system service providers vary. Some offer a complete reusable system including delivery, rinsing, storage and logistics. Others specialize in a specific area and only operate mobile or permanently installed industrial rinsing lines, for example, or offer logistics services. The role of the providers is to implement infrastructure, operate the reuse system, as well as advocate for the reuse system.

**4. Stand operators:** Stand operators are mainly in contact with the event organizer and the customer. They are entrepreneurs and sell and serve food and drinks. They are also responsible for handing out reusable containers and for handling the deposit as well as explaining the system. Stand operators also take back the reusable products after use.

**5. End users:** The participants are the event's target group. They have a significant influence on the success of an event, as their satisfaction and commitment are crucial. They consume food and drink at the event. The role of end consumers is to dispose of their used reusable containers correctly and at the same time to commit to waste prevention.

### 3.8. System elements of events

During data collection, it became clear that the process steps of the value chain are not optimally suited to assigning obstacles and measures. This is due to the fact that some process steps are not considered in sufficient detail or that overarching fields such as legal framework conditions, the existing reusable infrastructure or communication issues cannot be mapped well. It was therefore decided to use the so-called system elements as a framework.

System elements are mostly smaller in scale than the value chain processes steps. Obstacles and measures can be better linked to them and described in more detail. These were abstracted, the following system elements are the most frequently mentioned elements that were named in the interviews, surveys and discussions. There is a distinction between technical system elements and framework condition system elements.

#### Technical

**Material & design:** Reusable containers can be made of plastic, glass or metal and can be designed for different usage requirements. The design plays a role in both storage and cleaning. In addition, usage requirements for the material are relevant for stand operators who need different containers for different food and drinks. Furthermore, the materiality plays a role when it comes to assessing whether the packaging is identified as high-quality or as reusable in general.



**Logistics & storage:** Depending on whether and from where reusable containers are purchased, they must be stored, transported to the event, distributed there and stored again at the distribution point. Dirty containers must be collected and taken to the cleaning station. Logistics is a key element for the smooth running of the reusable system, especially at large events at peak times.

**Hygiene / food safety:** Hygiene standards must be observed when filling and issuing reusable containers.

**Return & deposit:** There are various return systems for reusable containers, which are known and established in different ways. The most common is the return of containers at the stand where they are issued in exchange for a deposit in cash. There is also the option of setting up cashless systems that are app-based or work via bank transfer. Completely deposit-free systems are also a possibility, e.g. using donated second-hand crockery, which tends not to have high shrinkage rates.

**Knowledge:** The level of knowledge regarding the environmental impact of reusable versus single-use products varies greatly among all stakeholders involved and slows down the overall understanding of the transformation. Furthermore, there are often gaps in knowledge about how the respective reusable system works at an event.

**Communication:** Communication is a key element that must be considered on an ongoing basis. All stakeholders must be in a communicative exchange, systems and effects must be explained between organizers and system providers and the end users.

**Rinsing:** The professional cleaning of reusable containers can be handled by different parties. Depending on the size of the event and the available water and electricity connections, this can either be done by hand on the event site or with smaller dishwashers. Handling as part of a comprehensive service package from a reusable provider is also an option. In this case, cleaning usually takes place in an external dishwashing line. The existing market density of service providers in this area varies from region to region.

## Framework conditions

**Financing:** The financing of reusable packaging poses a challenge for all stakeholders, as disposable packaging is currently cheaper and involves less effort. The start-up financing of business models, the financing of the use of reusable packaging at events, as well as the financing of funding opportunities on the part of the municipality must be considered.

**Reusable service infrastructure:** The reusable service infrastructure refers to providers of reusable packaging and cups, logistics, washing facilities or the handling of the entire system (full-service provider). The existing service infrastructure is developed to varying

degrees depending on the region. While there are usually sufficient providers in urban areas, this differs in rural regions. The range of specific containers also varies greatly.

**Regulations:** Regulatory measures are key to opening up long-term prospects and providing uniform guidelines for all stakeholders. This can take the form of bans, requirements or tax regulations.

## 4. Circular measures for preventing and reducing food packaging

### 4.1. List of obstacles, measures and stakeholders involved

All Obstacles and possible measures identified during the data collection in the various regions are listed below based on the system elements. These are linked to each other and indicate in which region they are considered particularly relevant. The table is a collection and is then expanded with a more detailed list of the most relevant measures.

Obstacles	Most relevant stakeholders affected	Measures	Regional significance
<b>Material &amp; Design</b>			
Cups (glass) get worn out. It is difficult to assess whether the glasses can be used and handed over to end users	Stand operator Event organizer	/	PP3 Liepaja
Standardized containers are not available	Stand operator Event organizer	/	PP3 Liepaja
It's difficult to predict the required types of tableware; The tableware options offered by the service provider are not sufficient	Event organizer Stand operator	Find suitable durable tableware that meets reuse requirements	PP5 Tallinn
Event organizers and stand operators expect a wide variety of dishware	System service provider Stand operators	Find suitable durable tableware that meets reuse requirements	PP5 Tallinn
Reusable cutlery looks single-use and is thrown away	System service provider Event organizer	/	PP5 Tallinn
<b>Logistics &amp; storage</b>			

The event venue is too remote; Higher transportation costs	System service provider Event organizer Stand operators	Create regional warehouses. Dishes could be washed in a school building or catering company, for example at night, when the dishwasher is free from its usual load	PP5 Tallinn
The workflow is not consistent on a weekly and yearly basis, making it difficult to find employees (for system service provider)	System service provider	/	PP5 Tallinn
Too many similar events happening at the same time, all requiring similar dishware	System service provider	/	PP5 Tallinn
The transportation logistics of tableware involve extra work (for Event organizers)	Event organizers	/	PP5 Tallinn PP2 Riga
Full-service providers do not rent dishes in small quantities. Several hundred dishes are packed in one box, the whole box must be rented. This creates an excessive cost for those who want to rent a small quantity, as the fee is charged for renting the entire box.	Event organizers	The full-service provider must consider whether and in what way they can also rent out dishes in smaller quantities	PP5 Tallinn
Shortage of tableware; Difficult to calculate how many containers are required (peak times)	Event organizers Stand operators	/	PP5 Tallinn
Additional storage capacity is required. For different types of cups/ glasses/ containers and for dirty tableware	Stand operators Event organizers	Central return station at the event so that no additional storage capacity is required for dirty crockery at the stand	PP15 Hamburg PP2 Riga

		Modify the menu so that meals either do not require packaging or so that all food can be packaged in the same type of packaging	PP5 Tallinn
		Uniform design of glasses, uniform requirements throughout the city	PP3 Liepaja
<b>Hygiene / Food safety</b>			
The filling of containers brought in by the customer is voluntary. The caterer takes responsibility for food safety.			PP15 Hamburg
Customer containers must not enter the operational area (via the counter).			PP15 Hamburg
<b>Return &amp; deposit</b>			
Low return rate: inconvenient due to time expenditure	End users	Vending machines that transfer the deposit back to the bank account and are mobile	
		Central return station on the event area, so that the return does not take a long time at the food stand. Additional incentives at the return station, e.g. through charitable donations per return, etc.	
		Deposit system with digital return points that are places strategically to accommodate the users' convenience	
Low return rate: End users do not know how the system works, where to return etc.	End users	Adaptation/behavioral change from stand workers and volunteers (workers at the festival in general): pre-event	PP20 Copenhagen PP2 Riga PP15 Hamburg

		training, clear communication guidelines, on-site support. All workers for the event must be thoroughly briefed on their role in passing on information about the recycling system to the participants. This includes which types of containers are reuseable and where to return them.	
		Adaptation/behavioral change from users – communication, visibility and behavioral architecture (poster, sticker, gamification etc.)	PP20 Copenhagen PP2 Riga
Despite the fact that the deposit money is charged from the customer while they buy a meal or a drink, a magnificent amount of the reusables still end up in the trash container. This is a problem for the multiples owner, whether it is the full service provider or the caterer/food truck	Stand operator System service provider	Volunteer involvement in the event to guide people; drawing people's attention to the fact that the dishes must be returned; monitoring of the garbage containers so that reusable dishes are not thrown there; volunteers must be personally instructed, their suitability for this work assessed, agreements concluded between the volunteers and the event organizer	PP5 Tallinn PP15 Hamburg
Low return rate: Too little return points	End users	Create a city-wide network for returning; municipality provides information and oversight; reporting from service providers for transparency; distinguish service providers with	PP5 Tallinn

		traceable circular systems would regulate the market	
		Decentralized return stations in the city, if necessary, return to bottle deposit machines	PP15 Hamburg
		Central return station on the event area, so that the return does not take a long time at the food stand. Additional incentives at the return station, e.g. through charitable donations per return, etc.	PP15 Hamburg
Low return rate: Stolen, forgotten packaging	End users	The possibility to return dishes should be provided inside and outside the event venue. Communication also should be placed near the exits. It would be desirable to enable the return of the dishes even days after the event.	PP5 Tallinn
		Deposit system with digital return points that are placed strategically and can be operated by anyone, so the forgotten packaging can be returned by all	PP20 Copenhagen
High deposit is unattractive	End users Stand operator System service provider	Electronic solutions for return and deposit (RFID), deposit only as an authorization on bank account	PP15 Hamburg
Customers do not have cash with them to pay the deposit	End users		PP3 Liepaja
High cash holdings required to settle the cash deposit	Stand operators	?	PP3 Liepaja PP2 Riga



Incorrect return transfer for electronic deposit	End users	?	PP5 Tallinn
Additional work for collection of containers that are not returned	Stand operators Event organizer	deposit system with digital return points	PP20 Copenhagen
A change needs to be made in the cash register system to include a deposit fee	Stand operator	?	PP5 Tallinn
There are no uniform rules on VAT withholding, nor is there a uniform cash register system	Stand operator Event organizers	?	PP2 Riga
Lack of knowledge: Event organizers / caterers are not familiar with using reusable food and drink packaging, which reuse-systems are on the market (such as reverse vending machines), and in general do not know much about reuse. In connection with this, they also expect a high cost associated with reuse	Event organizers Stand operator	Workshops: Identify the needs of the event organizers and inform them about their options. Debunk any myths regarding reuse and present them with the best reuse-solution for them. Stand owners should be included to ensure that we cover their needs as well.  Test different solutions and work out a whitepaper for event organizers to use as a handbook.	PP20 Copenhagen PP15 Hamburg
	Event organizers Stand operator	A uniform design and informative materials offered by the municipality, which can be used by all traders (step-by-step guide)	PP3 Liepaja
Reusable cutlery does not have deposit, it also looks single-use.	System service provider Event organizers		PP5 Tallinn
<b>Rinsing</b>			

Concerns about food safety, when cleaning without a professional dishwasher	Stand operators Event organizers End users	?	PP3 Liepaja PP15 Hamburg
If reusable items are washed in-house, this requires time/ additional personnel resources.	Stand operators Event organizers		
<b>Communication</b>			
End users do not know whether they are allowed to bring their own crockery to a specific event or whether cash is required.	Event organizers		PP5 Tallinn
High communication effort between event organizers and stand owners, who are ultimately responsible	Event organizers Stand operators Policy makers	Municipality: Onboard all different stakeholders before the event, prepare guidelines, bring them all to one table to discuss. (test who to invite, how often etc.)	PP3 PP2
		Checklist/ contract that provide information/ educate them	PP3
		Sanctioning (cuts on funding, fines, re-permission)	
Customers are not educated in this area; when coming to the event, traders must tell customers about the deposit system and its use	End users Stand operator	Popularize the topic and the system on the Internet, in the form of a video, in writing, so that the visitor of the event is already knowledgeable and understands the system.	PP2 Riga
		Adaptation/behavioral change from stand workers and volunteers (workers at the festival in general): pre-event training, clear	PP20 Copenhagen

		communication guidelines, on-site support. All workers at the event must be thoroughly briefed on their role in passing on information about the recycling system to the participants. This includes which types of containers are reuseable and where to return them.	
		Adaptation/behavioral change from users – communication, visibility and behavioral architecture (poster, sticker, gamification etc.)	PP20 Copenhagen
Lack of knowledge about the benefits/climate impact of reusable packaging	Event organizers	research valid database for different materials and systems	PP15 Hamburg
	End users	Campaigning work, info points	
Lack of knowledge about the benefits/climate impact of reusable packaging	End user		PP15 Hamburg
Lack of knowledge and practical experience if the reuse system is city-owned; lack of knowledge and practical experience if the reuse-system is the responsibility of the event organizer	Event organizers		PP3 Liepaja
<b>Financing</b>			
High start-up investments required for service providers, unclear whether these will pay off	System service providers	A clear regulation to use reusables would enable existing solutions to be implemented on a large scale. There would be an investment incentive for	PP15 Hamburg PP2 Liepaja

		event organizers and system providers	
		Funding opportunities from municipality	
Municipality: difficult to establish suitable funding criteria to support companies moving forward to reuse system	Policy makers	Return rate as funding criteria / mandatory criteria in tender	PP5 Tallinn
Every caterer in Estonia can choose how they price the reusable dish service and where they buy or borrow the dishes. There are caterers who charge a 2 €-deposit for the dishes and an additional 1€ non-refundable service fee. Unequal competition has emerged in the market. This creates an opportunity for fraudsters who buy very low-quality cheap dishes and never actually reuse them	Event organizers Stand owner System service provider	This problem can be solved with more thorough and effective supervision. Event organizers should set centrally managed dish services and prohibit caterers from charging non-refundable fees for the use of dishes. Event organizers and municipality have to be aware of the problem and motivated to solve the problem.	PP5 Tallinn
Large financial investments - purchase of glasses, informative materials	Event organizers Stand operator	A uniform design and informative materials offered by the municipality, which can be used by all traders	PP3 Liepaja
		Include costs in price (e.g. Ticket price, deposit/service fee).	
<b>Reusable service infrastructure</b>			

Additional mobile rinsing infrastructure is required	Stand operators Event organizers	Create incentives for businesses to create or transit to sustainable business models (via. funding/regulation)	PP15 Hamburg
		City-owned mobile washing stations that can be rented	PP15 Hamburg
Additional stationary rinsing infrastructure is required	Stand operators Event organizers	Create incentives for businesses to create or transit to sustainable business models (via. funding/regulation)	PP3 Liepaja PP2 Riga
		Regional warehouses; Dishes could be washed, for example, in a school building or a catering company, for example at night, when the dishwasher is free from its usual load. A suitable space for a small warehouse needs to be bought or rented.	PP5 Tallinn
New field of business	System service provider	Framework conditions/regulatory support from public authorities / Support sustainable business models regarding reuse, so that reuse systems can compete with single use	PP20 Copenhagen PP15 Hamburg
Lack of incentive for businesses to transit to reuse	System service provider	Framework conditions/regulatory support from public authorities / Support sustainable business models regarding reuse,	PP20 Copenhagen PP15 Hamburg

		so that reuse systems can compete with single-use packaging	
Lack of support from public authorities	System service provider	Framework conditions/regulatory support from public authorities / support for sustainable business models regarding reuse, so that reuse systems can compete with single-use packaging	PP20 Copenhagen PP15 Hamburg
Event organizers are not familiar with using reusable food and drink packaging, which reuse-systems are on the market (such as reverse vending machines), and in general do not know much about reuse	Event organizers	Workshops: Enter into a dialogue with the event organizers and the stand operators through workshops. Understand who attends their event, which types of food- and drinks stands are present, and general preferences and constraints.  Test different solutions and work out a whitepaper for event organizers to use as a handbook	PP20 Copenhagen
There is no clear system and there is a lack of information on the deposit service providers in the country. If there is confusion with the deposit system, it is not clear who to ask for help and who is responsible for it	Event organizers	Create a single point of contact where you can call and ask all questions on this topic	PP2 Riga
Glass delivery/rental is not available	Event organizers Stand operators		PP3 Liepaja



Lack of incentive for businesses to transit to reuse	System service provider	Framework conditions/regulatory support from public authorities / support for sustainable business models regarding reuse, so that reuse systems can compete with single use	PP20 Copenhagen PP15 Hamburg
Lack of support from public authorities	System service provider	Framework conditions/regulatory support from public authorities / support for sustainable business models regarding reuse, so that reuse systems can compete with single use	PP20 Copenhagen PP15 Hamburg
<b>Regulation</b>			
City does not have enough rights to control whether the dish fulfills the requirements (food safety etc)	Policy makers		PP5 Tallinn
No clear definition for reusable dish	Policy makers		
Lack of resource of surveillance - difficult to control whether the reusables are really washed and reused	Policy makers		
Even if there are certain criteria for reuse, city does not have competence to evaluate the quality of the declaration of conformity	Policy makers		
City does not have enough rights to control whether the dish fulfills the requirements (food safety etc)	Policy makers		PP5 Tallinn

Overlapping topics			
There is no motivation to comply because many do not and it is difficult	Event organizers Stand operators		PP2 Riga
If every stand can use their own reusable system, it is hard to control the quality of the system			

## 4.2. Detailed description of the most urgent, feasible and innovative measures.

In the following, measures are listed that were identified as the most effective measures for solving the key problems for a system change towards reusable packaging at events. These measures address different stakeholders who can implement them; these are noted in the description of the measures.

### List of measures

#### Return & deposit:

Measure 1: Mobile deposit return machines that transfer deposit back on card or festival wrist band

Measure 2: Central return station at the event area

#### Infrastructure:

Measure 3: Framework conditions from public authorities

Measure 4: Financial support from the local authority

#### Communication:

Measure 5: Pre-event training und communication support

Measure 6: Communication campaign (pre-event)

Measure 7: Onboard stakeholders before the event (communication)

Measure 8: Adaptation/behavioral change from users – communication, visibility and behavioral architecture (poster, sticker, gamification etc.)

### 4.2.1. System element: return and deposit

**Problem:** Low return rate due to inconvenience and time-consuming return

A key problem in the return process at events is that the return rate is too low. This leads to cost inefficiency and a poorer environmental footprint. This effect is caused, among other things, by excessively long waiting times for returns. This is for example caused by too few return points on the event side, particularly high staff utilization of stand operators during peak times, or a cumbersome processing of deposit returns (apps/ bank-transfer).

**Measure 1:** Mobile deposit return machine that transfer deposit back on card or festival wrist band

Deposit return machines for reusable packaging can represent a further option for returns and reduce waiting times and personnel capacities. These can be set up at events and refund the deposit for the reusable packaging and cups used at the event in different ways. For example, with a deposit voucher, the return of cash (which is only recommended for supervised machines) or via SEPA transfer, app-solution or festival wristband.

Reverse vending machines can take back different containers from several suppliers, either through (AI-supported) programming or by using reusable containers that have an RFID chip.

**Target group of the measure:**

✓ End users | ✓ Stand operators | ✓ Event organizers |

**The measure can be implemented by:**

✓ Event organizers | ✓ System service providers | ✓ Municipality

**Involved stakeholders & their roles:**

- **The system service provider of the reverse vending machines** provides information about the vending machine, process steps and price calculations. They advise on the return and deposit options and which reusable systems can be used. They handle the transportation of the vending machines and set them up at the event area.
- **The system service providers of the returnable systems** must be involved in the process in good time in order to ensure functionality with the vending machine. The return and sorting of the containers collected via the vending machine must be processed.
- **The event organizers** are responsible for bringing the stakeholders together and coordinating the processes. The event organizer pass on decisions to other stakeholders involved in the event (such as stand operators) and provide information about processes.

### Pre-conditions:

- **Infrastructure:** A general infrastructure is needed for vending machines; so far there have only been prototypes
- **Infrastructure:** There is a power connection and stable internet connection at the event area.
- **Financial:** An initial investment is required to purchase/ rent and program the vending machines accordingly. Funding programs are needed.
- **Strategic:** Which systems can be accepted by the vending machines and which cannot?

### Indicator:

Return Rate.

### Further information:

Faircup, concept vending machines for cities and events: <https://www.fair-cup.de/wp-content/uploads/2024/04/2024-Automaten.pdf>

Circle Cube, service provider for vending machines: <https://www.circlecube.eu/>

### Measure II: Central return station at the event area

Setting up a central return station at the event area is an option to enable simple and fast return and to relieve stand operators. The station can focus on taking back the containers and issuing the deposit. Additional incentives, such as charitable donations per return, can make returns even more attractive.

### Target group of the measure:

✓ End users | ✓ Stand operators | ✓ Event organizers |

### The measure can be implemented by:

✓ Event organizers

### Involved stakeholders & their roles:

- The organizer is responsible for planning the construction of a central return station, the provision of material and personnel for the construction and operation of the station. Furthermore, stand operators must be briefed so that they can pass on the information to end users. If a system service provider is engaged for a reuse system, they must be briefed in order to understand the logistics of the return station.

### Pre-conditions:

- **Space & placement:** Sufficient space capacity is required at the event area to set up the station. It should be easily accessible for visitors and logistics.
- **Infrastructure:** Shelves and boxes are required for storing and sorting the returned containers.
- **Communication:** The return station must be visible, and the return process should ideally be explained.

**Indicator:** Return Rate.

#### 4.2.2. System element: infrastructure

**Problem:** Lack of support from local authorities

The business segment for reusable services is relatively new. Although the first reusable service providers have established themselves, a broader range of services is required for more intensive competition and the development of innovative business ideas. There is little experience in converting or launching sustainable business models and high start-up investments are required. In addition, companies that offer reusable services cannot compete with the price level of disposable alternatives.

There is no long-term planning perspective on how the legislation for the use of reusable packaging will be structured in the future.

Further, there is a lack of funding opportunities for the start-up capital of sustainable companies that support establishing innovative and affordable business models.

**Measure 1:** Framework conditions from public authorities

Legal regulations, such as an obligation to reuse or a stricter ban on disposable items, create a clear planning basis for all stakeholders. Legal experts from the authorities must draw up a specific legal text. This involves a clear definition of the obligation to reuse, e.g. which events are affected (e.g. public festivals, markets, concerts), which products fall under the obligation (e.g. drinks, food), and which exceptions there could be (e.g. for small events).

Furthermore, support or accompanying measures should be examined: The local administration could develop financial or logistical support measures to make the business case with reusable systems easier for service providers as well as event organizers.

**Target group of the measure:**

✓ System service providers ✓ Event organizers ✓ stand operators

**The measure can be implemented by:**

✓ Municipality

#### **Involved stakeholders & their roles:**

- The municipality is responsible for analyzing needs and setting objectives, coordinating with interest groups, drafting a legislative proposal and handling the legislative process. It is also responsible for ensuring that the law is actually complied with upon implementation and should monitor this process. Accompanying public relations work on what the various stakeholders have to consider is key.

#### **Pre-conditions:**

- Legal issues: Higher-level legislation (national, EU) must be observed and complied with.
- Political issues: Overarching political approval is required and, if necessary, public participation is included in the design process.
- Public: Social acceptance is required as to whether the legislation is economically feasible.

#### **Indicator:**

City wide reusable quota

#### **Further Information:**

- Packaging Act Estonia:  
<https://www.riigiteataja.ee/en/eli/ee/518042023005/consolide/current>
- Abfallkonzepte und Mehrweggebot für Veranstaltungen, Wien  
<https://www.wien.gv.at/umweltschutz/abfall/gross-veranstaltungen.html>

#### **Measure II: Financial support from the local authority**

Financial support is needed to facilitate the conversion and establishment of companies that focus on innovative business models and reusable solutions.

This can be achieved through sector-specific funding programs and can be financed from public or third-party funds.

#### **Target group of the measure:**

✓ System service providers

#### **The measure can be implemented by:**

✓ Municipality

#### **Involved stakeholders & their roles:**



- The municipality is responsible for defining the target groups, objectives and budgeting. In addition, the municipality must coordinate across departments, establish an application process and obtain political approval. Once the funding program has been approved, it is responsible for carrying out broad public relations work and managing the program.

#### **Pre-conditions:**

- **Financial:** Funding opportunities must be found, possibly from budget funds or third-party funds.
- **Legal issues:** The municipality must ensure that the funding program complies with national and EU-wide regulations. This includes state aid law and competition law.
- **Personnel:** Sufficient personnel capacity is required to handle the funding program.

#### **Indicator:**

Number of SMEs that focus on reusable solutions

#### **Further information:**

Start-up BW Pre-Seed:

<https://www.startupbw.de/finanzierung/beteiligungsfinanzierung/start-up-bw-pre-seed>

Funding database:

<https://www.foerderdatenbank.de/FDB/Content/DE/Foerderprogramm/Bund/BMBF/kmu-innovativ-ressourcen-kreislaufwirtschaft.html>

#### **4.2.3. System element: communication**

**Problem:** Lack of knowledge about reusable systems on event site

End users have different levels of knowledge in dealing with reusable packaging at events. The handling of deposits and returns can be event-specific and end users lack the knowledge to deal with them. This means that stand operators sometimes have to explain the process of the deposit and returning in detail. In some cases, also the staff have gaps in their knowledge and no corresponding personnel resources to carry out this additional work.

**Measure 1:** Pre-event training und communication support

All event staff need to be thoroughly briefed on their role in communicating information about the reusable system to participants. This should take place before the event in the form of a workshop and clear communication guidelines. In addition, on-site support should be provided by volunteers.

**Target group of the measure**

<https://interreg-baltic.eu/project/change-know/>

✓ Event organizers | ✓ Stand operators

**The measure can be implemented by:**

✓ Event organizers | ✓ Municipality

**Involved stakeholders & their roles:**

- The event organizer is mainly responsible for coordinating the training and communication measures. A person should be appointed to bring the stakeholders together in a workshop format who has the technical expertise to brief on the content. The most important work steps should then be set out in guidelines.
- The municipality, if involved, can participate in the preparation of the guidelines and the implementation of the workshops or take the lead in implementing them.

**Pre-conditions:**

- **Personnel:** Sufficient personnel capacity is required to implement the pre-event training.
- **Financing:** Additional financial resources are required to prepare content, create guidelines and, if necessary, hire staff.
- **Volunteers:** A volunteer program must be designed, including subsequent recruitment and training.

**Further information:**

- Volunteer Program Youth Festival <https://interreg-baltic.eu/project-pilots/baltiplast/reusable-dishes-and-waste-management-at-youth-song-and-dance-festival-in-tallinn-estonia/>

**Measure II: Communication campaign (pre-event)**

The topic of reusable packaging and the specific reusable packaging system of the event should be communicated on the internet before the event in the form of videos and information graphics. This allows the end user to gain an understanding of the system before the event.

**The campaign should contain the following key messages:**

- Clearly explain the steps attendees must take at the event to use, return, and get refunds for reusable packaging. Simplify the information for ease of understanding.
- Highlight the “why” behind the initiative — explain the environmental impact, benefits of reusables over disposables, and the event’s role in promoting sustainability.



### Target group of the measure:

✓ End users

### The measure can be implemented by:

✓ Event organizers | ✓ Stand operators | ✓ Municipality | ✓ System service providers

### Pre-conditions:

- **Communication channels:** The organizer needs to apply the appropriate channels to reach its visitors with the information before the event.
- **Personnel:** The creation of communication materials such as videos, texts, infographics, websites, etc. requires personnel.
- **Financing:** The production and distribution require financial resources.

### Further information:

Information campaign construction fence banner:

<https://www.greeneventshamburg.de/blogbeitrag/machen-ist-wie-wollen-nur-krasser-mehrweg-macht-den-unterschied/>

Video Campaign reusable revolution:

<https://www.youtube.com/watch?v=BQRc0gClvpk&t=16s>