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D2.2 Best practice solutions for institutional catering operators – report from the pilots

Compiled by:
Stockholm Environment Institute Tallinn Centre

Contributors:
Ökomarkt Verbraucher- und Agrarberatung e.V., Germany
Smart & Lean Hub Oy, Finland
Regional Council of Päijät-Häme, Finland
Tallinn Strategic Management Office, Estonia
Baltic Restaurants Estonia, Estonia
Copenhagen Municipality, Denmark

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1 Introduction

The widespread overpackaging and use of single-use packaging in public institutional catering represents a significant environmental challenge. Packaging waste, particularly plastic, contributes to pollution, resource depletion, and increased carbon emissions. In institutional catering, the reliance on single-use and excessive packaging is often seen as convenient but generates vast amounts of waste, placing a heavy burden on waste management systems and the environment.

This report presents a collection of case studies that have tested circularity measures to reduce and avoid single-use packaging in public food provision and through circular procurement. All examples are from institutional catering, such as schools, and hospitals.

The case studies are based on the piloting in the two core areas in the partner cities as follows:

1. Circular procurement criteria development in Lahti, Finland
2. Introduction of Reusable Deposit Systems in School Canteens in Hamburg, Germany
3. Replacing single-use trays with GN trays in hospitals in Tallinn, Estonia
4. Shifting from single-use bulk packages to small portions of non-packed food and reducing packaging in school canteens in Tallinn, Estonia
5. To be added Copenhagen, Denmark

2 Framing of the case studies

In institutional catering, the packaging can be reduced through two core areas:

Circular procurement: At the municipal or institutional level, circular procurement practices enable decision-makers to select catering services and suppliers that minimise packaging waste. Emphasis is placed on selecting packaging that is reusable, compostable, or recyclable, as well as fostering contracts that include packaging prevention and reduction criteria.

Operational circular measures: At the operational level, implementing circular measures throughout the food provision value chain, from suppliers to food consumption can reduce packaging at different value chain stages.

2.1 Food and catering service procurement criteria

The food and catering service procurement system involves sourcing, acquiring, and delivering food products and services. Public and private institutions (such as schools, hospitals, or workplaces) typically rely on procurement to ensure that food provision aligns with their needs,

including nutrition, sustainability, and efficiency. These systems are critical for managing supply chains, controlling costs, and addressing environmental concerns, including the reduction of overpackaging and single-use packaging.

In the context of reducing overpackaging and single-use packaging, procurement plays a significant role. Public procurement policies can include requirements that suppliers must minimise packaging or use eco-friendly materials. Institutions can integrate circular economy principles into procurement to ensure that environmental criteria are part of the supplier selection process. Furthermore, procurement contracts can be designed to encourage bulk purchasing or the use of reusable containers, effectively addressing packaging waste.

Lahti municipality developed a set of circular criteria that can be used in institutional cate4ring procurements to reduce the packaging related to food transport and delivery.

2.2 Reducing packaging in the institutional catering value chain

Over-packaging and the use of single-use packaging can occur at various value chain levels within institutional catering. Table 1 provides problems related to packaging and the pilot cases addressing these issues.

Table 1 Overview of the problems related to different stages of the institutional catering value chain and relevant case studies

Stage in value chain	**Problem**	**Pilot case studies**
Food processing and transport	Overpackaging (many layers of packaging) Multiple materials in packaging Single use packaging for transport (raw food)	Case study to illustrate wholesaler's practices, Lahti, Finland
Meal production and delivery	Single-use packaging for transport (cooked food) single-use packaging of portions Single-use delivery transport packaging	Reusable takeaway packaging in public food services, Copenhagen, Denmark
Food serving	Single-use trays, Single-use packaging of portions	Replacing single-use trays with GN trays in hospitals, Tallinn, Estonia
Consumption of food and beverages	Single-use packaging Packaging in plastic Multiple-layer packaging	Shifting from single-use dishes to multiple-use dishes in school canteens, Tallinn, Estonia
Food takeaway from canteens and kiosks	Single-use packaging Packaging in plastic	Introduction of Reusable Deposit Systems in School Canteens, Hamburg, Germany
		Shifting from plastic to alternative biodegradable packaging material in school canteens, Tallinn, Estonia

3 Case studies for preventing and reducing food packaging

3.1 Circular procurement in Lahti

Location: Lahti, Finland

Time: Jan – May 2025

Organisation type: Municipalities, regional governments, schools

Target group: Institutional catering procurers

The food service industry value chain describes the sequence of activities and processes involved in delivering food services to customers. Lahti piloted the food service industry value chain step no. 1: Procurement & Sourcing.

Action

The Lahti pilot aimed to test and evaluate sustainable food packaging criteria within institutional catering procurement. The goal was to reduce packaging waste and align municipal procurement practices with the EU Packaging and Packaging Waste Regulation (PPWR) and Finland's national Green Public Procurement (GPP) targets.

Lahti pilot carried out a two-phase piloting procedure:

Multi-stakeholder pre-assessment (January – March 2025): Engaged 28 organisations, including ministries, public procurement professionals, food producers, wholesalers, and public kitchens. Reviewed all 21 draft criteria for clarity and feasibility.

Apilakatu test run (April 2025 – May 2025): Practical applicability assessment in a production kitchen environment at Lahti's largest production kitchen, focused on 9 environmental packaging criteria. It was a practical evaluation of real packaging types for multiple food products.

Key findings

- Stakeholders welcomed the criteria, especially for awareness-building and alignment with EU goals.
- Practical implementation will be challenging due to the existing contracts, food safety concerns, and machinery compatibility.
- Need for cost neutrality and supplier readiness to avoid market exclusion.

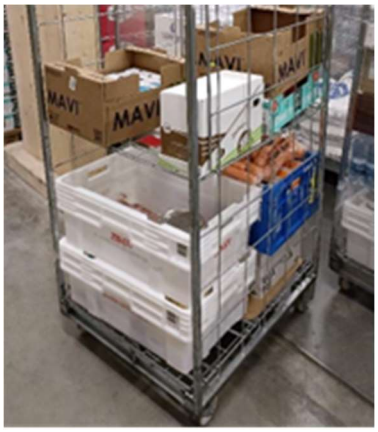
- Criteria 1.1–1.9 (environmental focus) were seen as most promising for national scale-up.

Conclusion

The Lahti pilot demonstrated that circular packaging criteria can be developed and assessed in a credible way within public food procurement, and that stakeholders see clear value in this direction. The pilot also showed that successful uptake depends on practical conditions such as cost neutrality, supplier readiness, regulatory interpretation, and compatibility with everyday kitchen operations. Its main contribution was therefore not a full implementation as such, but the strengthening of institutional capacity: the pilot connected packaging regulation, procurement criteria, stakeholder review, and operational validation into a practical development model for institutional catering. The insights gained provide a useful basis for future scaling and for advancing circular procurement practices in Finland and beyond

3.2 Lahti case study to illustrate wholesaler's practices

Location: Lahti, Finland



Time: Jan – May 2025

Organisation type: Food service industry

Target group: Institutional catering procurers

The food service industry value chain describes the sequence of activities and processes involved in delivering food services to customers. Lahti piloted the food service industry value chain step no. 2: Inbound Logistics.

This case study, carried out as part of the Change(K)now! GoA 2.2 initiative examined current packaging practices in food wholesale relevant to institutional catering. Its purpose was to illustrate how inbound logistics currently operates, what barriers limit more circular packaging solutions, and where future development opportunities may exist.

Main findings

- Current practices: food wholesalers primarily used pallets and roll containers wrapped in plastic stretch film, along with reusable cardboard and plastic boxes.
- Challenges: the transition to sustainable packaging was limited by cost, equipment compatibility, hygiene requirements, and regulatory constraints, especially restrictions on the use of recycled materials in food-related contexts.
- Opportunities: innovations such as thinner and stronger plastic films, fibre-based bands, pallet lids, and roll containers with doors offered promising alternatives. Reusable packaging loops, supported by digital tracking (e.g., RFID), also showed potential for wide-scale implementation.
- Regulatory and market trends: shifting regulations, growing customer demand for sustainability, and advancements in recycled materials were gradually opening pathways for change. However, implementation remained slow due to operational and economic concerns.

Strategic insights

- Sustainable transformation requires system-level collaboration between producers, wholesalers, regulators, and municipal actors.
- Future-proof packaging solutions must balance functionality, cost-efficiency, and regulatory compliance.
- Internal or supply-chain-wide reuse systems could play a central role in achieving circularity in wholesale packaging.

Conclusion

The Lahti pilot demonstrates that while the road to sustainable packaging in food wholesale is complex, it is achievable through targeted innovation, policy support, and shared commitment among stakeholders. The insights gained here contribute directly to defining best practices for institutional catering operations and can guide broader efforts toward circularity in public food systems.

The case complements the procurement-focused pilot work by showing that packaging outcomes are influenced not only by procurement criteria, but also by upstream logistics systems and wholesale operating practices.

3.3 Introduction of reusable deposit systems in school canteens in Hamburg

Location: Hamburg, Germany

Time:

- Pilot 1: 7 January – 31 March 2025
- Pilot 2: 10 June – 16 July 2025

Organisation type: Public educational institutions (school canteens)

Target group: School students, teachers, canteen staff, and catering companies

Objectives

The pilot aimed to reduce disposable packaging in school canteens and encourage sustainable consumption habits. Specifically, it sought to test the functionality of a reusable deposit system, promote understanding of environmental impacts, and engage students and staff in behavioural change. The project also aimed to generate evidence on how such systems can be integrated into everyday catering operations and scaled within Hamburg's educational institutions.

Overview

Two consecutive pilots were implemented in different schools.

In **Pilot 1 (January–March 2025)**, Ökomarkt Hamburg coordinated meetings with teachers, caterers, and student councils to design and launch a deposit system for reusable cups and bowls. An information stand was set up to explain the project, distribute flyers, and gather student feedback through surveys.

In **Pilot 2 (June–July 2025)**, the approach was repeated in another school, supported by preparatory meetings and one main awareness event. Although student participation was lower due to timing near the end of the school year, the reusable system was again introduced successfully. Both pilots were accompanied by evaluation activities developed jointly with the University of Kiel, including multilingual student surveys to assess attitudes and understanding.

Stakeholders Involved

The pilot brought together diverse partners. Ökomarkt Hamburg coordinated the implementation and communication; teachers and school councils supported engagement within

the schools; caterers managed the day-to-day deposit operations; and students participated as users and respondents. The University of Kiel provided research input through survey design and evaluation. This collaboration ensured that the pilot integrated educational, operational, and analytical perspectives.

Resources needed

Implementation required reusable RECUP and REBOWL containers, printed communication materials, and staff to coordinate logistics and outreach. Financial support covered start-up costs and helped reduce the perceived risk for caterers and schools during the transition period.

Success factors

The pilots benefited from committed teachers and canteen managers who acted as internal advocates for change. Regular communication and visible on-site presence through information stands fostered transparency and understanding among students. Linking the initiative to environmental education proved especially effective: when students understood the broader purpose, participation and acceptance improved markedly. Flexibility in adapting to each school's routine also enabled smoother operation, while modest financial assistance helped overcome initial scepticism among caterers.

Challenges

Several challenges emerged during implementation. Communication gaps between coordinators, canteen staff, and school management occasionally slowed decisions, and the rate of container returns remained low (about 20 in one pilot) creating cost concerns for caterers. Some students found the system inconvenient, particularly having to carry containers or pay deposits. Limited return times reduced accessibility, and in the second pilot, end-of-term timing led to lower engagement and visibility. Despite these difficulties, all parties maintained constructive dialogue and made necessary adjustments to keep the pilots running effectively.

Lessons learned

The Hamburg experience showed that introducing reusables in school canteens is both feasible and educationally valuable when supported by consistent communication and clear responsibilities. Sustained engagement with canteen staff and teachers is essential to maintaining momentum, while a complete switch to reusables—rather than offering them alongside disposables—encourages quicker adaptation. Continuous feedback from students and staff allows systems to improve over time, and visible educational activities reinforce behavioural

change. Ultimately, the pilots demonstrated that practical sustainability measures can strengthen both environmental awareness and collaboration within school communities.

Conclusion

The Hamburg pilots successfully demonstrated that reusable deposit systems can be integrated into school catering with positive educational and environmental outcomes. Although challenges related to logistics and user habits remain, the initiative proved that students quickly adapt when the system is well explained and consistently applied. Both schools decided to continue using the reusables beyond the pilot period, confirming the approach as a viable model for promoting circular catering in Hamburg and beyond.

3.4 Replacing single-use trays with GN trays in hospitals in Tallinn

Location: Tallinn, Estonia

Time: Ongoing since February 2025

Organisation type: Hospitals

Target group: Hospital patients, hospital kitchen staff, production kitchen staff (Baltic Restaurants Estonia)

The Tallinn pilot for hospitals was carried out under the Change(K)now! project to assess how switching to reusable packaging would be received in hospitals catered by Baltic Restaurants Estonia (BRE). The pilot was done in eight buildings of two hospitals in Tallinn.

Objectives

The goal of the pilot carried out in two Tallinn hospitals was to significantly reduce the large amount of disposable plastic packaging generated daily through food service. Previously, each sandwich prepared on-site had been individually wrapped in plastic, contributing to roughly 600 disposable boxes a day. By shifting to reusable GN trays, the pilot aimed to eliminate the need for individual packaging and introduce a more circular catering practice within hospital environments.

Overview

The pilot introduced a new serving practice in which sandwiches, salads, wraps, desserts and smoothies were no longer packaged separately but served using reusable GN trays. This required a full reorganisation of the serving process within the hospital kitchens. The production kitchen staff at BRE prepared detailed instructions for the hospitals on how to change their procedures, ensuring that the new serving method complied with hygiene regulations.

Service kitchen staff were trained to serve sandwiches one-by-one directly on GN dishes rather than placing them in disposable containers. After use, the trays were collected and sent back to BRE for washing, replacing the previous system in which individually packaged items simply generated waste. While the new procedure eliminated the need for packaging work, it introduced additional dishwashing duties. Nevertheless, the reduction in packaging also

decreased the volume of transported goods, allowing the production kitchen to use smaller delivery vehicles due to lower space requirements.

Stakeholders involved

The pilot brought together several groups whose collaboration was essential. Service kitchen staff in the hospitals were responsible for implementing the new serving routine and adapting their daily workflow accordingly. The production kitchen staff at BRE played a central role in designing and communicating the revised procedures and in managing the cleaning and reuse of trays. Hospital management provided overarching support, ensuring that staff concerns could be addressed and that the shift away from single-use packaging would be institutionally backed.

Resources needed

Introducing the reusable system required staff to dedicate additional time at the beginning of the pilot in order to become familiar with the new processes. As the system relied on dishwashing instead of disposal, service kitchens also needed more time every day to clean the trays after use. The hospitals invested in GN trays, which must be replaced periodically due to wear. Even with the added labour, the overall cost of the new system remains lower than the previous reliance on single-use packaging, given the continual expense associated with purchasing disposable materials.

Success factors

The single most important factor enabling the pilot's progress was the strong support from hospital management. Their involvement ensured that the shift away from disposable packaging was prioritised institutionally, making it possible to overcome operational resistance and adapt internal routines. Without leadership backing, the transition would have been considerably more difficult to implement in practice.

Challenges

Despite the environmental and financial advantages, the transition required staff to adopt a more labour-intensive workflow, leading to resistance from hospital service kitchen staff. The increased workload associated with washing trays, along with adjustments to established habits, created early friction. These challenges highlighted the complexity of changing routine practices in institutional settings, especially when the new system demands additional time and effort from staff.

Lessons learned

The pilot did not identify specific procedural or strategic lessons beyond the practical need for adjustment time and management support. The main insights relate to the operational realities of change management rather than the technicalities of the new system.

Conclusion

Despite encountering resistance from service kitchen staff due to increased workload, the pilot proved effective in reducing both waste and overall costs. The shift to reusable GN trays significantly cut down the volume of disposable plastic, while production kitchen staff reported notable efficiency gains, such as requiring less transport space and being able to use smaller trucks. Based on these outcomes, the hospitals decided to continue with the measure. The pilot demonstrates that even in environments with strict hygiene requirements and established routines, reusable systems can be successfully adopted when supported by clear procedures, management commitment, and a willingness to prioritise long-term environmental and financial benefits.

3.5 Shifting from plastic to alternative biodegradable packaging material in Tallinn school canteens

Location: Tallinn, Estonia

Time: 1–30 November 2024

Organisation type: Public educational institutions (school canteens)

Target group: Pupils, school staff, canteen staff

The Tallinn pilot was carried out under the *Change(K)now!* project to test how replacing plastic packaging with biodegradable alternatives would function in everyday school canteen operations. The caterer, Baltic Restaurants Estonia, implemented the measure in selected schools where sandwiches were normally prepared and displayed in plastic triangle packaging. During the pilot, these were replaced with paper-based biodegradable wrapping. The pilot was carried out in two schools in Tallinn.

Objectives

The objective of this pilot activity was to assess whether sandwiches, which are one of the most frequently purchased grab-and-go items, could be served in biodegradable paper instead of plastic packaging without compromising food quality or student acceptance. The pilot also aimed to evaluate how such a shift would affect daily workflows for canteen workers and determine which product types were most suitable for biodegradable wrapping.

Overview

The two pilot schools in Tallinn carried out several pilots to replace disposable plastic packaging for sandwiches, salads, smoothies, desserts, cookies, and rice waffles with reusable or no-packaging options. In this pilot, all the sandwiches previously packaged in plastic triangle boxes were wrapped in paper instead.

To prepare for implementation, Baltic Restaurants Estonia's product development department created a guidance video demonstrating the correct wrapping technique for sandwiches, ensuring that canteen staff could adapt consistently across schools. In addition to the video, direct instructions were given to workers on how to pack and present the sandwiches. School management was informed electronically ahead of time, and campaign materials were placed

throughout the cafeterias to explain the environmental purpose of the pilot to pupils and school employees.

Unlike plastic triangle boxes, which allowed sandwiches to be prepared in bulk early in the morning and displayed throughout the day, the switch to paper necessitated a new workflow. Only one sample sandwich was displayed, wrapped halfway in paper so that the content remained visible, while the remaining sandwiches had to be prepared repeatedly during the day. This change represented a significant shift in daily routine for canteen workers, who were accustomed to preparing sandwiches fully in advance. The higher workload associated with more frequent preparation required staff to reorganize their timing, especially during peak hours.

Stakeholders involved

The shift required canteen workers to adapt their everyday tasks, and many experienced challenges because the sandwiches stored in paper dried out more quickly compared to those stored in sealed plastic packaging. While pupils did not voice direct complaints and school management did not flag major issues, the canteen workers – responsible for maintaining product quality – reported that the sandwiches' appearance and freshness suffered visibly.

The pilot also included an educational dimension: pupils were informed about the environmental rationale through campaign materials, and some participated in training provided by Tallinn Municipality on reducing and sorting packaging waste. Although the educational message was well understood, it did not fully mitigate the operational challenges faced by staff.

Resources needed

The resources required for this measure included time for training staff on new wrapping procedures, creating and disseminating instructional material, and adjusting morning and midday routines to prepare sandwiches in smaller, more frequent batches. While paper wrapping was slightly cheaper than the former plastic packaging, the major cost was the added time pressure on staff adapting to a more labour-intensive system.

Success factors

relied heavily on staff adaptability.

Challenges

In practice, adaptability varied by school, and the new system proved more demanding than expected. The primary challenge was the rapid drying of sandwiches, which made the product

less appealing and unsuitable for extended display. This significantly restricted the types of sandwiches that could be prepared in advance and placed in the foreground for pupils to choose from. The need for more frequent preparation also introduced unpredictability during busy periods. Because plastic triangle boxes had previously enabled a more efficient preparation process, the canteen workers found the biodegradable alternative more time-consuming and difficult to integrate into their workflow.

Lessons learned

The pilot gave Baltic Restaurants Estonia valuable insights into which sandwich components are sensitive to moisture loss and, therefore, unsuitable for partial paper wrapping. It also underscored that behaviour change (both for staff and pupils) requires more than a one-month pilot to become fully embedded.

Conclusion

As a result of the pilot, the biodegradable wrapping approach was not continued for triangle sandwiches, where the drying issue was most pronounced. Food items with high moisture content or delicate textures (such as certain sandwich fillings) were more vulnerable to drying when not enclosed in plastic, limiting the range of items suitable for paper wrapping. However, the piloting schools continued to wrap other sandwich types in paper-based material, where the impact on product quality was manageable.

The pilot demonstrated that biodegradable packaging can work in certain contexts but must align with product characteristics, staff capacity and daily workflow. It highlighted that operational feasibility, not only environmental intent, ultimately determines whether such measures can be sustained.

3.6 Shifting from single-use dishes to multiple-use dishes in school canteens in Tallinn

Location: Tallinn, Estonia

Time: 1–30 November 2024

Organisation type: Public educational institutions (school canteens)

Target group: Pupils, school staff, canteen staff

This pilot activity examined the feasibility of switching from single-use plastic containers to reusable dishes, specifically glass bowls, for food items such as salads, poke bowls, desserts, pancakes and smoothies. The measure formed part of Baltic Restaurants Estonia's broader effort to reduce single-use plastic in school catering through the *Change(K)now!* project. The pilot included two schools in Tallinn.

Objectives

The aim of the pilot was to assess how reusable serving solutions could be introduced in school environments, how this would affect sales and food quality, and to what extent pupils and staff would accept a system that removes the convenience of takeaway plastic packaging. The pilot also evaluated whether canteen staff could accommodate new workflows related to washing, reusing and handling heavier materials.

Overview

Two Tallinn schools (Laagna kool and Saksa Gümnaasium) carried out several pilots to replace disposable plastic packaging for sandwiches, salads, smoothies, desserts, cookies, and rice waffles with reusable or no-packaging options. In this pilot, the salads, poke bowls, desserts, pancakes and smoothies were served in reusable dishes (glass bowls) instead of single-use packaging.

Ahead of implementation, Baltic Restaurants Estonia purchased reusable glass bowls and provided canteen staff with guidance on how to prepare and serve food using these bowls in compliance with food safety rules. School management was informed about the pilot, and awareness materials were displayed throughout the cafeterias to help pupils understand the initiative's purpose. As part of the educational component, pupils were offered training on

avoiding, reducing and sorting packaging waste, complementing the practical changes taking place in the cafeteria environment.

Once the pilot began, staff needed to adapt their workflow considerably. Unlike single-use containers, which could simply be restocked, reusable dishes required collection, washing and drying throughout the day. This increased the operational workload and, in schools with limited space behind the counter, created logistical constraints. In some environments, however, the transition was smooth, particularly where the buffet layout and available space supported the new routine.

Stakeholders involved

Various stakeholders were involved in this pilot: employees of the catering service provider, students, school management.

Resources needed

To implement this measure, schools required an initial investment in reusable glass bowls, as well as staff time to learn new serving routines and ensure proper cleaning cycles. The additional workload associated with washing and collecting the dishes represented the main resource burden. Communication materials and environmental awareness training also required time and coordination.

Success factors

The key determinant of success was the extent to which the school's physical environment and daily routines could support on-site consumption. Where pupils had time and space to eat inside the cafeteria, reusable dishes worked well and did not negatively affect sales. In contrast, in schools where pupils relied heavily on takeaway options or where seating was limited, the measure disrupted established behaviour.

Another key enabler was the clear visual identity of the pilot, which helped students recognise that the changes were part of a broader environmental initiative rather than arbitrary adjustments. In schools where staff felt confident adapting their workflow, the transition to reusable bowls was smoother and better received by students.

Challenges

The biggest challenges arose from operational constraints (particularly the increased workload of handling reusable bowls) and balancing environmental goals with behavioural factors related to pupils' preference and convenience for takeaway meals. Where cafeterias lacked sufficient

space for students to eat meals on-site, reusable bowls became less appealing, affecting sales of items like poke bowls.

The transition also required staff to adjust preparation techniques. For instance, tomatoes were no longer cut for certain salad dishes because cut vegetables tended to airdry more quickly in the reusable bowls. These adjustments, while manageable, represented additional learning steps for kitchen staff.

Lessons learned

The pilot demonstrated the importance of tailoring circular solutions to specific school contexts. Behavioural change varied greatly between schools and pilots cannot be expected to lead to permanent behavioural change within a one-month period. The pilot also revealed that certain foods require modified preparation techniques to maintain quality (by preventing airdying) when served in reusable dishes.

Conclusion

As a result of the pilot, poke bowls in reusable dishes were discontinued in one school due to a significant drop in sales, while in other schools the measure was maintained without affecting purchasing behaviour. Salads, desserts, pancakes and fruit bowls – items with a smaller share in turnover and less reliance on takeaway convenience – continued to be served in glass bowls in all participating schools. Therefore, the pilot revealed the importance of tailoring solutions to each school's specific physical and behavioural context: cafeteria layout, student routines, and staff workload all influenced success.

The experience highlighted that reusable dishes can be a viable and environmentally meaningful solution when school infrastructure, student habits and staff routines all support their use. Where these conditions are met, the transition can be smooth; where they are not, it can pose operational difficulties. The pilot provided essential insights for future planning and demonstrated that reusable systems, though requiring more effort, can significantly reduce packaging waste when implemented in suitable contexts.

3.7 Reusable takeaway packaging in public food services in Copenhagen

Location: Copenhagen Municipality, Denmark

Time: January 2026 – end of 2026 (ongoing pilot phase)

Organisation Type: Public institutional catering (EAT school food programme)

Target Group: School students, kitchen staff, municipal administrators, and technology providers

The Copenhagen pilot focused on introducing reusable takeaway meal packaging within the municipal EAT programme. By integrating Radio Frequency Identification (RFID) technology into reusable containers, the pilot combined circular packaging solutions with real-time data collection to better understand system performance, user behaviour, and operational requirements.

Objectives

The pilot aimed to reduce single-use packaging and develop a scalable, data-driven model for circular catering. It focused on testing operational feasibility, improving decision-making through data, and identifying key barriers and success factors for wider implementation.

Overview

The pilot started in early 2026 with the introduction of reusable takeaway containers equipped with RFID tags. These enabled tracking of usage and return rates across selected EAT kitchens.

Kitchen staff were trained to manage the system, and students were introduced to how to use and return the containers. Throughout the pilot, data was collected to monitor performance and support ongoing adjustments to logistics and workflows. Continuous collaboration between the municipality, kitchens, and technology partners ensured that the system evolved based on practical experience.

Stakeholders Involved

The pilot relied on close cooperation between:

- The EAT programme (daily operations and handling)
- Municipal administration (coordination and evaluation)
- Technology providers (RFID and packaging systems)

- Knowledge partners (data analysis and evaluation)
- Students (system users)

Resources needed

Implementation required reusable containers with RFID tags, tracking infrastructure, staff training, communication efforts, and logistics for collection, cleaning, and redistribution. Financial and organisational resources were essential to support both operations and data collection.

Success factors

The pilot benefited from strong collaboration between stakeholders and effective integration into existing kitchen workflows. RFID tracking provided valuable data, improving transparency and enabling continuous system optimisation. Clear communication and a simple return process helped make the system accessible and understandable for users.

Challenges

Key challenges included uncertainty around return rates, increased workload for staff during the initial phase, and operational complexity in handling and logistics. Practical issues, such as packaging management and system adjustments, required ongoing attention and flexibility.

Lessons learned

The pilot showed that simple, user-friendly systems and clear communication are essential to influence behaviour. Early staff involvement and training supported smoother implementation, while data collection proved critical for understanding and improving performance. Flexibility to adapt the system during implementation was also key.

Conclusion

The Copenhagen pilot demonstrated that reusable takeaway packaging, supported by digital tracking, is a feasible approach for circular institutional catering. While challenges remain, the system showed strong potential and provided valuable insights for scaling and further development.

4 Key takeaways and recommendations

The pilot cases demonstrate that reducing single-use packaging in institutional catering is achievable, but requires coordinated action across procurement, operations, and user behaviour. Based on the experiences from all partner cities, we have proposed several key recommendations.

- **Prioritise system-wide collaboration across the value chain**. Successful implementation depends on coordination between municipalities, suppliers, caterers, and service providers. The pilots highlighted that packaging solutions cannot be addressed in isolation; rather, they require alignment across production, transport, serving, and consumption stages. Building partnerships and maintaining ongoing dialogue between stakeholders is essential for overcoming operational and regulatory barriers.
- **Design solutions that fit operational realities**. Measures such as reusable containers or biodegradable packaging must align with daily workflows, available infrastructure, and staff capacity. Pilots in Tallinn and Copenhagen showed that operational complexity, additional workload, and logistical constraints can hinder adoption if not carefully managed. Solutions should therefore be tested and adapted to specific contexts, including kitchen layouts, transport systems, and hygiene requirements.
- **Ensure simplicity and usability for end users**. User behaviour is a decisive factor in the success of circular systems. Reusable schemes must be easy to understand and convenient to use, with clear return processes and minimal effort required from users. Communication and behavioural nudging are necessary to encourage participation and build long-term habits, especially in school environments.
- **Invest in communication, training, and engagement**. Across all pilots, continuous communication proved critical for acceptance and success. Staff training, student engagement, and visible awareness-raising activities help build understanding and reduce resistance to change. Educational components, particularly in schools, can strengthen the impact by linking practical measures to broader sustainability goals.

5 Conclusions

The pilot cases presented in this report demonstrate that circular solutions to reduce single-use packaging in institutional catering are both feasible and impactful when implemented in a structured, collaborative manner. Across different contexts—from procurement in Lahti to operational changes in Hamburg, Tallinn, and Copenhagen—the pilots showed that meaningful reductions in packaging waste can be achieved through a combination of policy, practice, and behavioural change.

At the same time, the pilots highlighted that there is no one-size-fits-all solution. The success of circular measures depends on their alignment with local conditions, including infrastructure, organisational capacity, and user behaviour. Operational feasibility, staff workload, and economic considerations remain key factors influencing long-term adoption.

A central insight across all cases is that systemic change requires integration across the entire value chain. From procurement decisions to daily kitchen practices and user interactions, each stage plays a role in reducing packaging waste. Strong stakeholder collaboration, clear communication, and continuous learning are essential to bridge these stages and ensure effective implementation.

Furthermore, the pilots underline the importance of combining practical solutions with educational and behavioural approaches. Particularly in school settings, engaging users and raising awareness can accelerate acceptance and normalisation of sustainable practices.

Overall, the report confirms that institutional catering has significant potential to contribute to the transition towards a circular economy. By building on the lessons learned and scaling the tested approaches, municipalities and catering providers can move beyond pilot initiatives and embed circular practices into standard operations.