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ECOFOODCYCLE

Reducing Food Waste and its Environmental Footprint through Sustainable Food Systems

D2.2.1 – n.8 SMALL SCALE PILOT ACTIONS

WP 2 – Act. 2

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INTRODUCTION

Deliverable **D2.2.1 – n. 8 Small Scale Pilot Actions**, developed within Work Package 2 of the Interreg Italy–Croatia project ECOFOODCYCLE, reports on the implementation details of specific pilot actions carried out across the Cooperation Area. As outlined in the Project Application Form, these initiatives were designed to test, demonstrate, and evaluate innovative approaches to food waste reduction, such as awareness-raising campaigns, process optimization in production and service, and circular economy solutions.

The pilot actions documented in the following sections address key stages of the food value chain across diverse operational contexts:

- **Primary agricultural production and local food processing**, demonstrating circular economy models and by-product valorization (Pilot Action n. 1).
- **Educational institutions and hospitality environments**, implementing waste monitoring, behavioral nudges, anti-waste recipe development, and smart processing solutions in primary schools, vocational catering institutes, and family contexts (Pilot Actions n. 2, n. 3, n. 4, n. 5, and n. 6).
- **Retail and distribution**, testing AI-driven tools and dynamic systems to valorize near-expiry food products (Pilot Action n. 7).
- **Cultural and creative sectors**, introducing green protocols and sustainable catering logistics in dynamic settings such as film sets (Pilot Action n. 8).

The primary purpose of this document is to provide a detailed account of the operational implementation, workflows, and outcomes of each pilot action, alongside an evaluation of their results and environmental benefits.



Table 1: Summary of Small-Scale Pilot Actions

Partner & Action	Sector & Location	Objective & Type of Action	Key Results & Indicators
LP - LIRA (Pilot 1)	Primary Agriculture Gospić (HR)	Establishment of the Zero Waste Innovation Lab; equipment testing for by-product valorization (plum pits) and freeze-drying local fruits/vegetables.	• 1 Lab operational • 1,328 kg plums processed • 71 kg produce freeze-dried
PP2 - JURRA (Pilot 2)	Vocational Catering Karlovac (HR)	Waste monitoring and operational testing of a professional kitchen waste-processing device for volume reduction.	• Waste/meal reduced from 0.32 to 0.26 kg/meal • ~92.5% residual waste volume reduction • ~185 students & staff involved
PP3 - ZADRA NOVA (Pilot 3)	Vocational Catering Zadar (HR)	Zero-waste cooking education, 2-phase waste tracking, study visits to local farms, and anti-waste recipe development.	• Kitchen waste reduced from 20.35 kg to 6.48 kg • Plate leftovers reduced from 4.03 kg to 0.60 kg • Published e-cookbook with 10 zero-waste recipes



Partner & Action	Sector & Location	Objective & Type of Action	Key Results & Indicators
PP4 - EFRI (Pilot 4)	Primary School Rijeka (HR)	Canteen waste tracking, behavioral nudging ("take fruit only if you eat it"), smoothie fruit valorization, and waste grinder installation.	• Lunch waste share dropped from 27.3% to 19.7% • Per-pupil waste: -38.4% • ~6 kg/week waste managed via grinder
PP6 - ECAMRICERT (Pilot 5)	Primary School Padua (IT)	Pre/post waste tracking, EcoFood Waste Truck workshops, SDGs game, and farm visit.	• -22.8% food waste reduction (at tray)* • Printed & delivered "Ogni Boccone Conta" Recipe Book
PP6 - ECAMRICERT (Pilot 6)	Households Padua (IT)	Household training pathway: meal planning, 2-week family tracking diary, and Chef-led show cooking on meal-prep & storage.	• "Zero Waste" households increased from 28.6% to 60.0% • Weekly meal planning increased from 28.6% to 80.0% • Published "Families Together" GuideBook



Partner & Action	Sector & Location	Objective & Type of Action	Key Results & Indicators
PP7 - UNIFG (Pilot 7)	Supermarket Retail Foggia (IT)	Implementation of "AI Smart Boxes" in supermarkets: fixed-price boxes containing near-expiry items paired with dynamic AI recipe QR codes.	• Proof-of-concept for retail AI integration • Commercial valorization of near-expiry stock • Consumer engagement via Virtual Chef AI
PP8 - CNA ABRUZZO (Pilot 8)	Film Sets Abruzzo (IT)	Application of the Green Protocol on movie sets: WhatsApp meal booking, compostable single portions, controlled coffee breaks, and student training.	• Food waste reduced from 0.5 kg to 0.0 kg (Day 3) • Unserved meals reduced from 3 to 0 (100% consumption) • IFA cinema student training & backstage video



1. SMALL SCALE PILOT ACTION n.1 – LP, Public Institution Development Agency of Lika-Senj County (LIRA)

1.1. PILOT ACTION OVERVIEW

Name of the Pilot Action

Integrated Approach to Food Waste Prevention in Primary Agriculture

Partner & Location

- **Partner (PP):** Public Institution Development Agency of Lika-Senj County – LIRA - LP
- **Location of the pilot action:** Development Centre of Lika-Senj County, Pazariška 36, Gospić

Implementation Period

- **Start date:** 13.4.2026.
- **End date:** 15.5.2026.

1.2. DESCRIPTION OF THE PILOT ACTION

1.2.1. Background and Relevance

The Pilot Action was implemented within the ECOFOODCYCLE project with the aim of reducing food waste and its environmental footprint through practical application of circular economy principles in primary agricultural production and local food processing. The Lika-Senj County area is characterized by significant natural resources, traditional agricultural production and a growing potential for the development of local food products. However,



small family farms and local producers often face challenges related to seasonal surpluses, short shelf life of perishable products, insufficient processing capacities and limited possibilities for valorization of agricultural by-products. As a result, parts of agricultural production, including fruit surpluses, plum pits, residues from processing and other by-products, may remain underused or become waste. The Pilot Action addressed these challenges through the establishment and opening of the ECOFOODCYCLE Zero Waste Innovation Lab in Gospić, a practical demonstration and knowledge-transfer space focused on food waste prevention, sustainable processing technologies and valorization of by-products. The Lab was officially opened on 12 May 2026 at the Development Centre of Lika-Senj County and represents a new platform for cooperation between public institutions, producers, entrepreneurs, the academic sector and the local community. The Pilot introduced innovative and practical solutions such as freeze-drying of perishable fruit, cold pressing of oil from agricultural by-products, processing of plum pits, pellet production and practical demonstrations of circular economy models. In addition to the valorization of agricultural by-products such as plum pits, the Pilot also addressed the preservation of highly perishable local fruit and vegetables through freeze-drying, including products such as strawberries, raspberries, plums, cauliflower, broccoli, carrots, celery and parsley. This approach demonstrated how seasonal raw materials can be stabilized, their shelf life extended and their potential loss prevented through sustainable processing. In this way, the Pilot contributed to transforming food waste and agricultural by-products into new value-added products, while also strengthening local capacities for sustainable food systems.



1.2.2. Objectives of the Pilot Action

The main objective of the Pilot Action was to demonstrate how losses in primary agricultural production and local food processing can be prevented and reduced, with the focus not being placed on the generation of waste, but rather on the efficient use of agricultural by-products and secondary raw materials. Through their processing, and by applying sustainable technologies and circular economy principles, these materials can be transformed into new value-added products.

Specific objectives of the Pilot Action included:

- *Prevent and reduce losses in primary agricultural production and local food processing*
- *Increase utilization of raw materials and by-products*
- *Extend shelf life of perishable products*
- *Generate additional income for producers*
- *Promote circular economy practices*
- *Raise awareness among producers on food waste prevention*



1.3. CHARACTERISTICS OF THE PILOT ACTION

Table 2: Pilot Action Overview

Element	Description
Location of the pilot action	Development Centre of Lika-Senj County, Gospić
Specific objective	Reduction of food waste through valorization and optimization of primary production
Type of action	Small-scale pilot action focused on primary agricultural production, food waste prevention, by-product valorization, demonstration of processing equipment and awareness raising
Stakeholders involved	LIRA (LP), Development Centre of Lika-Senj County, technical staff, small family farms, SMEs, academic expert and general public
Implementation period	13.4.2026.—15.5.2026.

1.4. STAKEHOLDER INVOLVEMENT

1.4.1. Stakeholders Involved

The Pilot Action involved a diverse group of stakeholders from the public sector, primary production, entrepreneurship, the academic sector and the local community. This multi-stakeholder approach ensured that the Pilot was not implemented only as a technical demonstration, but as a practical platform for knowledge exchange, awareness raising and future cooperation.

The Public Institution Development Agency of Lika-Senj County – LIRA, as Lead Partner of the ECOFOODCYCLE project, was responsible for the overall coordination, organization, communication, monitoring and reporting of the Pilot Action. LIRA coordinated the preparation and implementation of activities, stakeholder engagement and dissemination of results.

The Development Centre of Lika-Senj County had an important operational role by providing the physical location, infrastructure and technical support for the implementation of the Zero Waste Innovation Lab. The Centre enabled practical demonstration of equipment and supported the implementation of activities related to processing, testing and presentation of sustainable food waste solutions.

Technical staff involved in the Pilot supported the use and demonstration of equipment such as the freeze-dryer, cold oil press, crusher, mill and pelletizer. Their role was important for the practical implementation of the Pilot, data collection, equipment operation and future continuation of laboratory activities.



Local producers, family farms and SMEs participated as key target groups and potential users of the Pilot results. Their involvement was important because the Pilot was designed to respond to real challenges faced by small producers, including seasonal surpluses, lack of processing capacities and limited possibilities for valorization of agricultural by-products.

The academic sector was involved through the participation of an expert from the Faculty of Food Technology and Biotechnology, who delivered a specialized lecture on the potential of oil production in the Lika region. This contributed to the scientific and capacity-building dimension of the Pilot Action.

Entrepreneurs and local producers also contributed by presenting practical examples of sustainable food production and product development. Through the example of the local brand Smočnica, participants were introduced to the development of value-added food products based on local ingredients, small-scale production and sustainable business practices.

The general public, including citizens, young people and interested local stakeholders, participated in awareness-raising and demonstration activities. Their participation contributed to the dissemination of knowledge on food waste prevention, circular economy and sustainable food systems.



Table 3: Stakeholder Engagement & Role Matrix

Stakeholder	Category	Role in the pilot action
Public Institution Development Agency of Lika-Senj County (LIRA)	Regional/public institution	Coordination, organization, monitoring and reporting of pilot activities
Development Centre of Lika-Senj County	Regional/public institution	Enabled implementation, coordinated logistics, equipment and logistical support
Technical staff of Development Centre of Lika-Senj County	Participation in pilot activities and application of solutions	Operation of equipment, data collection, support in implementation
SMEs / local food processors	Small and medium-sized enterprises / local processors	Participation in pilot activities, application of solutions and potential replication of demonstrated models
Family farms	Farmers & Agricultural Producers	Participation in pilot activities and application of solutions
Academic expert	Research/academic sector	Delivery of lecture, knowledge transfer and capacity building
General public	Consumers & Households	Participation in awareness activities and dissemination of knowledge



1.5. ACTIVITIES IMPLEMENTED

1.5.1. Description of Activities

The Pilot Action was implemented through several interconnected activities aimed at demonstrating practical solutions for food waste prevention, by-product valorization and circular economy application in primary agricultural production.

The first phase included preparation of the Zero Waste Innovation Lab at the Development Centre of Lika-Senj County in Gospić. This included coordination between LIRA and the Development Centre, preparation of the premises, installation and commissioning of equipment and planning of demonstration and awareness-raising activities.

The second phase included practical presentation and demonstration of technologies relevant for reducing food waste and increasing the value of agricultural products and by-products. Particular attention was given to freeze-drying technology as a solution for extending the shelf life of perishable fruit, especially berries and other seasonal products that are often affected by short market availability and post-harvest losses.

In addition to fruit processing and by-product valorisation, the Pilot Action included practical testing and demonstration of freeze-drying technology on selected locally available fruit and vegetables. The testing included vegetables such as cauliflower, broccoli, carrot, celery and parsley, as well as fruit such as strawberries, raspberries and plums. The purpose of this activity was to demonstrate how highly perishable raw materials, which are often affected by seasonality, short shelf life and market fluctuations, can be preserved and transformed into stable products with longer usability and added value.



Freeze-drying was presented as a technology that can significantly extend the shelf life of fresh products, from only a few days or weeks to several months or even years, depending on the type of product, packaging and storage conditions. This is particularly relevant for small producers, family farms and SMEs that often face difficulties in placing all fresh produce on the market during peak season. By removing water at low temperature while preserving product structure, colour, flavour and nutritional potential to a high extent, freeze-drying enables producers to reduce losses, diversify their offer and develop new market-oriented products.

The demonstration was also used as an awareness-raising activity for agricultural producers and SMEs. Participants were introduced to practical examples of how surplus or highly perishable raw materials can be transformed into new products instead of being discarded or sold below value. In this way, the Pilot Action showed that food waste prevention can be achieved not only through better waste management, but also through improved processing, product development and the creation of new value chains based on local raw materials.

The Pilot Action also focused on the processing and valorization of agricultural by-products, with particular emphasis on plum pits generated during traditional plum processing. The demonstrated model presented a fully circular production process in which the entire plum is used and no residual material remains unused.

In the first stage, plums are processed for their pulp, which is used for the production of gelled fruit products, such as jams, spreads or similar value-added food products. During this process, plum pits are separated as a secondary material. Instead of being discarded, the pits are further processed and transformed into new usable outputs.



The separated plum pits are first washed and then dried in order to prepare them for mechanical processing. After drying, the pits are cracked and crushed, which enables the separation of two fractions: the woody shell and the kernel. Each of these fractions is then directed into a separate valorization pathway, depending on its properties and potential use.

The woody part of the plum pit is milled and further processed into pellets, which can be used as a renewable energy source for heating. In this way, a material that would otherwise be considered waste is converted into a useful bio-based fuel, contributing to the reduction of waste and supporting local energy efficiency.

The kernel, as the inner part of the plum pit, is used for cold pressing. Through this process, two additional outputs are obtained: cold-pressed plum kernel oil and press cake. The oil is subsequently filtered and filled into appropriate packaging, resulting in a new value-added product with market potential. The remaining press cake is not discarded, but can be used as a secondary raw material, for example as animal feed, depending on its quality and compliance with relevant requirements.

Overall, the process results in the creation of several new secondary raw materials and products from a material that was previously treated as waste. From plum processing, the model enables the production of gelled fruit products from the pulp, pellets from the woody shell, cold-pressed oil from the kernel, and press cake as an additional usable by-product. In this way, the Pilot Action demonstrates a complete zero-waste circular model in which agricultural by-products are reintroduced into the production cycle and transformed into products with added economic, environmental and practical value.



The opening event of the ECOFOODCYCLE Zero Waste Innovation Lab was organized on 12 May 2026 and included presentations, practical demonstrations, expert lectures and a workshop. Participants were introduced to the purpose of the Lab, the available equipment and the practical possibilities for reducing food waste and developing new products from local raw materials.

A specialized lecture on the potential of oil production in the Lika region was delivered by an academic expert from the Faculty of Food Technology and Biotechnology. The lecture provided scientific and technical insights into oil production, with particular emphasis on the potential of local resources and agricultural by-products.

The Pilot also included a practical workshop focused on the preparation of energy bars using local ingredients. Through the participation of a local entrepreneur and producer, participants were introduced to the development of small-scale food products, the use of local ingredients, sustainable production without artificial additives and the connection between tradition, innovation and market-oriented product development.

Overall, the Pilot Action combined infrastructure development, equipment demonstration, expert knowledge transfer, producer engagement and public awareness raising. This approach ensured that the Pilot was not limited to the installation of equipment, but functioned as a practical platform for cooperation, innovation and future development of sustainable food systems in Lika-Senj County.



1.5.2. Timeline of Main Activities

Table 4: Small-Scale Pilot action timeline

Period	Main activities
13.4.2026. – 7.5.2026.	Preparation of the Pilot Action, coordination with the Development Centre of Lika-Senj County, preparation of the Zero Waste Innovation Lab premises, planning of communication activities and stakeholder engagement.
7.5.2026. – 11.5.2026.	Dissemination activities before the opening event, including publication of the announcement through LIRA and local media channels.
12.5.2026.	Official opening of the ECOFOODCYCLE Zero Waste Innovation Lab in Gospić, including presentation of the project, expert lecture, practical demonstrations of equipment and workshop with local ingredients.
13.5.2026. – 15.5.2026.	Follow-up dissemination activities, publication of project and media posts, collection of documentation.



1.6. MONITORING AND PROGRESS

1.6.1. Monitoring Approach

The monitoring approach applied within the Pilot Action was based on a combination of qualitative and quantitative data collection. Since the Pilot Action focused on demonstration, awareness raising and valorization of agricultural by-products, monitoring was not limited only to the measurement of food waste quantities, but also included tracking of implemented activities, equipment use, stakeholder participation, types of raw materials and by-products addressed, and preliminary observations regarding the potential for waste reduction.

Data collection was coordinated by LIRA in cooperation with the Development Centre of Lika-Senj County and technical staff involved in the operation of the Zero Waste Innovation Lab. Monitoring data included records of implemented activities, number and type of stakeholders involved, equipment demonstrated, types of by-products and raw materials discussed or tested, communication outputs and feedback collected during the Pilot.

The monitoring approach was linked to the overall objectives of WP2 and the ECOFOODCYCLE project by documenting how the Pilot contributes to food waste prevention, circular use of agricultural by-products, extension of product shelf life and awareness raising among producers and the local community.

1.6.2. Objectives, Indicators and Measurement Methods

Table 5: Monitoring & Evaluation Plan

Objective	Indicator	Measurement method
Reduce food waste and losses in primary agricultural production	Quantity of raw material and by-products processed during the Pilot Action	Processing records, technical notes and internal monitoring documentation
Increase utilization of agricultural by-products	Quantity of plum pits, kernels and woody shell material separated and processed	Manual measurement and recording during pilot processing
Extend shelf life of perishable fruit and vegetables	Quantity of fresh fruit and vegetables freeze-dried and quantity of freeze-dried output obtained	Weighing of fresh input materials and freeze-dried outputs; processing records; photographic documentation
Demonstrate valorization of plum processing by-products	Quantity of plum kernel oil, pellets and solid residue obtained	Equipment use records and output measurements
Raise awareness among producers and the general public	Number and type of dissemination and awareness-raising activities implemented	Attendance records, event documentation, photographic evidence, website posts, local media posts and social media/social network records.

1.6.3. Progress Against Indicators

Table 6: Small-Scale Pilot Action Progress Against indicators

Indicator	Baseline	Target	Current value	Status
Zero Waste Innovation Lab established	0	1 Lab established	1 Lab established and opened in Gospić	Achieved
Fruit and vegetables preserved through freeze-drying	0 kg	Pilot testing of locally available fruit and vegetables	Approx. 71 kg of fresh fruit and vegetables processed, resulting in approx. 8.58 kg of freeze-dried products	Achieved
Raw material processed	0 kg	Pilot testing of locally available plums	1,328.08 kg of plums processed	Achieved
Plum pits obtained	0 kg	Identification and processing of plum pits as by-product	132.8 kg of plum pits obtained	Achieved
Woody shell material valorized	0 kg	Use of woody shell material for pellet production	108.23 kg of woody shell material processed; 112 kg of pellets produced	Achieved
Plum kernels obtained and processed	0 kg	Testing of plum kernels for cold-pressed oil production	24.5 kg of kernels processed; 9.824 litres of oil obtained	Achieved



Solid press residue identified for further use	0 kg	Identification of remaining residue after pressing	approx. 15.5 kg of solid residue obtained	Achieved
Demonstrated technologies	0	Demonstration of processing equipment	Freeze-drying, cracking, milling, cold pressing and pelletising demonstrated	Achieved
Dissemination outputs published	0	Communication of pilot results to the public	Posters displayed at the Development Centre premises, 2 local media posts, 4 social media posts, 2 LP website posts and 1 project website post	Achieved

The freeze-drying testing included approximately 3 kg of fresh carrots, resulting in 330 g of freeze-dried product; 1 kg of parsley root, resulting in 100 g; 10 kg of parsley leaves, resulting in 1.6 kg; 10 kg of cauliflower, resulting in 500 g; 2 kg of celery, resulting in 200 g; 15 kg of plums, resulting in 2.25 kg; and 30 kg of strawberries, resulting in 3.6 kg of freeze-dried product.

1.7. RESULTS AND PRELIMINARY OUTCOMES

1.7.1. Main Results Achieved

The Pilot Action resulted in the establishment and opening of the ECOFOODCYCLE Zero Waste Innovation Lab in Gospić, which represents a new local platform for food waste prevention, by-product valorisation, knowledge transfer and practical demonstration of circular economy solutions.

One of the main results of the Pilot was the practical demonstration of how agricultural by-products and perishable products can be transformed into value-added products. Through the use of equipment such as a freeze-dryer, cold oil press, crusher, mill and pelletiser, the Pilot showed that food waste prevention can be achieved not only by reducing waste at the end of the chain, but also by redesigning production and processing practices.

The Pilot demonstrated the potential of freeze-drying technology for extending the shelf life of perishable fruit, which is particularly relevant for small producers facing seasonal surpluses and limited market windows. By preserving product quality and extending usability, freeze-drying can help reduce losses and create new market opportunities.

During the Pilot testing, freeze-drying was applied to several types of fresh fruit and vegetables in order to demonstrate the potential of this technology for preserving local raw materials and reducing losses caused by short shelf life. The tested vegetables included carrot, parsley root, parsley leaves, cauliflower and celery, while the tested fruit included strawberries and plums. Broccoli and raspberries were also included in the demonstration activities.



The testing showed a significant reduction in product weight as a result of water removal, while enabling the creation of stable freeze-dried products suitable for longer storage and potential further use in food product development. Approximately 3 kg of fresh carrots resulted in 330 g of freeze-dried product, 1 kg of parsley root resulted in 100 g, 10 kg of parsley leaves resulted in 1.6 kg, 10 kg of cauliflower resulted in 500 g, 2 kg of celery resulted in 200 g, 15 kg of plums resulted in 2.25 kg, and 30 kg of strawberries resulted in 3.6 kg of freeze-dried product.

In total, the recorded freeze-drying tests included approximately 71 kg of fresh fruit and vegetables, resulting in approximately 8.58 kg of freeze-dried products. Although these figures represent pilot-scale testing, they clearly demonstrate the potential of freeze-drying to reduce product perishability, extend storage time and create new value-added products from seasonal and locally available raw materials.

The Pilot also demonstrated the potential of plum pits and similar agricultural by-products as raw materials for the production of cold-pressed oil, pellets and other value-added products. The testing focused on locally available plums and the assessment of outputs generated after processing. The aim was to demonstrate how materials that are traditionally treated as residues or waste, particularly plum pits and their components, can be redirected into new value-added products.

During the pilot testing, approximately 1,328.08 kg of plums were used as input material. From this quantity, approximately 132.8 kg of plum pits were obtained. The plum pits were then processed using the cracking machine, which enabled the separation of the woody shell from the inner kernel.



After cracking and separation, approximately 108.23 kg of woody shell material was obtained. This fraction was further processed and used for pellet production. As a result, approximately 112 kg of pellets were obtained. Since the pellet quantity slightly exceeded the measured quantity of separated woody shell material, the difference is attributed to moisture content introduced or retained during the pelletizing process. This value should therefore be interpreted as a pilot-scale output measurement.

In addition, approximately 24.5 kg of plum kernels were obtained from the same batch of plum pits. The kernels were used for cold pressing, resulting in approximately 9.824 liters of plum kernel oil. This demonstrated the technical feasibility of producing cold-pressed oil from plum kernels and confirmed the added-value potential of this by-product.

After oil pressing, the remaining solid residue amounted to approximately 15.5 kg. This material also has potential for further valorization and may be used as flour, oil cake or as a raw material for the development of additional products, depending on future testing, quality assessment and intended application.

The preliminary results indicate that plum processing by-products have significant potential for circular use. From a single agricultural product, several useful outputs were obtained: plum pits, woody shell material, pellets, kernels, oil and solid press residue. In this way, the pilot demonstrated a practical zero-waste model in which by-products from traditional plum processing are transformed into valuable resources.

Although the testing was carried out on a pilot and demonstration scale, the results provide a relevant basis for future optimization of processing parameters, further testing and possible replication among family farms, small producers and local food processors in Lika-



Senj County. The activity confirmed the relevance of the Zero Waste Innovation Lab as a practical platform for testing, education and development of sustainable food waste reduction and by-product valorization solutions.

1.7.2. Strengths and Weaknesses Identified During the Pilot Action

The main strength of the Pilot Action was its practical and locally relevant character. The Pilot addressed real challenges faced by small producers in Lika-Senj County, including seasonal surpluses, short shelf life of products and underutilisation of agricultural by-products.

Another important strength was the establishment of a physical and operational space for demonstration, learning and cooperation. The Zero Waste Innovation Lab provides a visible and accessible platform that can continue to be used after the Pilot implementation period. The Pilot also successfully connected different types of stakeholders, including public institutions, technical staff, producers, entrepreneurs, the academic sector and the general public. This multi-stakeholder approach increased the practical relevance and transferability of the results.

The main limitation of the Pilot was the relatively short implementation and monitoring period, which limited the possibility of collecting long-term quantitative data on actual waste reduction, production efficiency and economic effects. In addition, further testing during the high peak season is needed in order to assess the full operational capacity of the demonstrated model, especially under conditions of increased availability of raw materials, higher processing volumes and more intensive production dynamics.



Another area for improvement is the need for more systematic collection of data from producers, including quantities of by-products generated, quantities processed, production costs, market potential and environmental impact. This would allow more detailed assessment of the economic and environmental benefits of the Pilot solutions.

Future activities should also include more testing with different types of raw materials and the development of clear protocols for equipment use, quality control and product development.



1.8. DISSEMINATION AND COMMUNICATION

1.8.1. Dissemination of Results

Dissemination and communication activities were an important part of the Pilot Action, as the Zero Waste Innovation Lab was designed not only as a technical pilot, but also as a public awareness and knowledge-transfer platform.

The main dissemination activity was the official opening of the ECOFOODCYCLE Zero Waste Innovation Lab on 12 May 2026 in Gospić. The event presented the objectives of the ECOFOODCYCLE project, the purpose of the Lab and the practical possibilities for reducing food waste and transforming agricultural by-products into new value-added products.

The opening event gathered representatives of LIRA, the Development Centre of Lika-Senj County, regional and local stakeholders, producers, entrepreneurs, experts and members of the public. The event included presentations, expert lectures, practical demonstrations of equipment and a workshop focused on sustainable food production and use of local ingredients.

Communication activities highlighted the role of the Lab as a place where waste becomes a resource, surplus becomes new value and sustainability becomes practical action. The event was also used to communicate the broader objectives of the ECOFOODCYCLE project, including reduction of food waste, environmental sustainability and the promotion of circular economy solutions.



The Pilot was disseminated through public communication channels, including project-related announcements, web and social media communication, photographic documentation and direct stakeholder engagement during the event.

Table 7: Dissemination of results

Activity	Target audience	Date
Posters displayed at Development Centre of Lika-Senj County premises	General public	7.5.2026.
Website post https://www.lsz-lira.hr/objava/najavljuje-mo-svecano-otvorenje-ecofoodcycle-zero-waste-innovation-laboratorija-u-gospicu-u-sklopu-dana-otvorenih-vrata-eu-projekata-2026/198	General public	7.5.2026.

Activity	Target audience	Date
Local media post https://najboljeizlike.com/novosti/vise/svecano-otvorenje-ecofoodcycle-zero-waste-innovation-lab-a-u-gospicu	General public	8.5.2026.
Social media post https://www.facebook.com/Razvojna.agencija.LIRA/posts/pfbid035FAeCYBmuBMGhXHJMeyRkZXRnydWDAAdRZ93D2Em2xgFrXAFabmzrmw3fVKJSImcfl?locale=hr_HR	General public	11.5.2026.
Official opening of the ECOFOODCYCLE Zero Waste Innovation Lab; demonstration of equipment and circular economy solutions	Local and regional stakeholders, producers, SMEs, public institutions, general public	12.5.2026.



Activity	Target audience	Date
Local media post https://najboljeizlike.com/novosti/vise/u-razvojnem-centru-lsz-otvoren-laboratorij-za-iskoristavanje-prehrambenih-v	General public	12.5.2026.
Website post https://www.lsz-lira.hr/objava/ju-razvojna-agencija-licko-senjske-zupanije-lira-otvorila-vrata-zero-waste-innovation-laba-u-gospicu/201	General public	13.5.2026.
Project web https://www.italy-croatia.eu/web/ecofoodcycle/dettaglio?articleId=28289145&groupId=13456062	General public	13.5.2026.

Activity	Target audience	Date
Social media post https://www.facebook.com/reel/1527348172115665?locale=hr_HR	General public	14.5.2026.
Social media post https://www.instagram.com/reel/DYUPAnwi11z/?utm_source=ig_web_copy_link&igsh=NTc4MTIwNjQ2YQ==	General public	14.5.2026.
Social media post https://www.linkedin.com/feed/update/urn:li:activity:7461027253381160960/	General public	15.5.2026.

Table summarizes the communication and dissemination activities linked to the pilot action, including on-site and online outreach. In addition to posters displayed at the premises of the Development Centre of Lika-Senj County, two posts were published in local media, four posts were published on social media, two posts were published on the official website of the Lead Partner, and one post was published on the official project website.



1.9. TRANSFERABILITY AND ENVIRONMENTAL BENEFITS IN LINE WITH ECOFOODCYCLE ONES

1.9.1. Transferability

The Pilot Action demonstrates strong transferability potential to other rural and agricultural areas facing similar challenges related to seasonal surpluses, short shelf life of products and underutilized agricultural by-products.

The Zero Waste Innovation Lab model can be replicated by other development centers, food innovation hubs, local authorities, producer organizations, family farms and SMEs interested in sustainable food processing and circular economy solutions. The model is particularly relevant for regions with fruit production, small-scale agriculture and traditional food processing, where by-products such as fruit pits, residues and surplus produce are often insufficiently used.

The demonstrated technologies, including freeze-drying, cold oil pressing, milling, crushing and pelletizing, can be adapted to different types of local raw materials. This makes the Pilot model flexible and applicable beyond Lika-Senj County.

The Pilot is also transferable as a cooperation model, as it combines public sector coordination, technical infrastructure, producer participation, academic expertise and public awareness raising. This integrated approach can support other regions in developing practical local solutions for food waste reduction and value creation.



1.9.2. Sustainability

The sustainability of the Pilot Action is ensured through the continued use of the Zero Waste Innovation Lab at the Development Centre of Lika-Senj County. The equipment and knowledge developed through the Pilot can continue to support demonstrations, trainings, testing activities and cooperation with producers after the initial Pilot implementation period.

The Pilot supports long-term sustainability by strengthening local capacities for food waste prevention, sustainable processing and by-product valorization. It also contributes to the development of new product ideas, additional income opportunities for producers and better use of local resources.

The established Lab can become a long-term platform for education, innovation and cooperation between producers, entrepreneurs, institutions and experts. In this way, the Pilot contributes not only to short-term awareness raising, but also to the creation of a more resilient and sustainable local food system.

1.9.3. Environmental impact

The environmental benefits of the Pilot Action are directly linked to the reduction of food waste, improved use of agricultural by-products and promotion of circular economy principles. By demonstrating freeze-drying technology, the Pilot supports the extension of shelf life of perishable fruit, reducing the risk of spoilage and unnecessary disposal. The freeze-drying tests carried out on vegetables and fruit demonstrated an important environmental benefit related to the prevention of spoilage of highly perishable raw



materials. By extending the usability of products such as carrots, parsley, cauliflower, celery, strawberries, raspberries and plums, the Pilot showed how seasonal products can be preserved beyond their short fresh-market window. This reduces the risk that unsold or surplus products are discarded and supports a more efficient use of resources already invested in primary production, including land, water, energy and labor.

In addition, freeze-dried products are lighter and more stable than fresh products, which may reduce losses during storage and create opportunities for new product development with longer shelf life. This is particularly relevant for small producers and SMEs in rural areas, where limited processing capacity and short marketing periods often contribute to food losses.

By demonstrating the valorization of plum pits and other by-products, the Pilot promotes the transformation of waste streams into new useful products such as oil, pellets and functional ingredients.

The Pilot also contributes to the reduction of environmental pressures associated with food waste, including unnecessary use of natural resources, waste generation and greenhouse gas emissions linked to the production and disposal of unused food and agricultural materials.

The quantities obtained during pilot testing confirmed that even by-products from one locally relevant raw material, such as plum, can generate several useful output streams, including woody shell material, pellets, kernels, oil and solid press residue. This makes the



model particularly relevant for replication among small producers and processors dealing with similar fruit by-products.

In addition, the Pilot promotes more responsible resource management and encourages producers and consumers to recognize food waste and by-products as valuable resources rather than waste.



1.10. CONCLUSIONS

The Pilot Action implemented by LIRA within the ECOFOODCYCLE project successfully demonstrated a practical and locally relevant model for food waste prevention and by-product valorization in primary agricultural production.

Through the establishment and opening of the ECOFOODCYCLE Zero Waste Innovation Lab in Gospić, the Pilot created a new space for knowledge transfer, practical demonstration, cooperation and innovation. The Lab connects public institutions, technical staff, producers, entrepreneurs, the academic sector and the local community around a shared objective: reducing food waste and transforming unused resources into new value.

The Pilot showed that sustainable technologies such as freeze-drying, cold oil pressing, milling, crushing and pelletizing can support small producers in reducing losses, extending product shelf life and developing new value-added products. The example of plum pits and other agricultural by-products demonstrated how materials traditionally treated as waste can become resources for new products and circular business models. In addition to the valorization of plum pits, the Pilot also confirmed the relevance of freeze-drying as a preservation technology for local fruit and vegetables, enabling the extension of shelf life and the creation of new products from seasonal raw materials that are otherwise vulnerable to spoilage and market losses.

The Pilot also contributed to awareness raising and capacity building by involving stakeholders in lectures, demonstrations and practical workshops. This helped



communicate the importance of food waste prevention, circular economy and sustainable food systems in a clear and practical way.

Although the Pilot implementation period was limited, the established infrastructure, stakeholder interest and demonstrated applicability of the solutions provide a strong basis for continuation, replication and further development. The Zero Waste Innovation Lab has the potential to become a long-term platform for sustainable food innovation in Lika-Senj County and a transferable model for other rural regions facing similar challenges.

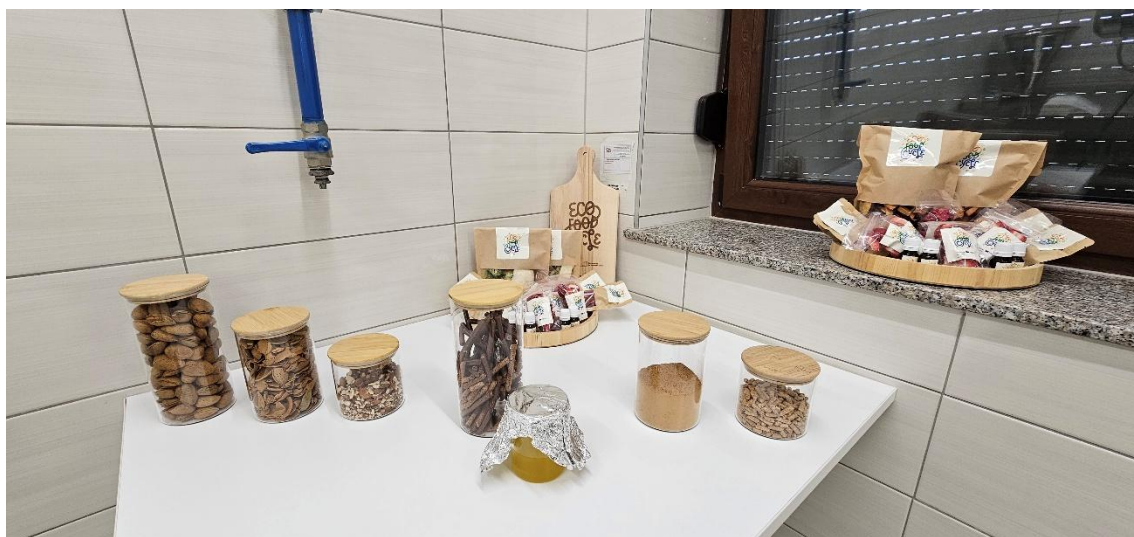
Overall, the Pilot contributes directly to the objectives of the ECOFOODCYCLE project by reducing the environmental footprint of food waste, promoting sustainable food systems and encouraging practical circular economy solutions at the local level.



This section provides documentary and visual evidence supporting the implementation and assessment of the Pilot Action.











2. SMALL SCALE PILOT ACTION n.2 – PP2, Public institution Regional development agency of Karlovac County (JURRA)

2.1. PILOT ACTION OVERVIEW

Name of the Pilot Action

Pilot Action for Food Waste Monitoring and Sustainable Food Waste Management in a Vocational School Kitchen Environment

Partner & Location

- **Partner:** Public institution Regional Development Agency of Karlovac County - JURRA (PP2)
- **Location of the Pilot Action:** school kitchen and restaurant facilities of the Commerce and Catering School Karlovac, an Associated Partner within the ECOFOODCYCLE project

Implementation Period

- **Start date:** 07.04.2026.
- **End date:** 15.05.2026.



2.2. DESCRIPTION OF THE PILOT ACTION

2.2.1. Background and Relevance

Food waste represents one of the major environmental and sustainability challenges within modern food systems. Significant quantities of food are discarded daily during food preparation, serving and consumption processes, resulting in unnecessary use of natural resources, increased waste generation and additional environmental pressures.

Within the ECOFOODCYCLE project, JURRA implemented a Small-scale Pilot Action focused on food waste monitoring and the introduction of sustainable food waste management practices in a real vocational and hospitality education environment.

The Pilot Action was carried out in cooperation with the Commerce and Catering School Karlovac, which participates in the project as an Associated Partner. The school environment was identified as highly suitable for Pilot implementation due to the continuous preparation and serving of meals within the school kitchen and restaurant facilities, practical culinary training activities, regular restaurant activities and catering-related operations carried out by the school.

The Pilot Action included baseline monitoring of food waste generation, continuous monitoring activities and the operational implementation of the food waste processing device aimed at supporting more sustainable food waste management practices. The device is used in a professional kitchen environment and supports reduction of the volume of food waste generated during everyday food preparation and food service activities.

The Pilot contributes directly to the objectives of the ECOFOODCYCLE project by promoting sustainable food systems, supporting food waste reduction and increasing awareness



regarding responsible food management practices among students and educational staff involved in hospitality and culinary education.

2.2.2. Objectives of the Pilot Action

The Pilot Action aimed to establish a practical framework for monitoring and reducing food waste within a vocational hospitality education environment through the implementation of sustainable food waste management practices in the school kitchen and restaurant facilities of the Commerce and Catering School Karlovac.

Specific objectives of the Pilot Action included establishing baseline data regarding food waste generation during food preparation and food service activities, implementing continuous monitoring activities and introducing practical food waste management solutions through the operational use of a food waste processing device.

The Pilot Action also aimed to increase awareness among students, teachers and practical training staff regarding food waste prevention, sustainable food systems and responsible food management practices. Due to the vocational nature of the Pilot environment, the action additionally contributes to the development of sustainable professional practices among future hospitality sector professionals.

Through the combination of monitoring activities, operational implementation and educational involvement, the Pilot Action contributes directly to the overall objectives of the ECOFOODCYCLE project related to food waste reduction, environmental sustainability,



promotion of sustainable food systems and increased stakeholder awareness regarding the environmental impact of food waste.

2.3. CHARACTERISTICS OF THE PILOT ACTION

Table 8: Pilot Action Overview

Element	Description
Location of the pilot action	School kitchen and restaurant facilities of the Commerce and Catering School Karlovac
Specific objective	Monitoring and reduction of food waste through practical implementation of sustainable food waste management solutions
Type of action	Small-scale Pilot Action in a vocational and hospitality education environment including baseline monitoring, continuous monitoring and operational implementation of a food waste processing device
Stakeholders involved	Students enrolled in culinary and hospitality programmes, vocational teachers, practical training staff, kitchen staff and JURRA (PP2) Project Team
Implementation period	07.04.2026. – 15.05.2026.

2.4. STAKEHOLDER INVOLVEMENT

2.4.1. Stakeholders Involved

The Pilot Action involved several stakeholder groups directly connected to vocational hospitality education and practical food preparation activities within the Commerce and Catering School Karlovac.

The Pilot was implemented within the operational environment of the school kitchen and restaurant facilities, enabling direct participation of students, teachers and kitchen staff in food preparation, food service and food waste management activities.

Students enrolled in culinary programmes participated in practical food preparation activities and directly interacted with the operational environment in which food waste monitoring and processing activities were carried out. Students enrolled in waiter and hospitality service programmes participated in food service activities within the school restaurant environment and indirectly contributed to food waste handling processes, including handling leftovers from restaurant service areas.

Vocational teachers and practical training staff supported the implementation of the Pilot Action through supervision of practical activities, educational guidance and awareness raising regarding sustainable food management practices.

JURRA coordinated the pilot activity implementation, monitoring activities and reporting within the ECOFOODCYCLE project framework.



The Pilot Action was carried out as part of the regular operational and educational activities of the Commerce and Catering School Karlovac. Students participating in culinary, waiter and hospitality service programmes regularly perform practical training and educational activities within the school kitchen and restaurant environment. The stakeholder participation figures presented in this report are based on the total number of students enrolled in the relevant vocational programmes, all of whom participate in practical educational activities connected to the school kitchen and restaurant environment, as well as on school records and participation estimates provided by the school.

Table 9: Stakeholder Engagement & Role Matrix

Stakeholder	Category	Role in the pilot action
Commerce and Catering School Karlovac	Schools & educational institutions	Associated Partner providing facilities and operational environment for pilot implementation
Culinary students (102)	Students / consumers	Participation in practical culinary activities and operational food waste management environment
Waiter students (41)	Students / food service participants	Participation in food service activities and indirect involvement in food waste handling processes

Stakeholder	Category	Role in the pilot action
Hospitality service technician students (25)	Students / hospitality sector participants	Participation in hospitality training activities within the school restaurant environment
Practical culinary training staff (3)	Food service providers / educational staff	Supervision of practical culinary activities and operational support
Vocational culinary teachers (4)	Schools & educational institutions	Educational support and awareness raising activities.
Practical waiter training staff (4)	Food service providers / educational staff	Supervision of hospitality service practical activities.
Vocational hospitality service teachers (2)	Schools & educational institutions	Educational support and awareness raising activities
JURRA (PP2) Project Team (4)	Public institution / project partner	Coordination, monitoring and reporting of Pilot implementation

Total estimated direct and indirect participants involved in the Pilot environment: approximately 185.



2.5. ACTIVITIES IMPLEMENTED

2.5.1. Description of Activities

The Pilot Action included several interconnected phases related to food waste monitoring and sustainable food waste management within the vocational school kitchen environment. The first phase included **baseline monitoring activities** aimed at establishing the initial quantities of food waste generated during food preparation and meal service activities. Monitoring activities included recording the number of prepared meals and portions, estimated quantities of food waste generated and estimated residual waste quantities after processing potential.

Following the baseline period, **continuous monitoring activities** were carried out during the second half of April 2026 in order to support data consistency and preparation for the operational implementation phase.

The activities also included the **operational implementation** and use of a **food waste processing device** within the school kitchen environment. The device supports food waste volume reduction and contributes to more sustainable food waste management practices. Typical food waste categories handled in the operational environment include plate scrapings, vegetable and fruit residues, peelings, bread, meat and fish residues, in line with regular school kitchen and restaurant operations.

Practical activities were implemented in cooperation with students and staff participating in culinary and hospitality training programmes. Activities included food preparation, meal service and operational interaction within the school kitchen and restaurant environment.



Variations in recorded food waste quantities were influenced by the operational dynamics of the school kitchen and restaurant facilities, including practical culinary training activities, catering services and regular restaurant meal preparation activities. On certain days, larger cooking or catering activities were not carried out, resulting in lower or less representative food waste quantities. Consequently, food waste generation levels differed between monitoring days.

The Pilot Action also contributed to awareness raising regarding food waste prevention and sustainable food management practices among students and educational staff.

2.5.2. Timeline of Main Activities

Table 10 Small-Scale Pilot action timeline

Period	Main activities
07.04.2026. - 15.04.2026.	Baseline monitoring activities and recording of food waste quantities
16.04.2026. - 30.04.2026.	Continuous monitoring activities and preparation for the operational implementation phase
01.05.2026. – 15.05.2026.	Operational implementation and use of the food waste processing device in the school kitchen environment

2.6. MONITORING AND PROGRESS

2.6.1. Monitoring Approach

The monitoring approach adopted within the Pilot Action was based on daily recording and monitoring of food waste quantities generated during food preparation and food service activities in the school kitchen environment.

Data collection was carried out through manually completed monitoring sheets during baseline and continuous monitoring periods. The data included the number of prepared meals/portions, estimated food waste quantities and estimated residual waste after processing potential.

Monitoring activities were supported by school staff and coordinated by the JURRA project team within the ECOFOODCYCLE project framework.

The monitoring approach contributes to the broader objectives of WP2 by supporting practical assessment and implementation of food waste reduction activities in educational and hospitality environments. The indicator food waste per meal was used as a key comparative indicator because it allows comparison across days with different numbers of prepared meals and different kitchen activity levels.

The Pilot was implemented in a vocational school kitchen and restaurant environment, where food waste is generated not only from served meals, but also from culinary preparation activities, practical training, restaurant service and catering operations. Therefore, the food waste per meal indicator should be interpreted as an operational food waste intensity indicator rather than as plate waste per individual meal.



2.6.2. Objectives, Indicators and Measurement Methods

Table 11: Monitoring & Evaluation Plan

Objective	Indicator	Measurement method
Establish baseline food waste quantities	Amount of food waste generated (kg/day)	Daily monitoring sheets and manual recording
Monitor food waste generation	Food waste per meal (kg/meal)	Comparison between recorded food waste quantities and number of prepared meals
Support reduction of food waste	Estimated reduction potential after processing	Continuous monitoring, operational observations and device processing characteristics
Raise awareness among students and staff	Number of participants involved in the Pilot environment	School records and participation estimates
Promote sustainable food management practices	Operational implementation of food waste processing device	Operational use and observation in the school kitchen environment

2.6.3. Progress Against Indicators

Table 12: Small-Scale Pilot Action Progress Against indicators

Indicator	Baseline	Target	Current value	Status
Amount of food waste generated	Baseline established during April 2026 monitoring	Continuous monitoring and reduction assessment	Monitoring activities completed	Achieved
Food waste per meal	0.32 kg/meal	Reduction compared to baseline	0.26 kg/meal during ongoing monitoring	Improved
Number of participants involved	Not applicable	Involvement of students and staff	Approx. 185 participants/stakeholders involved	Achieved
Operational implementation of food waste processing device	Not applicable	Operational implementation in school kitchen environment	Device operational in school kitchen	Achieved
Estimated reduction potential after processing	Not applicable	Reduction of residual food waste volume	Approx. 92.5% estimated reduction potential	Preliminary operational assessment



2.7. RESULTS AND PRELIMINARY OUTCOMES

2.7.1. Main Results Achieved

The Pilot Action successfully established a practical monitoring framework for assessing food waste generation within a vocational hospitality education environment.

Baseline and continuous monitoring activities enabled the collection of initial data related to food waste quantities generated during food preparation, restaurant service and catering-related activities within the school kitchen environment. Monitoring results demonstrated variations in food waste quantities depending on meal preparation volumes, practical culinary activities, catering operations and daily kitchen dynamics.

During the baseline monitoring period, a total of 279 prepared meals and portions were recorded, generating an estimated 91 kg of food waste, corresponding to an average of approximately 13 kg of food waste per day and 0.32 kg of food waste per meal.

During the continuous monitoring period, a total of 499 prepared meals and portions were recorded, generating an estimated 131 kg of food waste, corresponding to an average of approximately 11.91 kg of food waste per day and 0.26 kg of food waste per meal. The monitoring period confirmed the operational relevance of continuous food waste monitoring within the school kitchen environment and provided additional data supporting future long-term assessment of food waste reduction effects.

The Pilot Action also enabled the operational implementation of the food waste processing device within the school kitchen environment. Based on preliminary operational



observations and device functionality, the system demonstrates significant potential for reducing the volume of food waste requiring disposal.

According to preliminary operational estimates provided by school kitchen staff, approximately 20 kg of food waste generated during daily kitchen activities may be reduced to approximately 1–2 kg of residual material after processing, with an estimated operational average of approximately 1.5 kg/day. This represents an estimated reduction potential of approximately 92.5% in food waste volume.

Beyond the direct operational use of the food waste processing device, the Pilot Action also contributed to broader awareness raising regarding food waste generation and sustainable food management practices among students and educational staff.

The continuous presence of the device within the school kitchen and restaurant environment enabled participants to directly observe the quantities of food waste generated through everyday food preparation, restaurant service and catering activities. This practical exposure contributed to increased understanding of the environmental impact of food waste and encouraged more responsible approaches to food preparation, resource management and waste prevention.

Due to the vocational and educational nature of the Pilot environment, the activity also has broader indirect outreach potential, as students participating in culinary and hospitality education may transfer acquired awareness and sustainable practices into their future professional activities as well as everyday household practices.



2.7.2. Strengths and Weaknesses Identified During the Pilot Action

The Pilot Action demonstrated several important strengths related to the practical implementation of food waste monitoring and sustainable food waste management within a vocational hospitality education environment.

One of the key strengths of the Pilot Action was its implementation in a real operational kitchen and restaurant environment combining culinary education, hospitality training and catering-related activities. The Pilot enabled direct involvement of students, teachers and practical training staff in everyday food preparation and food waste management processes, contributing to increased awareness regarding sustainable food systems and responsible food management practices.

The Pilot also demonstrated strong educational and operational value through the integration of food waste monitoring activities and practical implementation of a food waste processing device within vocational culinary and hospitality education. The combination of baseline monitoring, continuous monitoring and operational implementation activities established a practical framework with strong transferability potential for other vocational schools and institutional kitchen environments.

At the same time, several areas for further improvement were identified during implementation. Monitoring activities were initially based on manual data recording, while variations in catering activities and practical culinary operations influenced daily food waste quantities and operational dynamics. Longer monitoring periods and additional quantitative



environmental impact assessments could further strengthen future implementation and long-term evaluation of reduction effects.

Table 13

Strengths identified	Areas for improvement
Implementation in a real vocational hospitality and food service environment	Monitoring activities initially based on manual data recording
Strong involvement of students, teachers and practical training staff	Variations in catering and practical culinary activities influenced daily waste quantities
Integration of food waste management into culinary and hospitality education	Longer monitoring periods would support more detailed long-term comparative assessment
Establishment of baseline and continuous monitoring framework	Future implementation phases could include additional quantitative environmental impact calculations
Operational implementation of a food waste processing device	
High transferability potential for educational and institutional kitchen environments	
Combination of educational, operational and environmental sustainability components	

2.8. DISSEMINATION AND COMMUNICATION

2.8.1. Dissemination of Results

The Pilot Action included awareness raising and communication activities connected to the implementation of sustainable food waste management practices within the vocational school environment.

Dissemination activities included internal awareness raising among students and educational staff, preparation of communication materials and planned website and social media dissemination activities related to the implementation of the Pilot Action.

The Pilot Action is suitable for public communication because it combines practical education, food preparation, sustainable resource management and visible implementation of a food waste processing solution in a real kitchen environment.

The implementation of the Pilot Action also established a foundation for continued communication and awareness raising activities beyond the reporting period. At the time of preparation of this report, additional dissemination activities and public communication materials related to the Pilot Action were still under development and are expected to be published during subsequent project implementation phases.



Table 14: Dissemination of results

Activity	Target audience	Date
Internal awareness and practical educational activities within school kitchen environment	Students and school staff	April–May 2026
Preparation of communication materials and project dissemination activities	General public and project stakeholders	May 2026
Planned website and social media dissemination activities	General public	May–June 2026
Communication of Pilot Action results through project-related dissemination channels	Project partners and stakeholders	Ongoing

2.9. TRANSFERABILITY AND ENVIRONMENTAL BENEFITS IN LINE WITH ECOFOODCYCLE ONES

2.9.1. Transferability

The Pilot Action demonstrates strong transferability potential to other vocational schools, educational institutions and institutional kitchen environments. The monitoring methodology applied within the Pilot Action is relatively simple and can be implemented using basic monitoring tools and operational coordination between educational staff and kitchen personnel.

The integration of food waste processing equipment into vocational hospitality environments may contribute to improved food waste management practices, reduction of residual waste quantities and increased awareness regarding sustainable food systems.

The Pilot model may be replicated in other educational and institutional food service environments where practical culinary training and food preparation activities are carried out on a daily basis. It is particularly relevant for vocational schools and institutions preparing future professionals for the hospitality and food service sector.

2.9.2. Sustainability

The Pilot Action supports the long-term integration of sustainable food waste management practices into vocational culinary and hospitality education.

The continued operational use of the food waste processing device may contribute to long-term awareness raising and practical implementation of sustainable food management practices within the school environment.



The educational dimension of the Pilot Action contributes to the development of sustainable professional practices among future hospitality sector workers and supports the promotion of environmentally responsible approaches within food service activities.

The Pilot Action also supports long-term behavioural change by increasing awareness regarding food waste prevention among future hospitality professionals. Through daily exposure to practical food waste management activities, students and staff are encouraged to adopt more sustainable approaches not only within professional food service environments, but also in everyday household practices.

2.9.3. Environmental impact

The Pilot Action contributes to reducing the environmental impact associated with food waste generation in institutional kitchen environments.

Baseline and continuous monitoring activities established an initial assessment framework regarding food waste quantities generated during food preparation and food service activities.

The operational implementation of the food waste processing device contributes to the reduction of food waste volume and supports more sustainable food waste management practices within the school kitchen environment.

Based on preliminary operational observations and device functionality, food waste quantities generated during daily kitchen activities may be significantly reduced after processing, potentially decreasing the amount of waste requiring disposal and reducing environmental pressures associated with food waste management.



The estimated reduction from approximately 20 kg/day of food waste to approximately 1-2 kg/day of residual material indicates a strong reduction potential in terms of waste volume requiring disposal. Continued monitoring will enable further validation of long-term environmental benefits and support future assessment of greenhouse gas reduction potential.

The Pilot Action also contributes to awareness raising regarding sustainable resource management and food waste prevention among students and staff participating in culinary and hospitality education programmes.



2.10. CONCLUSIONS

The Pilot Action implemented by JURRA within the ECOFOODCYCLE project successfully established a practical framework for food waste monitoring and sustainable food waste management within a vocational hospitality and culinary training environment.

The Pilot combined baseline monitoring, continuous monitoring activities and operational implementation of food waste processing equipment within the school kitchen and restaurant facilities of the Commerce and Catering School Karlovac.

The Pilot Action demonstrated strong educational, operational and environmental relevance through the involvement of students, teachers and practical training staff participating in culinary and hospitality training activities.

The implementation of the Pilot contributes directly to the broader objectives of the ECOFOODCYCLE project by promoting sustainable food systems, supporting food waste reduction, raising awareness regarding food waste prevention and encouraging practical implementation of sustainable food management practices within educational and institutional kitchen environments.

The Pilot Action also demonstrates strong potential for continuation and future replication in similar vocational and institutional food service environments.

The Pilot Action demonstrated how practical implementation of sustainable food waste management solutions within vocational education environments can simultaneously contribute to environmental objectives, educational outcomes and long-term awareness raising among future hospitality sector professionals.



The following annexes provide documentary, operational and visual evidence supporting the implementation and preliminary assessment of the Pilot Action.

A - Baseline Monitoring Sheets

Date	Number of prepared meals/portions	Estimated quantity of food waste (kg)	Estimated quantity of residual waste after processing potential (kg)
07.04.2026.	17	4	1
08.04.2026.	30	9	4
09.04.2026.	20	5	1
10.04.2026.	120	40	10
13.04.2026.	17	4	1
14.04.2026.	30	9	4
15.04.2026.	45	20	7

Indicator	Value
Total number of meals/portions	279
Total estimated quantity of food waste	91 kg
Average estimated quantity of food waste per day	13 kg
Average food waste per meal/portion	0.32 kg
Estimated quantity of residual waste after processing potential	28 kg



B - Continuous Monitoring Records

Date	Number of prepared meals/portions	Estimated quantity of food waste (kg)	Estimated quantity of residual waste after processing potential (kg)
16.04.2026.	80	20	7
17.04.2026.	17	4	1
20.04.2026.	65	16	6
21.04.2026.	30	20	7
22.04.2026.	30	20	7
23.04.2026.	135	6	1
24.04.2026.	30	20	7
27.04.2026.	35	9	4
28.04.2026.	17	4	1
29.04.2026.	30	8	3
30.04.2026.	30	4	1

Indicator	Value
Total number of meals/portions	499
Total estimated quantity of food waste	131 kg
Average estimated quantity of food waste per day	11.91 kg
Average food waste per meal/portion	0.26 kg
Estimated quantity of residual waste after processing potential	45 kg



C - Preliminary Operational Assessment

Indicator	Estimated value
Average daily quantity of food waste before processing	20 kg/day
Estimated quantity after processing	1-2 kg/day
Average estimated residual quantity after processing	1.5 kg/day
Estimated average daily reduction	18.5 kg/day
Estimated reduction percentage	approx. 92.5%

The assessment is based on preliminary operational observations provided by school kitchen staff and on the functional characteristics of the food waste processing device used within the Pilot environment. The values presented represent estimated operational reduction potential rather than long-term verified monitoring results. Continued monitoring activities during future implementation phases may provide additional quantitative assessment data regarding long-term reduction effects and operational performance.

Beyond its operational food waste reduction potential, the Pilot Action also demonstrates broader environmental and educational value by increasing awareness regarding sustainable food management practices among students and staff participating in vocational hospitality education. The continuous use of the food waste processing device within the school kitchen environment contributes not only to reducing the volume of food waste requiring disposal, but also to encouraging more responsible approaches to food



preparation, resource management and waste prevention within future hospitality sector practices.

D - Stakeholder Participation Overview

Stakeholder group	Number of participants
Culinary students	102
Waiter students	41
Hospitality service technician students	25
Practical culinary training staff	3
Vocational culinary teachers	4
Practical waiter training staff	4
Vocational hospitality service teachers	2
JURRA (PP2) Project Team	4
Total participants/stakeholders	185

E - Visual Documentation

The following visual documentation is included to support the implementation of the Pilot Action:

Photograph of food waste processing device (Figure 1.)



Figure 1. Food waste processing device installed within the school kitchen environment of the Commerce and Catering School Karlovac



Photographs of the food waste processing device in operational use within the school kitchen environment (Figure 2. and Figure 3.)

Figure 2. Operational use of the food waste processing device during practical culinary activities within the school kitchen environment



Figure 3. Food waste handling and processing activities carried out during everyday food preparation operations.



Photograph of the operational kitchen environment (Figure 4.)

Figure 4. Professional kitchen environment used for culinary education, food preparation and Pilot implementation activities.



Photographs of students participating in culinary activities (Figure 5. and Figure 6.)

Figure 5. Students participating in practical culinary training activities within the vocational hospitality education environment.



Figure 6. Outdoor culinary preparation activities carried out within the vocational hospitality training environment.



Photographs of pilot implementation activities (Figure 7., Figure 8. and Figure 9.)

Figure 7. Food waste generated during practical food preparation activities prior to processing.



Figure 8. Biodegradable food waste generated during culinary preparation activities before treatment and processing.



Figure 9. Processed food waste material following operational use of the food waste processing device.



3. SMALL SCALE PILOT ACTION n. 3 – PP3, Zadar County Development Agency (ZADRA NOVA)

3.1. PILOT ACTION OVERVIEW

Name of the Pilot Action

From Kitchen to Zero Waste: Food Waste Reduction Pilot in Zadar

Partner & Location

- **Partner (PP):** ZADRA NOVA
- **Location of the pilot action:** HOTEL, TOURISM AND CATERING SCHOOL ZADAR

Implementation Period

- **Start date:** 20 April 2026
- **End date:** 15 May 2026



3.2. DESCRIPTION OF THE PILOT ACTION

3.2.1. Background and Relevance

Food waste represents a significant environmental and socio-economic challenge, particularly in the hospitality and food service sector, where inefficient food use and poor storage practices often lead to unnecessary waste. In line with EU priorities on circular economy and the transition towards more sustainable and resource-efficient food systems, addressing food waste at the level of education and skills development is of particular importance. In Zadar County, the need to raise awareness and build practical competencies among future professionals in the hospitality sector has been identified as a key priority.

The selected school provides vocational education for future hospitality professionals, including students enrolled in culinary (chef) programmes. A significant component of their education is based on practical training, which accounts for approximately 20% of the curriculum. Students spend around 8 school hours per week (45 minutes per hour) in practical training, working in the school kitchen and training restaurant where they prepare and serve food in real-life conditions.

This strong practical component enables students to engage directly in all stages of food handling, from preparation to serving, making the school environment highly relevant for testing and implementing food waste reduction measures.



3.2.2. Objectives of the Pilot Action

This pilot action addresses the identified challenges by targeting students of the Hotel and Tourism School in Zadar, aiming to improve their knowledge and behaviour related to food waste prevention. The pilot contributes directly to the objectives of the ECOFOODCYCLE project by promoting sustainable food management practices and supporting the transition towards low-waste and resource-efficient systems.

The main objective of the pilot is to reduce food waste generation through education, behavioural change, and the introduction of practical solutions within a vocational education setting. Specific objectives include increasing awareness of the environmental and social impacts of food waste, improving knowledge on proper food storage and meal planning, and promoting the use of food leftovers.

In addition, the pilot aims to integrate the principles of food waste prevention and the zero-waste philosophy into the educational process at an early stage, thereby fostering responsible professional behaviour and contributing to long-term systemic change in the hospitality sector.



3.3. CHARACTERISTICS OF THE PILOT ACTION

Table 15: Pilot Action Overview

Element	Description
Location of the pilot action	HOTEL, TOURISM AND CATERING SCHOOL ZADAR
Specific objective	To reduce food waste generation among students through education, behavioural change, and the application of practical food waste reduction measures in a vocational training environment.
Type of action	Educational and demonstration pilot action combining awareness-raising activities, practical training, and testing of food waste reduction measures in a real-life setting.
Stakeholders involved	Students, teachers, ZADRA NOVA, local food producers, waste management stakeholders and the local community
Implementation period	20.4.2026.-15.5.2026.

3.4. STAKEHOLDER INVOLVEMENT

3.4.1. Stakeholders Involved

The pilot action involves key stakeholders from the education and food systems sectors. The main target group consists of students of the Hotel and Tourism School in Zadar, who actively participate in educational activities and practical training related to food preparation and service. Teachers play a crucial role in guiding the learning process and supporting the integration of food waste prevention practices into everyday activities.

ZADRA NOVA acts as the coordinating partner, responsible for the overall organisation and implementation of the pilot, as well as for stakeholder engagement and communication. Additional stakeholders include local farms and food producers, who contribute through study visits and knowledge exchange, enabling students to better understand food production processes and the importance of reducing waste across the supply chain.

Through the involvement of these stakeholders, the pilot ensures a multi-level approach combining education, practical application, and real-world insights.



Table 16: Stakeholder Engagement & Role Matrix

Stakeholder	Category	Role in the pilot action
Students (culinary programme)	Consumers / educational group	Active participants in training, workshops, and practical implementation
Teachers	Schools & educational institutions	Facilitation of activities, guidance, and support in behavioural change
Local farms / producers	Farmers & agricultural producers	Participation in study visits and knowledge exchange on food production and waste reduction
Waste management companies	Technology & logistics providers	Support in waste separation and management practices
General public	Consumers & households	Indirect beneficiaries through awareness-raising and dissemination activities

3.5. ACTIVITIES IMPLEMENTED

3.5.1. Description of Activities

The pilot action was implemented in the Hotel and Tourism School in Zadar and focused on combining educational and practical approaches to reducing food waste. The implementation was structured through preparatory and implementation phases, with a focus on integrating food waste prevention principles into vocational education activities.

During the preparatory phase, the pilot workflow was defined based on a common template, including the identification of target groups, planning of activities, and preparation of educational content. The activities were designed to combine theoretical knowledge with practical application in order to support behavioural change among students.

The implementation phase included educational sessions and workshops addressing key topics such as food waste awareness, proper food storage, meal planning, and the use of food leftovers. These activities were supported by the introduction of practical measures, including composting and waste separation, allowing students to apply acquired knowledge in a real-life educational environment.

As part of the pilot action, food waste generated in the school kitchen was monitored over two separate monitoring phases. During the initial monitoring phase, food preparation and service activities were carried out according to the usual practices in order to establish a baseline of food waste generation. Following the implementation of educational and awareness-raising activities, monitoring continued during the second monitoring phase, with



increased awareness among students and teachers and the application of food waste reduction practices aimed at minimising unnecessary waste generation.

In addition, study visits to local food producers were organised in order to provide students with a broader understanding of food production processes and the importance of reducing food waste throughout the food supply chain. An e-cookbook based on food leftovers was also developed as part of the pilot activities, promoting the practical application of zero-waste principles and encouraging the creative use of surplus food and food leftovers.

The pilot activities were complemented by communication and dissemination activities, including social media communication, awareness-raising materials, and the promotion of pilot results through the ECOFOODCYCLE project communication channels. Overall, the pilot action aimed to test practical, transferable, and easily applicable approaches to reducing food waste within a vocational education setting.



3.5.2. Timeline of Main Activities

Table 17: Small-Scale Pilot action timeline

Period	Main activities
20.04- 01.05.2026.	Initial monitoring phase: daily measurement and recording of food waste and meal leftovers
04.05.2026.	Internal awareness-raising session and assessment of previously collected data
04.05.-14.05.2026.	Zero-waste cooking practice phase
04.05.-11.05.2026.	Zero-waste recipe development and preparation of a zero-waste cookbook
12.05.2026.	Educational session led by Branka Ilakovic from the Food Waste Management Centre
14.05.2026.	Study visits to Iva Bulić family farm in Benkovac and CROMARIS fish farm in Nin
15.05.2026.	Final monitoring day and consolidation of collected data

3.6. MONITORING AND PROGRESS

3.6.1. Monitoring Approach

Meals are prepared daily as part of the practical training activities in the kitchen of the Hotel, Tourism and Catering School Zadar, during which a certain amount of food waste is generated through food preparation and consumption. The monitoring process was carried out by measuring the quantity of food used during meal preparation, as well as the quantity of uneaten food remaining after meals on a daily basis. In this way, food waste generation was monitored throughout the everyday practical training activities carried out in the school kitchen. The pilot action is based on a simple and practical methodology aimed at comparing the quantity of food waste generated before and after the implementation of educational and awareness-raising activities related to food waste prevention.

Food waste was monitored over a two-week period following the usual food preparation and consumption practices in the school kitchen, while the quantities of generated food waste were recorded on a daily basis. After the completion of the initial monitoring period, educational and awareness-raising activities focused on proper food management, food waste reduction, and the application of zero-waste principles were carried out. Immediately afterwards, food waste monitoring continued, but with an increased level of awareness among students and teachers, as well as with additional efforts invested in reducing food waste to the lowest possible level.

The monitoring process includes the daily recording and weighing of food waste generated during practical training activities. In addition to quantitative monitoring, qualitative



observations related to students' behaviour, awareness, and participation are also taken into account. Monitoring activities are coordinated by ZADRA NOVA in cooperation with the Hotel, Tourism and Catering School Zadar.

3.6.2. Objectives, Indicators and Measurement Methods

The monitoring framework of the pilot action is based on the definition of clear objectives, measurable indicators, and practical measurement methods aligned with the overall objectives of the ECOFOODCYCLE project. The selected indicators are focused on monitoring changes in food waste generation, participation in educational activities, and behavioural changes related to food preparation and consumption practices.

The monitoring methodology combines quantitative and qualitative approaches in order to ensure a comprehensive assessment of the pilot action and its potential contribution to reducing food waste within the educational environment. The following table presents the main objectives of the pilot action together with the corresponding indicators and measurement methods used during the implementation and monitoring process.

Table 18: Monitoring & Evaluation Plan



Objective	Indicator	Measurement method
Reduce food waste generated during practical training activities	Quantity of food waste generated before and after awareness-raising activities	Daily weighing and recording of food waste quantities
Raise awareness among students about food waste prevention	Number of students participating in educational activities	Attendance lists and participation records
Encourage behavioural change related to food preparation and consumption	Reduction in the quantity of avoidable food waste during the second monitoring period	Comparison of monitoring results between the two monitoring phases
Promote the application of zero-waste principles in practical training	Number of implemented practical measures related to food waste reduction	Observation and internal activity records
Strengthen students' understanding of sustainable food management	Participation in educational activities and practical exercises	Activity documentation and qualitative observations

3.6.3. Progress Against Indicators

Table 19: Small-Scale Pilot Action Progress Against indicators

Indicator	Baseline	Target	Current value	Status
Quantity of food waste generated during practical training activities	During the first monitoring period, a total of 20.35 kg of food waste was recorded during food preparation and after meal consumption	Reduction of food waste quantities during the second monitoring period	During the second monitoring period, a total of 6.48 kg of food waste was recorded, representing a significant reduction in food waste quantities	Completed
Number of students participating in educational activities	0	Active participation of students involved in practical training activities	30 students (plus five mentors)	Completed
Reduction in avoidable food waste	During the first monitoring period, 4.03 kg of food leftovers were recorded after meal consumption	Observable reduction in food leftovers after awareness-raising activities	During the second monitoring period, only 0.60 kg of food leftovers were recorded after meal consumption	Completed

Indicator	Baseline	Target	Current value	Status
Number of study visits implemented	0	Implementation of study visits to local farms / OPGs	2 study visits to local food producers implemented	Completed
Participation in educational activities and practical exercises	0	Participation of students and teachers in pilot activities	2 educational activities implemented with the active participation of students and teachers	Completed
Number of developed zero-waste recipes	0	Minimum of five developed recipes	10 zero-waste recipes developed and included in the e-cookbook	Completed

3.7. RESULTS AND PRELIMINARY OUTCOMES

3.7.1. Main Results Achieved

The pilot action enabled detailed monitoring of food waste generation during practical training activities at the Hotel, Tourism and Catering School Zadar. Food waste monitoring was carried out over two separate two-week periods in order to compare food waste quantities before and after the implementation of educational and awareness-raising activities related to food waste prevention and the application of zero-waste principles.

During the initial monitoring period, the total input of food ingredients included 18 kg of meat, 3 kg of fish, 11 kg of vegetables, 3 kg of fruit, and 100 eggs, with each egg calculated as 60 grams, resulting in a total of 6 kg of eggs. During food preparation, 7.46 kg of meat waste, 1.4 kg of fish waste, 1.6 kg of egg waste, 4.76 kg of vegetable waste, and 1.1 kg of fruit waste were recorded. After meal consumption, an additional 3.24 kg of uneaten meat and 0.79 kg of vegetable waste were recorded. The results of the first monitoring period showed that the largest quantities of food waste were generated during the food preparation process itself, particularly in the case of ingredients requiring cleaning and processing.

During the second monitoring period, the implementation of activities was partially adjusted due to one public holiday, one unforeseen circumstance, and one study visit to local food producers, resulting in a slightly lower overall quantity of food ingredients used. The total input during the second monitoring phase included 22 kg of meat, 3 kg of fish used during the first week only, 100 eggs, 3 kg of fruit, and 12 kg of vegetables. During food preparation, 2.84 kg of meat waste, 0.4 kg of fish waste, 1.32 kg of egg waste, 0.72 kg of vegetable waste,



and 0.6 kg of fruit waste were recorded. After meal consumption, only 0.35 kg of uneaten meat and 0.25 kg of vegetable waste were recorded, while no additional waste was generated for the remaining food categories after serving.

The comparison of results between the two monitoring periods demonstrated a significant reduction in food waste quantities across almost all food categories. The quantity of meat waste generated during preparation was reduced from 7.46 kg to 2.84 kg, while fish waste decreased from 1.4 kg to 0.4 kg. Vegetable waste generated during preparation was reduced from 4.76 kg to 0.72 kg, while fruit waste decreased from 1.1 kg to 0.6 kg. A particularly significant result was observed in the quantity of food waste after meal consumption, where uneaten meat was reduced from 3.24 kg to 0.35 kg, while vegetable waste after serving decreased from 0.79 kg to 0.25 kg.

3.7.2. Strengths and Weaknesses Identified During the Pilot Action

The pilot action demonstrated several significant strengths during its implementation. One of the main strengths was the active involvement of students through practical activities carried out in a real educational environment, which enabled direct monitoring of food preparation, consumption, and food waste generation. The combination of monitoring activities and educational sessions contributed to increasing awareness among students and teachers regarding food waste prevention and sustainable food management. The pilot methodology was simple, practical, and easily applicable within the regular practical training activities of the school.



A particular strength of the pilot action was the high level of motivation among students to achieve the best possible results in reducing food waste. Following the educational activities, students demonstrated an increased level of awareness and actively participated in daily activities with the aim of reducing food waste to the lowest possible level. This level of engagement and motivation contributed to creating a positive and encouraging environment for the implementation of the pilot action.

At the same time, several areas for improvement were identified during the implementation process. Food waste quantities varied depending on daily menus and the types of food used during meal preparation, which may affect the comparability of results between monitoring periods. For example, certain types of fruit, such as berries, generate almost no waste, while others, such as bananas, naturally produce a larger amount of bio-waste due to their peels. In addition, a longer monitoring period and the involvement of a larger number of participants could provide more comprehensive and representative data. The pilot action also highlighted the importance of continuous awareness-raising activities and practical engagement of participants in achieving behavioural changes related to food waste prevention. The experiences and lessons learned during the implementation provide a useful basis for further improvement of the methodology and the possible implementation of similar activities in other educational institutions.



3.8. DISSEMINATION AND COMMUNICATION

3.8.1. Dissemination of Results

Dissemination and communication activities carried out within the pilot action were aimed at raising awareness of food waste and the importance of sustainable food management, in line with the objectives of the ECOFOODCYCLE project. The communication approach combined educational activities within the school environment with information activities targeting the local community and the wider public. During the implementation of the pilot action, the objectives, activities, and results of food waste monitoring were continuously presented to students, teachers, and the wider public. Special emphasis was placed on promoting a more responsible attitude towards food, the importance of reducing food waste, and the application of zero-waste principles in everyday activities.

As part of the pilot action, an e-cookbook based on food leftovers was also developed, representing one of the key communication and educational outputs of the activity. The e-cookbook promotes the creative use of food leftovers and practical ways to reduce food waste in everyday meal preparation. Due to the high level of interest and positive feedback received, it will continue to be disseminated after the completion of the pilot action. Communication activities also included social media posts and the dissemination of results through the ECOFOODCYCLE project communication channels, ensuring the visibility of the pilot action beyond the stakeholders directly involved. The dissemination activities demonstrated that simple and practical measures can contribute to raising awareness and promoting more sustainable eating habits in both educational settings and the wider community.



Table 20: Dissemination of results

Activity	Target audience	Date
Posters displayed at school premises	Students, teachers and parents	20.04.2026.
Website post https://www.zadra.hr/novosti/odr%C5%BEane-ecofoodcycle-pilot-aktivnosti-za-u%C4%8Denike-hu%C5%A1-zadar	General public	14.05.2026.
Social media post https://www.facebook.com/ZadraNova/posts/pfbid0XtGUy327aa5kCa23G27Wtyoteg3Pmgfqyb9MzFLiKXfvEA4BK6Kx3xxEaoSpBpiCl?rdid=E9zFTFsqHxdRc7j3#	General public	14.05.2026.

3.9. TRANSFERABILITY AND ENVIRONMENTAL BENEFITS IN LINE WITH ECOFOODCYCLE ONES

3.9.1. Transferability

The pilot action demonstrated strong potential for implementation and replication in other educational institutions and local communities due to its simple, practical, and easily applicable methodology. The activities implemented within the pilot action, including food waste monitoring, educational activities, awareness-raising actions, and the promotion of zero-waste principles, can be adapted to different educational and organisational contexts with limited financial and technical requirements.

One of the key strengths of the pilot action was the integration of practical food waste prevention measures into everyday educational activities, enabling the direct involvement of students and teachers and encouraging behavioural change. The monitoring methodology based on daily recording and weighing of food waste can be easily replicated in schools and other institutions involved in food preparation and serving activities.

The pilot action also demonstrated how awareness-raising and communication activities, supported by practical tools such as the e-cookbook based on food leftovers, can contribute to wider dissemination and long-term visibility of food waste prevention practices. The experiences and lessons learned during the implementation provide a useful basis for the further transfer and adaptation of similar approaches in other educational institutions and local communities.



3.9.2. Sustainability

The pilot action demonstrated that simple and practical food waste prevention measures can be sustainably integrated into everyday educational activities within vocational schools. The continuation of awareness-raising activities, practical exercises, and food waste monitoring within the regular practical training process can contribute to maintaining the positive behavioural changes achieved during the pilot implementation.

An important contribution to the long-term sustainability of the pilot action is the school kitchen environment, together with the practical tools and approaches used during the implementation of the pilot activities. The acquired knowledge, monitoring practices, and practical methods introduced through the project will continue to be integrated into everyday practical training activities and will support the education of future generations of students. In this way, the pilot action contributes not only to short-term behavioural changes, but also to the long-term strengthening of sustainable food management practices within the educational process.

Students will continue to apply the food waste reduction practices acquired during the pilot activities through their regular practical training activities. This includes the continued measurement of food waste, proper storage of food surpluses, more responsible meal planning and quantity management, as well as the application of more sustainable approaches in everyday food preparation. Excess biodegradable waste will continue to be disposed of in the composter located in the school garden, where students have also planted herbs, further promoting the understanding of a circular approach to food and bio-waste management.



The educational materials developed during the pilot implementation, including the e-cookbook based on food leftovers, also provide an additional basis for the continuation and further dissemination of project results. Communication and awareness-raising activities carried out during the pilot demonstrated the importance of continuous engagement of students, teachers, and the wider community in promoting more sustainable food consumption and preparation practices.

The experiences gained during the implementation confirmed that the successful continuation and transferability of similar activities depend on active cooperation between educational institutions, local stakeholders, and project partners, as well as on maintaining practical and easily applicable approaches adapted to everyday school activities.

3.9.3. Environmental impact

The pilot action contributed to raising awareness about the environmental impacts of food waste and demonstrated how simple behavioural and practical measures can contribute to reducing unnecessary food waste within an educational environment. Through the monitoring of food waste generated during practical training activities, students and teachers gained a better understanding of the quantities and types of food waste generated during food preparation and consumption processes.

The comparison of monitoring results between the two monitoring periods showed a significant reduction in food waste quantities, particularly regarding food leftovers after meal consumption. The reduction of avoidable food waste contributes directly to decreasing the quantity of biodegradable waste generated within the school environment and supports



more efficient use of food resources. The pilot action also promoted more sustainable food management practices, including more responsible meal planning, improved food storage, and the application of zero-waste principles during practical training activities. Additional environmental benefits were achieved through the separation and composting of biodegradable waste in the school garden composter, where students also planted herbs, further strengthening the understanding of circular approaches to food and bio-waste management. Beyond the direct reduction of food waste quantities, the pilot action contributed to strengthening environmental awareness among students and teachers regarding the broader environmental impacts of food waste, including unnecessary resource consumption, energy use, and greenhouse gas emissions associated with food production and disposal. The pilot demonstrated that educational institutions can play an important role in promoting sustainable food systems and encouraging environmentally responsible behaviour among future hospitality professionals.



3.10. CONCLUSIONS

The pilot action demonstrated that continuous food waste monitoring, combined with educational and practical activities, can lead to real behavioural changes among students and contribute to reducing food waste quantities within a school environment. The comparison of results between the two monitoring periods confirmed a significant reduction in food waste generated during food preparation and after meal consumption, indicating the positive impact of increased awareness and the active involvement of students in the implementation of the activities.

A particular value of the pilot action lies in the fact that food waste reduction measures were integrated into regular practical training activities, allowing students to gain concrete experience and develop habits that can be applied in their future professional work. Activities such as proper meal planning, more responsible use of food ingredients, biodegradable waste separation, and composting proved to be simple to implement while also being effective in reducing unnecessary food waste and promoting a more sustainable approach to food management.

The pilot action also demonstrated how educational institutions can play an important role in promoting sustainable food systems and a circular approach to food management. The developed educational materials, experiences gained during the implementation process, and established practices provide a solid basis for the continuation of activities and the transfer of similar approaches to other schools and local communities.



This section provides documentary and visual evidence supporting the implementation and assessment of the Pilot Action.

Figure 10: Equipment before and after

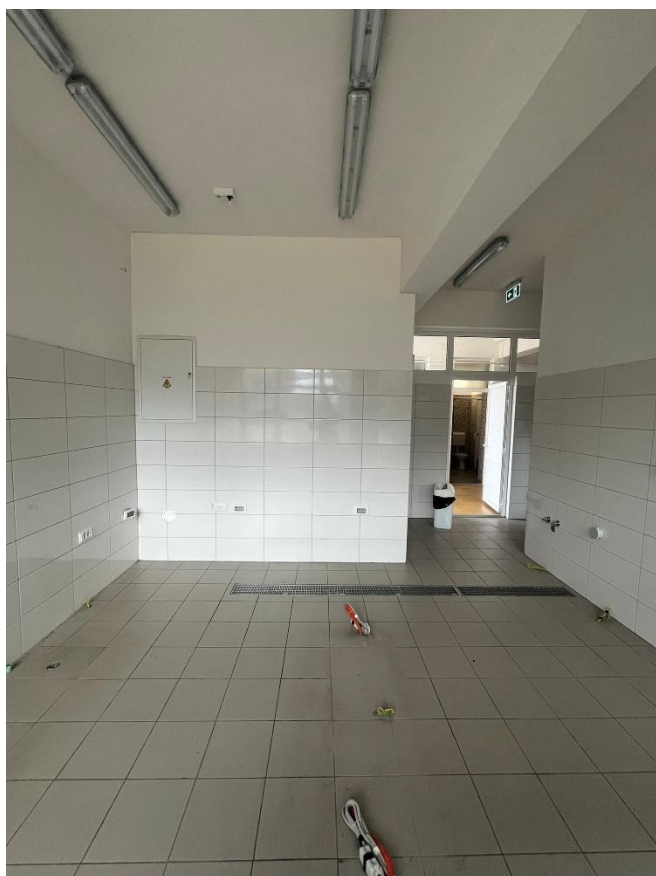






Figure 11: Food waste monitoring





Figure 12: Education and study visits - photos and signature lists







Figure 13: Attendance sheet

Zadar, 12. svibnja 2026. godine

EDUKACIJA - PILOT

r. br.	Ime i prezime	Institucija	Kontakt (e-mail)	Potpis	Privola za korištenje i dijeljenje podataka*		
					1) Kontaktiranje (✓/x)	2) Snimanje (✓/x)	3) Izvištavanje (✓/x)
1	MIRKO FOJATA	HTUŠ - ZADAR	nm.fojata@gmail.com	Mirko Fojata			
2	JOSIP VRSIĆ	HTUŠ - ZADAR	jurselbuss@gmail.com	Josip Vrsić			
3	Ajma Perić	HTUŠ - ZADAR		Ajma Perić			
4	LOJRO LISICA	-/-		Lojro Lisica			
5	Petar Basta	HTUŠ		Petar Basta			
6	LUBA BOTUŠA	HTUŠ		Luba Botuša			
7	Mirko Čerina	HTUŠ		Mirko Čerina			
8	Šimun Kuzovčić	HTUŠ		Šimun Kuzovčić			

* Sukladno Općoj uredbi o zaštiti podataka, stavljanjem kvačice dajete svoju suglasnost za:

[1] Primanje obavijesti o aktivnostima i narednim događajima projekta ECOFOODCYCLE Reducing Food Waste and its Environmental Footprint through Sustainable Food Systems putem e-pošte.

[2] Snimanje fotografija i/ili videa za potrebe izvještavanja o događaju na webu.

[3] Korištenje i dijeljenje vaših podataka za potrebe slanja izvještaja o provedbi projekta ECOFOODCYCLE Reducing Food Waste and its Environmental Footprint through Sustainable Food Systems. Potpisne liste, na temelju projektnog ugovora, služe kao dokaz odrađenih aktivnosti i pomažu nam da dokažemo da se aktivnost sufinancirana od strane Europske unije navedenog projekta održala.

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					1) Kontaktiranje (✓/x)	2) Snimanje (✓/x)	3) Izvištavanje (✓/x)
9	Tesa Dobrijević	HTUŠ		Tesa Dobrijević			
10	Žana Goranovac	HTUŠ		Žana Goranovac			
11	Andela Ousek	HTUŠ		Andela Ousek			
12	Antonija Dragaš	HTUŠ		Antonija Dragaš			
13	Aurora Veronika Čirjak	HTUŠ		Aurora Čirjak			
14	Ivana Bulić	HTUŠ		Ivana Bulić			
15	Neah Džoković	HTUŠ		Neah Džoković			
16	Viktoria Rončević	HTUŠ		Viktoria Rončević			
17	Marija Besan	HTUŠ		Marija Besan			

* Sukladno Općoj uredbi o zaštiti podataka, stavljanjem kvačice dajete svoju suglasnost za:

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					1) Kontaktiranje (✓/x)	2) Snimanje (✓/x)	3) Izvješćivanje (✓/x)
18	Dunja Popović	HTUŠ		Dunja Popović			
19	Anajla Šakinović	HTUŠ		Anajla Šakinović			
20	Lana Horic Bralca	HTUŠ		Lana Horic Bralca			
21	Matej Starić	HTUŠ		Matej Starić			
22	Danija Žilčić	HTUŠ		Danija Žilčić			
23	ROBERTO PINTO	HTUŠ		ROBERTO PINTO			

* Sukladno Općoj uredbi o zaštiti podataka, stavljanjem kvačice dajete svoju suglasnost za:

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[2] Snimanje fotografija i/ili videa za potrebe izvješćivanja o događaju na webu.

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ZADAR, 14. 5. 2026.

STUDY VISIT - CROATIA, OPĆINA BULIČ

r. br.	Ime i prezime	Potpis	Privola za korištenje i dijeljenje podataka*		
			1) Kontaktiranje (✓/x)	2) Snimanje (✓/x)	3) Izvješćivanje (✓/x)
	Marcela Šumski	Marcela Šumski			
	Antea Tomić	Antea Tomić			
	Marijon Čerina	Marijon Čerina			
	Natali Stipčević	Natali Stipčević			
	Marinela Marjanović	Marinela Marjanović			
	Marcela Karamarko	Marcela Karamarko			
	Ella Vukrić	Ella Vukrić			
	Josipa Prekpalaj	Josipa Prekpalaj			

* Sukladno Općoj uredbi o zaštiti podataka, stavljanjem kvačice dajete svoju suglasnost za:

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[2] Snimanje fotografija i/ili videa za potrebe izvješćivanja o događaju na webu.

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Za povlačenje pristanka korištenja Vaših osobnih podataka, obratite maria.kasalo@zadra.hr

r. br.	Ime i prezime	Potpis	Privola za korištenje i dijeljenje podataka*		
			1) Kontaktiranje (✓ / x)	2) Snimanje (✓ / x)	3) Izvještavanje (✓ / x)
	Matiya Sorica				
	Josip Kolodera	Josip			
	Grgo Lisica	Grgo			
	Borna Bilek	Borna			
	Mia Vlaskić	Mia			
	Lana Misković	Lana			
	Željko Novak	Željko			
	Milan Nekić	Milan			

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[1] Primanje obavijesti o aktivnostima i narednim događajima projekta ECOFOODCYCLE Reducing Food Waste and its Environmental Footprint through Sustainable Food Systems putem e-pošte.

[2] Snimanje fotografija i/ili videa za potrebe izvještavanja o događaju na webu.

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r. br.	Ime i prezime	Potpis	Privola za korištenje i dijeljenje podataka*		
			1) Kontaktiranje (✓ / x)	2) Snimanje (✓ / x)	3) Izvještavanje (✓ / x)
	Marta Blotić	Marta			
	Željko Novak	Željko			
	Antun Igrija	Antun			
	Frane Medrić	Frane			
	Jakov Šestan	Jakov			
	MARIN ČAČIĆ	Marin			
	Nikolina David	Nikolina			
	Luna Jurić	Luna			

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[2] Snimanje fotografija i/ili videa za potrebe izvještavanja o događaju na webu.

[3] Korištenje i dijeljenje vaših podataka za potrebe slanja izvještaja o provedbi projekta ECOFOODCYCLE Reducing Food Waste and its Environmental Footprint through Sustainable Food Systems. Potpisne liste, na temelju projektnog ugovora, služe kao dokaz odrađenih aktivnosti i pomažu nam da dokažemo da se aktivnost sufinancirana od strane Europske unije navedenog projekta održala.

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r. br.	Ime i prezime	Potpis	Privola za korištenje i dijeljenje podataka*		
			1) Kontaktiranje (✓ / x)	2) Snimanje (✓ / x)	3) Izvještavanje (✓ / x)
	FLIP STANJIC		✓	✓	✓
	RENATO KRAJČEV		✓	✓	✓

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[1] Primanje obavijesti o aktivnostima i narednim događajima projekta ECOFOODCYCLE Reducing Food Waste and Its Environmental Footprint through Sustainable Food Systems putem e-pošte.

[2] Snimanje fotografija i/ili videa za potrebe izvještavanja o doprincu na webu.

[3] Korištenje i dijeljenje vaših podataka za potrebe slanja izvještaja o provedbi projekta ECOFOODCYCLE Reducing Food Waste and Its Environmental Footprint through Sustainable Food Systems. Potpisne liste, na temelju projektnog ugovora, služe kao dokaz odrađenih aktivnosti i pomažu nam da dokažemo da se aktivnost sufinancirana od strane Europske unije navedenog projekta održala.

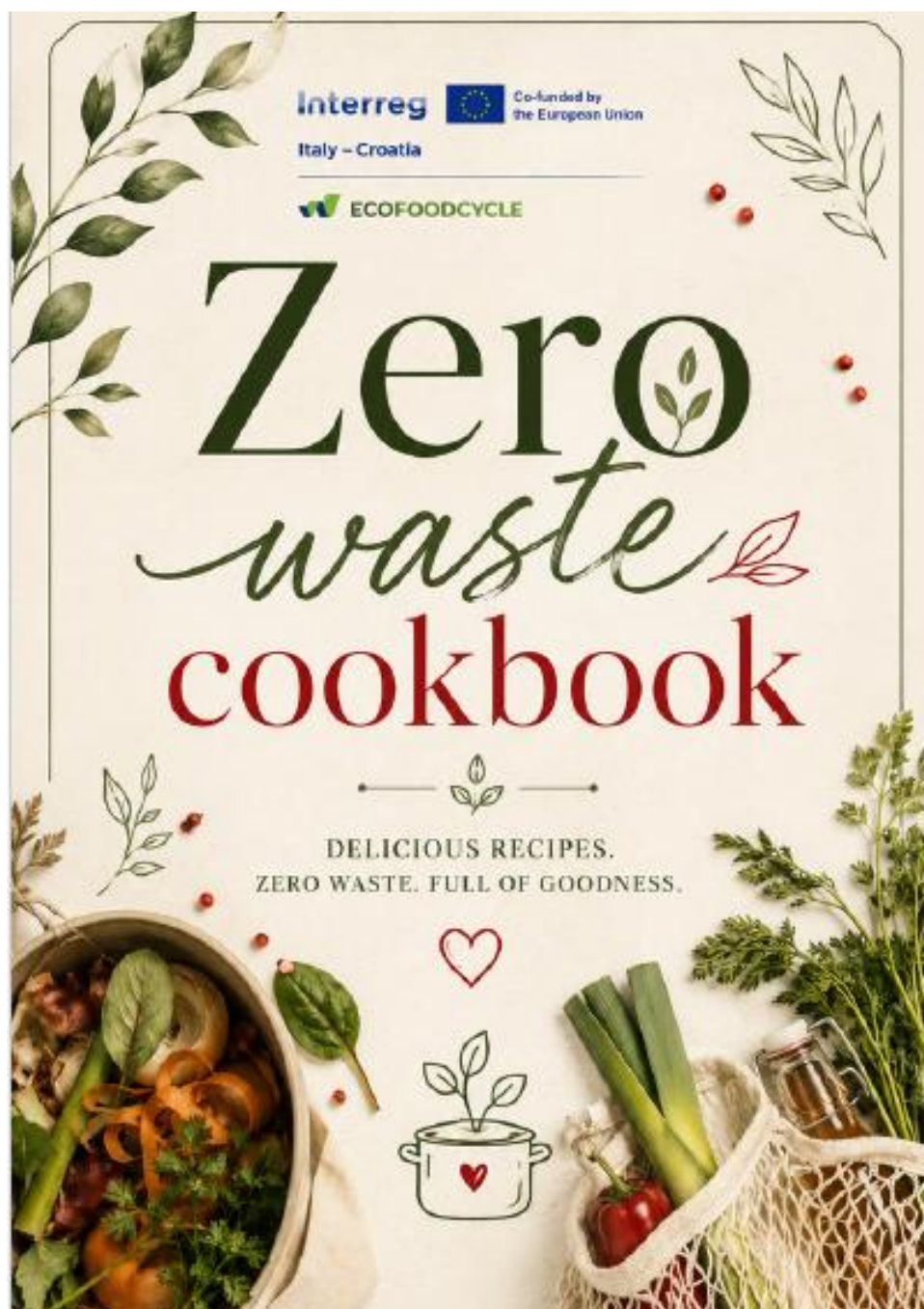
U svakome trenutku možete povući svoj pristanak za sve navedene svrhe upotrebe Vaših osobnih podataka, kao i njihovo brisanje ili izmjenu.

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Figure 14:Zero Waste - COOKBOOK





See the full CookBook in ANNEX I



4. SMALL SCALE PILOT ACTION n.4 – PP4, University of Rijeka, Faculty of Economics and Business (EFRI)

4.1. PILOT ACTION OVERVIEW

Name of the Pilot Action

Pilot project to reduce food waste at “Vladimir Gortan” Elementary School

Partner & Location

- **Partner (PP):** University of Rijeka, Faculty of Economics and Business – PP4
- **Location of the pilot action:** “Vladimir Gortan” Elementary School

Implementation Period

- **Start date:** 19.11.2025.
- **End date:** 05.12.2025.

4.2. DESCRIPTION OF THE PILOT ACTION

4.2.1. Background and Relevance

The pilot was implemented within the ECOFOODCYCLE project to quantify food waste generated during school meals (snack and lunch) and to reduce the amount of food wasted through educational activities and small changes in student behavior. Furthermore, as part of the project, the school was equipped with a professional food waste grinder. As a result, residual food waste generated after lunch is no longer disposed of as solid waste but is treated through the local wastewater management system, excluding larger bones. The



action responds to the need for practical, measurable approaches in educational institutions and supports the project objective of reducing food waste and its environmental footprint.

4.1.Objectives of the Pilot Action

- Establish a baseline measure of the amount of food wasted during school meals.
- Raise awareness among students about the importance of reducing food waste.
- Develop simple and sustainable actions to reduce food waste in schools.
- Encourage children to behave responsibly towards food through practical and educational activities.
- Empower pupils to independently monitor, analyze and present the results of the project.



4.3. CHARACTERISTICS OF THE PILOT ACTION

Table 21: Pilot action characteristics

Element	Description
Location of the pilot action	“Vladimir Gortan” Elementary School (extended stay classes 2.a and 2.b)
Specific objective	Reduce food waste from school meals and raise awareness among pupils through education
Type of action	Small-scale pilot action in an educational setting: baseline weighing + educational workshop
Stakeholders involved	School management and teachers (2), pupils (20 children), school kitchen/canteen staff (2), faculty members of the University of Rijeka Faculty of Economics and Business (3)
Implementation period	19.11.2025. – 05.12.2025.

4.4. STAKEHOLDER INVOLVEMENT

4.4.1. Stakeholders Involved

The pilot action involved various diverse stakeholders with clearly described roles and showed high involvement during the implementation process. The management of the "Vladimir Gortan" Elementary School made it possible to implement the pilot action, which consisted of coordinating all logistical aspects and ensuring access to the school facilities. The extended stay teacher played a significant role in executing the daily activities of the pilot, overseeing the measurement process, and assisting pupils during the implementation of the activities. There were 22 pupils, who actively took part in the pilot action as citizens/consumers, gathering information, participating in the workshop, and creating posters. The members of the school kitchen/canteen team, playing the role of food service providers, assisted in the implementation of the pilot, where they were in charge of weighing lunch plates from the school. Lastly, the Faculty of Economics and Business team, consisting of members such as Assoc. Prof. Ana Bobinac, Prof. Nenad Vretenar, and Nika Stipetić-Kalinić, MEcon, took the role of the research institution, preparing the pilot action, offering the lecture and workshop, and monitoring, analyzing, and reporting.



Table 22: Overview of stakeholders and their involvement in the pilot action

Stakeholder	Number of stakeholders	Category	Role in the pilot action
"Vladimir Gortan" Elementary School (school management)	1	Schools & educational institutions	Enabled implementation, coordinated logistics and gave access
Extended stay teacher	1	Schools & educational institutions	Supervised daily measurements and supported pupils
Pupils	22	Citizens/consumers	Collected/recorded data, participated in workshop, created posters, tested interventions
School kitchen/canteen staff	2	Food service providers	Weighed representative lunch plates, supported measurement procedures
Faculty of Economics and Business (assoc. prof. Ana Bobinac, prof. Nenad Vretenar, Nika Stipetić-Kalinić, MEcon)	3	Research institution/university	Designed pilot, delivered lecture/workshop, supported monitoring, analyzed results and reporting.

4.5. ACTIVITIES IMPLEMENTED

4.5.1. Description of Activities

The pilot comprised: (i) baseline quantification of food waste generated during snack and lunch in the school canteen; (ii) an educational session (short lecture, facilitated discussion, and a World Cafe-style workshop) culminating in pupil-designed posters; (iii) a behavioural nudge in the canteen (signage encouraging pupils to take fruit only if they intend to consume it); and (iv) a fruit valorisation activity in which uneaten fruit was transformed into freshly prepared juice/smoothies, followed by continued monitoring. In addition, (v) the school was equipped with a professional food-waste grinder; consequently, residual lunch waste was diverted from the solid-waste stream and managed via the local wastewater system in accordance with applicable municipal procedures (excluding larger bones).

4.5.2. Timeline of Main Activities

Table 3 shows the timeline of the pilot action, outlining the key phases from baseline measurement and the school workshop to the intervention, post-intervention monitoring, fruit valorization activities, and the final wrap-up day.



Table 23: Timeline of the pilot action

Period	Main activities
19.-27.11.2025.	Baseline: daily measurement and recording of lunch waste (kg) and snack leftovers (units)
28.11.2025.	Workshop at school (lecture by prof. Nenad Vretenar, Ana Bobinac, Nika Stipetić Kalinić, interactive discussion, poster creation, World Cafe workshop for pupils) and creation of posters with support from all three Faculty team members.
1.12.2025.	Intervention in the canteen (sign: "Take fruit only if you will eat it all!") and continued monitoring of uneaten fruit
29.11-5.12.2025.	Post-intervention measurement: daily measurement and recording of lunch waste (kg) and snack leftovers (units). Fruit valorization: preparation of smoothie/juice from uneaten fruit, tracking number of pupils choosing juice/smoothie
5.12.2025.	Final monitoring day and wrap-up with teacher/pupils (planned follow-up dissemination within school)

Table 24: Overview of objectives, indicators and measurement of the pilot action



Objective	Indicator	Measurement method
Reduce food waste - school lunch	- % of uneaten food per lunch (kg wasted / kg served) - % of uneaten food generated after lunch no longer disposed of as solid waste but treated through wastewater system - Average food waste per student (g/day)	Daily weighing of representative meal weight and collected leftovers (kg)
Reduce food waste - school snacks	% of uneaten fruit (units uneaten / units offered)	Daily counting of fruit offered and fruit left uneaten (units)
Raise awareness and engagement	Number of participating pupils, teachers and other staff	Attendance/participation
Promote valorization of uneaten fruit	Number of pupils choosing juice/smoothie over half-eating fruit	Counting pupils choosing juice/smoothie during valorization activity days

4.6. MONITORING AND PROGRESS

4.6.1. Monitoring Approach

Data collection tools include daily monitoring tables for lunch (kg of food served vs. kg discarded) and snack (units of fruit offered vs. uneaten and notes on redistribution/keeping food). Measurements were taken daily during baseline and intervention weeks. Teacher and pupils were responsible for snack measurement. Kitchen/canteen staff, as well as pupils/teacher were responsible for lunch food waste measurement. Faculty of Economics and Business team provided methodology and supervision.

4.6.2. Objectives, Indicators and Measurement Methods

This section presents the monitoring framework, including the objectives, indicators, and measurement methods adopted for the pilot, as well as the observed progress against indicators (Table 25).

Table 24 provides an overview of the main objectives of the pilot action, the indicators used to monitor progress, and the corresponding measurement methods. The table covers objectives related to reducing food waste from school lunches and snacks, raising awareness and engagement, and promoting the valorization of uneaten fruit. For each objective, specific quantitative indicators are defined (e.g. shares of uneaten food, average waste per student, participation numbers), along with practical measurement approaches such as daily weighing, counting, and attendance tracking, ensuring a clear and consistent monitoring framework for the pilot.

4.6.3. Progress Against Indicators

Table 25 shows an overview of progress against key indicators of the pilot action, comparing baseline values, targets, and current results, together with a brief status assessment. The results and their implications are discussed in more detail in the following chapter.

Table 25: Progress against indicators

Indicator	Baseline	Target	Current value	Status
% of uneaten food per lunch	27.27 % (total 12.6 kg wasted / 46.2 kg served)	Reduction vs. baseline	19.71 % (total 6.8 kg wasted / 34.5 kg served)	Improved
% of uneaten fruit at snack	20.69 % (30 uneaten / 145 offered)	Reduction vs. baseline	17.65% (18 uneaten / 102 offered; note: part valorized into juice/smoothie)	Improved
Number of participants	22 pupils	Engage pupils	22 pupils participated in lecture, discussion and poster activity	Achieved
Pupils choosing juice/smoothie	NA	Pilot valorization	Recorded: 17 pupils (smoothie day) and 20 pupils (juice day)	Achieved (data to be consolidated)

4.7. RESULTS AND PRELIMINARY OUTCOMES



4.7.1. Main Results Achieved

The main results are summarised in Table 5. Lunch food waste decreased from 27.27% during the baseline period (12.6 kg wasted out of 46.2 kg served) to 19.71% in the post-intervention period (6.8 kg wasted out of 34.5 kg served). For snacks, the proportion of uneaten fruit declined from 20.69% (30/145 units) to 17.65% (18/102 units); on juice/smoothie days, a share of surplus fruit was valorised into beverages, thereby preventing disposal and reinforcing reuse messages. Finally, notes indicate that some pupils shared food with classmates or saved items for later, suggesting informal redistribution behaviors. On some days, pupils requested additional servings, which may indicate improved meal acceptance.

4.7.2. Additional quantitative analysis of lunch food waste reduction

Within the small-scale pilot project implemented at “Vladimir Gortan” Elementary School, food waste data were systematically collected for a class group of 22 pupils over two monitoring phases: seven consecutive school days before the intervention (baseline) and six school days after the intervention. Measurements referred to lunch as the main school meal. During the baseline monitoring period, a total of 46.2 kg of food was served, corresponding to an average of 6.6 kg per day (Table 26). Daily quantities varied between 3.6 kg and 8.9 kg, depending on menu composition and kitchen standards. The total amount of food waste generated from plates during this period was 12.6 kg, or 1.8 kg per day on average. Daily food waste ranged between 1.6 and 1.7 kg on most days, with one peak day reaching 2.7 kg. When expressed in relative terms, the average share of food waste amounted to 27%, with daily values ranging from 18% to 39%.



Table 26: Lunch food waste monitoring results – baseline period

Monitoring day	Total food served (kg)	Food waste collected from plates (kg)	Share of food waste (%)	Number of pupils present	Average food waste per pupil (kg)
1	5,5	1,6	29%	21	0,076
2	7,4	1,7	23%	21	0,081
3	3,6	1,6	44%	21	0,076
4	6,7	1,7	25%	18	0,094
5	7,1	1,7	24%	20	0,085
6	7	2,7	39%	22	0,123
7	8,9	1,6	18%	21	0,076
Sum	46,2	12,6	27%		
Average	6,6	1,8			0,087

Following the educational and behavioural intervention, a total of 34.5 kg of food was served over six monitored days, corresponding to an average of 5.75 kg per day (Table 27). Daily served quantities ranged between 4.9 kg and 7.1 kg, again reflecting menu characteristics. The total measured food waste after lunch amounted to 6.8 kg, or an average of 1.13 kg per day. Daily waste quantities varied between 0.45 kg and 1.5 kg and cannot be attributed solely to pupils' food preferences. In relative terms, the average proportion of wasted food during this period decreased to approximately 20%, with daily values ranging from 8% to 29%.

Table 27: Lunch food waste monitoring results – post-intervention period

Monitoring day	Total food served (kg)	Food waste collected from plates (kg)	Share of food waste (%)	Number of pupils present	Average food waste per pupil (kg)
1	5,8	0,45	8%	21	0,021
2	6,6	0,95	14%	20	0,048
3	7,1	1,3	18%	22	0,059
4	5,2	1,5	29%	22	0,068
5	4,9	1,4	29%	22	0,064
6	4,9	1,2	24%	19	0,063
Sum	34,5	6,8	20%		
Average	5,75	1,133333			0,054

As pupil attendance varied slightly due to illness or other absences, food waste was additionally analysed on a per-student basis to ensure comparability. During the baseline period, average food waste amounted to 87.4 grams per pupil. After the intervention, this figure decreased to an average of 53.8 grams per pupil, representing a reduction of 33.6 grams per pupil, or 38.4%. These results indicate a substantial improvement in food consumption behaviour following the intervention.

If the observed reduction in food waste were extrapolated to all eight lower-grade classes at the school (approximately 160 pupils), assuming similar effects, the estimated daily reduction in food waste from school lunches alone would amount to approximately 5.37 kg.

In addition to lunch, food waste reduction measures were also addressed for the secondary school meal (snack). Snacks typically consist of a single piece of fruit or a small bakery product (e.g. muffin or cheese pastry). As snacks are distributed towards the end of the school day and pupils are allowed to take uneaten items home, snack leftovers were not weighed. However, in order to further prevent potential food waste in this meal category, the school was equipped with a professional juice extractor as part of the pilot action. Pupils were introduced to the possibility of transforming uneaten fruit into freshly prepared juice or smoothies. This activity had a dual purpose: it demonstrated the continued usability of surplus food and served as an educational intervention on food valorisation and waste prevention. In addition to its educational value, the activity provided pupils with access to natural and healthy fruit beverages at no additional cost for the school, reinforcing positive attitudes towards food reuse and sustainable consumption practices.

Finally, the school was equipped with a professional food-waste grinder. This equipment enables selected residual food waste from lunch to be diverted from the solid-waste stream and processed through the local wastewater management system (excluding larger bones), subject to municipal guidance and wastewater-treatment requirements. From an environmental management perspective, this intervention primarily reduces the quantity of solid waste requiring collection and disposal; however, it should be accompanied by basic checks regarding operational capacity, compliance, and any monitoring requirements set by the competent local authorities. On the basis of recorded post-intervention data, approximately 6 kg/week of residual lunch waste was managed through this route during the monitoring period, contributing to a marked reduction in solid food waste generated by the school.



4.7.3. Strengths and Weaknesses Identified During the Pilot Action

Strengths: (i) simple monitoring protocol feasible for school setting; (ii) strong pupil engagement through interactive discussion and creative posters; (iii) combination of nudging and valorization activities; (iv) evidence of reduced lunch waste rate.

Weaknesses/areas for improvement: (i) data gaps and inconsistencies in snack monitoring on some days (missing values); (ii) need to standardize recording of pupil attendance and fruit outcomes (e.g. uneaten vs. transformed to juice) to enable clearer quantification; (iii) extend monitoring to additional classes/longer period to reduce menu-day variability.



4.8. DISSEMINATION AND COMMUNICATION

Table 28: Description of communication and dissemination activities linked to the pilot action.

Activity	Target audience	Date
Posters displayed in school	School community	28.11.2025.
Social media post on Facebook (https://www.facebook.com/share/p/1TqtiE4ByY/?mibextid=wwXlfr)	General public	8.12.2025.
Social media post on LinkedIn (https://www.linkedin.com/posts/ekonomski-fakultet-sveu%C4%8Dili%C5%A1ta-urijeci_ecofoodcycle-foodwaste-sustainability-activity-7403764602314039296-0zaU?utm_source=share&utm_medium=member_desktop&rcm=ACoAACkAvvEBklzrCs6eUnZjA7MgcqzeGfli1dl)	General public	8.12.2025.

Table 28 summarizes the communication and dissemination activities linked to the pilot action, including on-site and online outreach. In addition to posters displayed in the school, two social media posts were published to reach the wider public. The Facebook post



achieved 865 views, reached 475 viewers, and generated 10 interactions (9 likes and reactions and 1 share). The LinkedIn post recorded 1,091 impressions, reached 629 members, resulted in 4 profile views, and generated 25 reactions and 1 repost.

4.9. TRANSFERABILITY AND ENVIRONMENTAL BENEFITS IN LINE WITH ECOFOODCYCLE ONES

4.9.1. Transferability

The intervention package is transferable to other primary schools and similar educational settings because it combines (a) a simple, low-burden measurement protocol, (b) short, age-appropriate educational activities, and (c) behavioural cues embedded in routine meal provision. Replication requires only basic weighing/counting tools, a standardised recording sheet, and coordination between teaching staff and canteen personnel. Where available, partnerships with local universities or NGOs can strengthen methodological quality and support data interpretation.

4.9.2. Sustainability and enabling conditions

To sustain impacts beyond the pilot period, schools should integrate food-waste prevention into regular curricula (e.g., environmental education, home economics, or civic education) and institutional routines. Recommended measures include: periodic 'measurement weeks' (e.g., once per term), continued use of canteen nudges, and feedback loops that share results with pupils and staff. Fruit valorisation activities (juice/smoothies) can be implemented periodically as a supervised educational exercise, provided that food-safety protocols, allergen management, and school policies are observed. Where food-waste grinders are



used, schools should document operating procedures and ensure alignment with local wastewater regulations and the technical requirements of the receiving system.

4.9.3. Environmental benefits and assessment approach

Food-waste prevention yields environmental benefits through avoided upstream resource use (energy, water, land) and reduced downstream treatment burdens. For this pilot, the most direct, evidenced benefit is the observed reduction in avoidable lunch waste (38.4% reduction in average waste per pupil, from 87.4 g to 53.8 g). To quantify climate benefits, future reporting can convert avoided food waste (kg) into greenhouse-gas savings using recognised conversion factors (e.g., kg CO₂e per kg of mixed food waste) and transparently stated assumptions about the food mix and counterfactual waste management route. In addition, diverting residual waste from the solid-waste stream (via the grinder) may reduce vehicle collection frequency and associated emissions, although this should be assessed alongside any incremental energy use and potential impacts on wastewater treatment. A pragmatic approach for subsequent implementation phases is to: (i) validate and harmonise datasets across measurement days; (ii) report food-waste intensity (g/pupil/day) as the primary indicator; (iii) include uncertainty ranges (menu variability, attendance); and (iv) document any operational parameters relevant to waste handling (solid waste vs. wastewater).



4.10. CONCLUSIONS

Overall, the pilot demonstrates that measurable reductions in school food waste can be achieved within a short timeframe by coupling baseline monitoring with targeted, child-centred education and low-cost behavioural interventions. The post-intervention period shows a consistent decrease in lunch waste rates and a modest reduction in uneaten fruit at snack time, supported by qualitative observations of sharing and improved acceptance. For future roll-out, greater standardisation of data recording (attendance, snack outcomes, and treatment pathways for surplus food) is required to strengthen attribution and enable robust comparisons across menus, classes, and schools. The pilot provides a replicable framework that can be scaled within the school and to other institutions, provided that clear operational protocols and governance arrangements are in place.

Take-home messages

- Baseline measurement can be implemented in schools with minimal disruption and provides an evidence base for targeted action.
- Combining education with small behavioural cues (e.g., canteen signage) can reduce avoidable plate waste within weeks.
- Reporting waste intensity (g per pupil per day) improves comparability across days with variable attendance and menus.
- Fruit valorisation activities can reinforce prevention and reuse messages, but require clear food-safety and supervision protocols.
- Treatment or diversion technologies (e.g., grinders) should be accompanied by local regulatory compliance checks and transparent environmental accounting.



This section provides documentary and visual evidence supporting the implementation and assessment of the Pilot Action.







5. SMALL SCALE PILOT ACTION n.5 – PP6, ECAMRICERT SRL (ECAMRICERT)

5.1. PILOT ACTION OVERVIEW

Name of the Pilot Action:

Ecofood Waste Truck

Partner & Location

- **Partner (PP):** ECAMRICERT S.R.L. – PP6
- **Location of the pilot action:** Institute Luzzati Luigi, Via Salboro, 2A - Padua

Implementation Period

- **Start date:** 01/09/2026
- **End date:** 18/06/2026

5.2. DESCRIPTION OF THE PILOT ACTION

5.2.1. Background and Relevance

The implementation of the ECOFOODCYCLE project's pilot actions stems from the urgent need to reduce food waste and mitigate its environmental impact, with a specific focus on lowering greenhouse gas emissions. The initiative's objectives are to raise awareness and strengthen food waste management and prevention capacities among key actors. Specifically, this pilot action aims to promote food waste reduction and educate primary school children on food waste reduction topics, focusing directly on the school environment as a primary hub for daily food consumption. These groups are actively involved through



practical, engaging, and measurable approaches, such as classroom educational activities, field trips, and targeted monitoring and reduction strategies inside school canteens. Ultimately, these targeted efforts contribute to ensuring a coordinated and integrated approach to tackling food waste on a large scale.

5.2.2. Objectives of the Pilot Action

A primary focus of the pilot is to help students understand the value of food, the labor and resources required for its production, and the connection between agriculture, climate change, and food waste reduction, while highlighting the link between the SDGs and food waste. The action also aims to provide an understanding of the food supply chain, including its origin, the producers, and the stages food undergoes before reaching the plate, to demonstrate the importance of anti-waste recipes. Furthermore, it seeks to recognize the value of natural resources such as water, soil, energy, and time, emphasizing that wasting food equates to wasting both labor and the Earth's resources.

In line with these principles, a key operational objective is to achieve a concrete reduction in food waste within school canteens. This is pursued by encouraging responsible consumption habits during lunch breaks, and actively involving students in the process. Finally, the project promotes responsible behaviors, including avoiding food waste and valuing leftovers. Through these targeted, on-the-ground efforts, the pilot action directly contributes to one of the overall project's ultimate goals: developing a robust and long-lasting approach to food sustainability.

5.3. CHARACTERISTICS OF THE PILOT ACTION

Table 29: Pilot Action Overview



Element	Description
Location of the pilot action	Institute Luzzati Luigi, Via Salboro, 2A - Padua
Specific objective	Reduce food waste in school canteen
Type of action	On-site observation of students' eating habits and precise quantification of food waste within the school canteen setting, carried out through awareness-raising activities
Stakeholders involved	Primary school students (from 1st to 5th grade), School staff Municipality of Padua
Implementation period	01/09/2025 - 18/05/2026

5.4. STAKEHOLDER INVOLVEMENT

Table 30: Stakeholder Engagement & Role Matrix

Stakeholder	Category	Role in the pilot action
Pupils	Consumers & educational groups	Actively participated in the educational training sessions and food waste monitoring activities within the canteen.
L. Luzzatti Primary School Staff (Teachers & School Personnel)	Schools & educational institutions	Coordinated and facilitated the on-site activities, supporting the implementation of the project within the school schedule.
Fondazione Città della Speranza	Research institutions and universities	Provided the mobile "truck" laboratory used as the interactive venue for the educational activities.
Municipality of Padua: - Department for Educational and School Policies - School Services Sector - School Catering and Fees Unit / Dietitians Office - European Programs and Projects Central Office - Urban Authority	Government & Policy Maker	Provided institutional support, serving as the key liaison between the project partners and the school, and endorsed the canteen monitoring framework.

5.5. ACTIVITIES IMPLEMENTED

5.5.1. Description of Activities

The pilot action followed a structured, multi-phase methodology designed to seamlessly combine field data collection, interactive education, practical experiences, and public engagement. The initiative began with an on-site baseline monitoring phase within the school canteen, where observers used standardized forms to track students' food choices and consumption patterns while precisely quantifying food waste. This initial data collection served a dual purpose, establishing a clear starting point for both quantitative waste metrics and qualitative eating habits during school lunch breaks.

Building directly upon the insights gained from the canteen monitoring, the project transitioned into the classroom on February 9th and 12th, 2026, with two interconnected interactive workshops. The first was the Sustainable Development Goals (SDGs) Laboratory, where children explored the UN Agenda 2030 through a highly engaging team game. Played on a large, 63-space interactive board, the pupils answered specialized quiz cards focused on Zero Hunger (SDG 2), Responsible Consumption and Production (SDG 12), and Climate Action (SDG 13), driving home the core message that wasting food equates to wasting the planet's precious water and resources.

Immediately following this, the students took part in the "Create Your Anti-Waste Recipe" Laboratory. Using the EcoFood Waste Truck as a symbolic representation of a home pantry, the children were divided into thematic teams to design healthy, creative dishes. To simulate real-world sustainability challenges, ingredients like cod, tuna, or seasonal vegetables—frequently identified as left over in canteens—were presented as "leftovers from the



previous night's dinner." Adhering to specific kitchen rules, each group integrated these primary ingredients with other food items to build a complete dish, resulting in a creative menu accompanied by an original narrative designed to give new value to items that usually end up as waste.

To connect urban consumption with agricultural production, the program continued on February 26th, 2026, with an educational field trip to the "Ragazzi a Quattro Zampe" farm. This experience focused heavily on circular economy principles, demonstrating seasonal product cycles and showing how food waste unfit for human consumption can be effectively repurposed as animal feed. During a hands-on workshop, the students actively recovered pumpkin seeds for roasting or planting, which reinforced their understanding of the intrinsic value of every part of an ingredient and highlighted the massive amount of natural resources lost when food is discarded.

To robustly evaluate the effectiveness of this entire educational model, a final impact assessment was conducted by repeating the monitoring process inside the school canteen. By comparing the data collected before and after the classroom interventions, the project precisely measured tangible reductions in the quantity of food wasted in the canteen, as well as positive behavioral shifts in the students' food choices and general attitudes during lunch breaks. The entire cycle formally concluded with a final feedback session, where the journey was celebrated by handing over a physical copy of the custom Anti-Waste Recipe Book to each pupil, compiled directly from the creative recipes they had designed during the February workshops.



5.5.2. Timeline of Main Activities

Table 31: Small-Scale Pilot action timeline

Period	Main activities
September 2025 – January 2026	Preparatory Phase (Planning, school coordination, and materials setup)
29-30/01/2026 05-06/02/2026	Initial Canteen Monitoring – Pre-intervention (Food waste & eating habits baseline)
09/02/2026	Act Interactive Workshops (SDGs & Anti-Waste Recipe Laboratories) - 1st, 3rd, and 5th grades
12/02/2026	Interactive Workshops (SDGs & Anti-Waste Recipe Laboratories) - 2nd and 4th grades
26/02/2026	"Ragazzi a 4 Zampe" Educational Field Trip
26-27/02/2026 05-06/03/2026	Final Canteen Monitoring – Post-intervention (Food waste & eating habits Impact assessment)
26/03/2026	International Public Event at Torre Anziani (Municipality of Padua) – Pupils' song performance
18/05/2026	Closing Handover – Delivery of the custom Anti-Waste Recipe Books to the students

5.6. MONITORING AND PROGRESS

5.6.1. Monitoring Approach

The pilot action includes the monitoring of both eating habits and food waste of 60 pupils. This monitoring was conducted for four days before the educational activities and was carried out again for four days afterwards. The monitoring of eating habits within the school canteen aims to evaluate any behavioral changes that can be linked to a potential increase or decrease in food waste. The observers (teachers and employees of ECAMRICERT S.R.L. – PP6) used a standardised paper-based tool, known as the ‘Dietary Habits Monitoring Form’, which guided the data collection process through a series of sequential stages. First, the daily menu was recorded, specifying the dishes served for the first course, the main course, the side dish, fruit or dessert, and bread. For example, a menu might include: fusilli with tomato sauce, halibut fish cakes or flan, julienned carrots and a 100% fruit smoothie.

The observers then monitored the specific food choices made by the pupils, who were identified anonymously by a sequential number. For each child, the observer ticked off which components of the meal had been selected and noted whether a smaller portion had been requested, indicating the corresponding percentage. The methodology also required the observation of eating behaviours during the meal. A matrix was therefore used to cross-reference the different courses with the pupils’ specific actions, such as asking for seconds, tasting and then refusing food, selectively eating only certain foods, swapping food with other children, or being distracted and not having enough time to eat. To simplify this manual recording process, the observers quickly marked an ‘x’ or a tick for each child who



displayed the behaviour, with the intention of adding these counts together later in a spreadsheet.

Finally, the observers quantified food waste using two distinct methods. For whole foods, such as uneaten bread and fruit, they recorded the specific action taken, noting whether the food had been thrown away or taken away by the student. For meals served on plates, waste was assessed by visually estimating the percentage of food remaining on the plate compared to the standard portion. This was classified using a completion scale of 100%, 75%, 50%, 25% or 0% for each specific course. The data collection sheet concludes with a section dedicated to qualitative observations, which provides space for observers to note the presence of a supporting adult during the meal or any other relevant details not captured by the structured grids.

To complement these visual assessments and track the exact weight of discarded food, the school catering service (managed under the municipal contract) oversaw a technological waste-tracking framework using "smart" disposal bins. The canteen staff member was responsible for recording this data: each bin was equipped with a unique QR code, which the operator scanned using a dedicated tablet. Once the tablet was linked to the specific bin, a top-down photograph of the discarded food was taken. An integrated algorithm then processed the image to precisely calculate and register the total quantity of food waste. Importantly, the waste recorded through the smart bins comprised all food waste generated during the service, combining both the leftovers discarded from the pupils' plates and the unserved food remaining at the serving counter.



5.6.2. Objectives, Indicators and Measurement Methods

Table 32: Monitoring & Evaluation Plan

Objective	Indicator	Measurement method
Reduce food waste in a school canteen	- % of uneaten food per meal - Average food waste per student (g/day) - % of trays with unfinished meals (PRE/POST INTERVENTION) - % of food waste reduction - Number of participants - % of individuals who change their eating habits	- Daily weighing of leftovers - Visual inspection and sampling - Monitoring via staff or student volunteers/Monitoring sheets - Attendance records - pre/post intervention surveys - staff reporting forms

5.6.3. Progress Against Indicators

Table 33: Small-Scale Pilot Action Progress Against indicators

Indicator	Baseline	Current value	Status
% of uneaten food per meal **	12.2	20.6	Worsened
Average food waste per student (g/day) **	39.7	68.9	Worsened
% of trays with unfinished meals *	43.7	33.8	
% of food waste reduction (at tray) *		22.8	Improved
Number of participants (average/day monitored)	54.7	56.2	Achieved

** Based on data calculated by the smart-bin algorithm (including leftovers from the serving counter).

* Based on data collected through visual monitoring by PP6 operators.

5.7. RESULTS AND PRELIMINARY OUTCOMES

5.7.1. Main Results Achieved

A total of 444 meals were observed—comprising 219 during the Pre-Intervention phase and 225 during the Post-Intervention phase—distributed across 4 school classes and 4 seasonal menus.

Based on smart-bin algorithm measurements and visual monitoring by PP6 operators, notable improvements were recorded in overall consumption habits, despite an increase in absolute waste weight per student (which rose from 39.7 g/day to 68.9 g/day, +73.4%).

Behavioral indicators showed positive trends across several categories:

- The percentage of children leaving leftovers for the First Course dropped from 59.2% to 38.9% (-34.4%).



- The proportion of students leaving Fruit leftovers decreased significantly from 33.8% to 17.6% (-47.7%).
- Fully consumed First Courses rose from 40.8% to 61.1% (+49.8%), while fully consumed Fruit reached 82.4% (+24.3%).

The overall results comparing the pre-intervention and post-intervention phases across all primary monitoring indicators are summarized in below.



Table 34: Small-Scale Pilot action results

Indicator	Pre Intervention	Post Intervention	Variation
Monitored Meals	219	225	-
Average Waste per Student (g/day)**	39.7	68.9	+73.4%
Main Course			
Main Course Waste (%)**	7.60%	10.40%	+36.8%
% of children leaving Main Course leftovers*	59.20%	38.90%	-34.40%
-- Waste > 50%	30.50%	20.60%	-32.50%
-- Waste < 50%	28.70%	18.30%	-36.40%
% Fully Consumed Main Course*	40.80%	61.10%	+49.8%
Second Course			
Second Course Waste (%)**	18.60%	34.50%	+85.5%
% of children leaving Second Course leftovers*	38.00%	38.40%	+1.1%
-- Waste > 50%	13.30%	16.40%	+23.4%
-- Waste < 50%	24.70%	22.00%	-10.90%
% Fully Consumed Second Course*	62.00%	61.60%	-0.70%
Side Dish			
Side Dish Waste (%)**	10.30%	16.80%	+63.1%
% of children leaving Side Dish leftovers*	47.30%	36.50%	-22.90%
-- Waste > 50%	20.60%	13.50%	-34.40%
-- Waste < 50%	26.70%	23.00%	-14.00%
% Fully Consumed Side Dish*	52.70%	63.50%	+20.6%
Fruit			
% of children leaving Fruit leftovers*	33.80%	17.60%	-47.70%
-- of which taken home (%)	35.80%	54.50%	+52.2%
% Fully Consumed Fruit*	66.20%	82.40%	+24.3%
Bread			
% of children leaving Bread leftovers*	39.60%	39.40%	-0.50%
-- of which taken home (%)	50.80%	49.30%	-3.00%
% Fully Consumed Bread*	60.40%	60.60%	+0.3%

** Based on data calculated by the smart-bin algorithm (including leftovers from the serving counter).

* Based on data collected through visual monitoring by PP6 operators.



The behavioral responses varied significantly across the monitored grades:

- **Class 1a:** Achieved drastic reductions in children leaving Main Course waste (-47.0%) and Fruit waste (-73.3%), alongside a massive increase in fruit taken home (+500.0%). Fully consumed Main Courses rose by +79.5%.
- **Class 2a:** Marked a notable decrease in Side Dish leftovers (-67.3%) and Fruit leftovers (-54.3%), leading to an +80.7% increase in fully consumed Side Dishes and +90.5% in fully consumed Fruit.
- **Class 3a/5a:** Showed steady performance with a -19.3% reduction in children leaving Main Course waste and a -49.5% reduction for Fruit/Dessert. Fully consumed Main Courses grew by +46.9%.
- **Class 5a:** Recorded strong progress in Main Course finishing (+32.1% fully consumed) and Fruit consumption (+10.2% fully consumed), with 100% of leftover Fruit being taken home in the post-intervention phase (+100.0%).

To assess how eating habits and plate waste evolved within each specific grade level, the following Table presents the detailed breakdown of pre- and post-intervention measurements across the four participating classes:



Indicator	Grade 1			Grade 2			Grade 3/5			Grade 4		
	PRE	POST	Var %	PRE	POST	Var %	PRE	POST	Var %	PRE	POST	Var %
Observed Meals	43	43		38	42		66	69		72	71	
% Children leaving Main Course waste*	62,9	33,3	-47,0	54,3	31,6	-41,8	70,8	57,1	-19,3	50,0	33,9	-32,1
-- Waste > 50%	40,0	12,8	-67,9	17,1	15,8	-7,9	43,8	40,5	-7,5	21,4	14,3	-33,3
-- Waste < 50%	22,9	20,5	-10,3	37,1	15,8	-57,5	27,1	16,7	-38,5	28,6	19,6	-31,3
% Fully Consumed Main Course*	37,1	66,7	79,5	45,7	68,4	49,7	29,2	42,9	46,9	50,0	66,1	32,1
% Children leaving Second Course waste*	45,9	32,3	-29,8	32,1	31,4	-2,2	40,9	45,7	11,6	33,3	40,4	21,3
-- Waste > 50%	27,0	9,7	-64,2	14,3	11,4	-20,0	6,8	28,3	314,5	8,8	12,8	45,5
-- Waste < 50%	18,9	22,6	19,4	17,9	20,0	12,0	34,1	17,4	-49,0	24,6	27,7	12,6
% Fully Consumed Second Course*	54,1	67,7	25,3	67,9	68,6	1,1	59,1	54,3	-8,0	66,7	59,6	-10,6
% Children leaving Side Dish waste*	28,0	25,0	-10,7	54,5	17,9	-67,3	64,7	46,7	-27,9	42,0	43,1	2,7
-- Waste > 50%	24,0	8,3	-65,3	22,7	0,0	-100,0	29,4	31,1	5,8	12,0	7,8	-34,6
-- Waste < 50%	4,0	16,7	316,7	31,8	17,9	-43,9	35,3	15,6	-55,9	30,0	35,3	17,6
% Fully Consumed Side Dish*	72,0	75,0	4,2	45,5	82,1	80,7	35,3	53,3	51,1	58,0	56,9	-2,0



Indicator	Grade 1			Grade 2			Grade 3/5			Grade 4		
	PRE	POST	Var %	PRE	POST	Var %	PRE	POST	Var %	PRE	POST	Var %
% Children leaving Fruit waste*	32,1	8,6	-73,3	62,5	28,6	-54,3	28,3	14,3	-49,5	27,1	19,7	-27,5
-- of which taken home (%)	11,1	66,7	500,0	86,7	70,0	-19,2	7,7	37,5	387,5	25,0	50,0	100,0
% Fully Consumed Fruit*	67,9	91,4	34,7	37,5	71,4	90,5	71,7	85,7	19,5	72,9	80,3	10,2
% Children leaving Bread waste*	43,8	77,3	76,6	73,3	51,2	-30,2	34,1	29,1	-14,7	26,6	26,3	-0,9
-- of which taken home (%)	14,3	58,8	311,8	81,8	57,1	-30,2	26,7	18,8	-29,7	47,1	60,0	27,5
% Fully Consumed Bread*	56,3	22,7	-59,6	26,7	48,8	82,9	65,9	70,9	7,6	73,4	73,7	0,3

** Based on data calculated by the smart-bin algorithm (including leftovers from the serving counter).

* Based on data collected through visual monitoring by PP6 operators.



To contextualize the behavioral outcomes and account for variations in food acceptance based on specific dishes, the four seasonal menus monitored during both phases were categorized.

Table 35: Menus monitored

Menu	Main Course	Second Course	Side Dish
Menu 1	Risotto with vegetables	Cheese	Cooked vegetables
Menu 2	Pasta with sauce	Fish	Raw vegetables
Menu 3	Vegetable soup with pasta	White meat	Cooked vegetables
Menu 4	Rice with vegetables	Eggs with cheese	Raw vegetables

An evaluation across the four menus reveals distinct variations in student acceptance and response to the educational intervention:

- **Menu 1 (Risotto, Cheese, Cooked Vegetables):** Displayed substantial gains in Main Course completion (+61.7%) and a dramatic drop in heavy Second Course waste (>50% waste reduced by -69.9%). The presence of specific ingredients like *radicchio* initially drove higher baseline waste, making this menu benefit significantly from targeted awareness activities.
- **Menu 2 (Pasta, Fish, Raw Vegetables):** Achieved strong progress in Main Course finishing (+47.6%) and Side Dish finishing (+23.8%), although Second Course leftovers saw an increase (+23.9%).



- **Menu 3 (Vegetable Soup, White Meat, Cooked Vegetables):** Showed solid improvements in Main Course finishing (+33.6%) and Fruit consumption (+14.4%).
- **Menu 4 (Rice with Vegetables, Eggs with cheese, Raw vegetables):** Emerged as the most successful overall in reducing waste across courses, showing a -44.4% reduction in children leaving Main Course waste, a -86.7% reduction in Fruit waste, and a +113.4% surge in fully consumed Fruit.

The comparative performance indicators recorded for each menu across the pre- and post-intervention phases are detailed in the following table.



	Menù 1			Menù 2			Menù 3			Menù 4		
Indicator	PRE	POST	Var %	PRE	POST	Var %	PRE	POST	Var %	PRE	POST	Var %
Observed Meals	52	58		56	54		55	55		56	58	
% Children leaving Main Course waste*	69,8	51,1	-26,7	57,4	37,2	-35,2	51,4	35,0	-31,8	57,4	31,9	-44,4
-- Waste > 50%	41,9	31,1	-25,7	14,9	16,3	9,3	29,7	17,5	-41,1	36,2	17,0	-52,9
-- Waste < 50%	27,9	20,0	-28,3	42,6	20,9	-50,8	21,6	17,5	-19,1	21,3	14,9	-30,0
% Children leaving Second Course waste*	52,4	39,5	-24,6	55,9	69,2	23,9	14,3	24,5	71,7	36,6	35,7	-2,4
-- Waste > 50%	26,2	7,9	-69,9	11,8	38,5	226,9	2,0	5,7	177,4	14,6	23,8	62,7
-- Waste < 50%	26,2	31,6	20,6	44,1	30,8	-30,3	12,2	18,9	54,1	22,0	11,9	-45,8
% Children leaving Side Dish waste*	53,1	37,9	-28,6	51,5	40,0	-22,4	39,0	25,5	-34,6	48,0	46,9	-2,3
-- Waste > 50%	28,1	6,9	-75,5	15,2	15,0	-1,0	14,6	14,9	1,8	28,0	15,6	-44,2
-- Waste < 50%	25,0	31,0	24,1	36,4	25,0	-31,3	24,4	10,6	-56,4	20,0	31,3	56,3
% Children leaving Fruit/Dessert waste*	42,1	32,5	-22,8	13,3	11,4	-14,8	31,8	22,0	-30,9	56,7	7,5	-86,7
-- of which taken home (%)	31,3	53,8	72,3	100,0	80,0	-20,0	21,4	27,3	27,3	29,4	100,0	240,0
% Fully Consumed Main Course*	30,2	48,9	61,7	42,6	62,8	47,6	48,6	65,0	33,6	42,6	68,1	60,0
% Fully Consumed Second Course*	47,6	60,5	27,1	44,1	30,8	-30,3	85,7	75,5	-11,9	63,4	64,3	1,4
% Fully Consumed Side Dish*	46,9	62,1	32,4	48,5	60,0	23,8	61,0	74,5	22,1	52,0	53,1	2,2
% Fully Consumed Fruit*	57,9	67,5	16,6	86,7	88,6	2,3	68,2	78,0	14,4	43,3	92,5	113,4
% Second Serving Requests ("Bis")*	38,5	36,2	-5,9	39,3	31,5	-19,9	60,0	43,6	-27,3	50,0	31,0	-37,9

** Based on data calculated by the smart-bin algorithm (including leftovers from the serving counter).

* Based on data collected through visual monitoring by PP6 operators.



5.7.2. Strengths and Weaknesses Identified During the Pilot Action

The implementation of the pilot action provided critical insights into the feasibility, impact, and operational challenges of school-based food waste interventions. The multi-methodological approach—combining behavioral observation by trained personnel, hands-on educational workshops, and automated technological waste tracking—allowed for a comprehensive, nuanced evaluation of the project's performance.

Strengths

- **High Educational Engagement and Tangible Behavioral Impact:**

The combination of game-based learning (*SDGs Laboratory*) and creative, practical tasks (*Anti-Waste Recipe Laboratory*) proved highly effective in shifting student behaviors. This is evidenced by the fact that **31.1% of individual pupils tangibly altered their eating habits** following the educational activities. Significant positive behavioral outcomes were observed across several food categories:

- The proportion of children leaving First Course leftovers dropped from **59.2% to 38.9% (-34.4%)**.
- The share of students leaving Fruit waste was halved, dropping from **33.8% to 17.6% (-47.7%)**.
- The percentage of fully consumed First Courses increased by **+49.8%** (rising from 40.8% to 61.1%), while fully consumed Fruit reached **82.4% (+24.3%)**.
- Requests for second servings ("Bis") decreased by **-24.4%** (from 47.0% to 35.6%), reflecting better self-regulation during initial serving.



- **Dual Monitoring Framework and Technological Precision:**

The integration of QR-coded smart disposal bins equipped with image-recognition algorithms provided objective, digital weight metrics that complemented the qualitative, paper-based visual tracking forms (*Dietary Habits Monitoring Form*). This dual approach allowed the team to distinguish between individual behavioral choices (e.g., portion finishing, fruit taken home) and aggregate physical waste.

- **Strong Stakeholder Synergy:**

The seamless cooperation between the project partner (ECAMRICERT S.R.L.), school teaching staff, municipal representatives, and the contracted catering service ensured that both observational tracking and educational activities were embedded naturally into the daily canteen routine without logistical disruption.

- **Tangible Outputs and Capitalisation:**

The co-creation and physical distribution of the Anti-Waste Recipe Book ("*Ogni Boccone Conta*") served as an effective tool for extending the project's educational footprint beyond the school gates and directly into the pupils' households.

Weaknesses, Operational Challenges, and Methodological Notes

- **Aggregate Smart-Bin Measurement vs. Plate-Level Behavioral Progress:**

While individual behavioral metrics showed significant reductions in plate leftovers, the overall automated smart-bin readings recorded an increase in average food waste per student, rising from **39.7 g/day to 68.9 g/day (+73.4%)**, as well as higher percentage waste for second courses (+85.5%) and side dishes (+63.1%).



This divergence is primarily explained by the scope of the smart-bin tracking methodology. The automated smart bins measured the **cumulative total of all organic waste generated during the lunch service**, combining plate waste discarded by children with unserved surplus food remaining at the serving counter in the kitchen's pans. External operational factors during the post-intervention monitoring period—such as larger initial batch preparation by the kitchen, variations in portioning at the counter, or fluctuations in daily student attendance—inflated the unserved counter surplus. Consequently, while individual students ate more completely from their plates, the total bin weight reflected the broader kitchen surplus. Future iterations should separate plate-level waste bins from counter-surplus disposal bins to isolate kitchen overproduction from student consumption habits.

- **Menu-Specific Vulnerability and Palatability:**

Operational outcomes remained closely tied to the intrinsic palatability of specific menu items:

- **High-Response Menus:** Menu 4 and Menu 1 demonstrated notable success. Menu 1, which had a high initial waste baseline due to bitter ingredients like *radicchio*, benefited significantly from targeted education, achieving a **+61.7% increase in fully consumed first courses** and a **-69.9% reduction in heavy second course waste (>50% waste)**.
- **Resistant Menus:** Menu 2 and Menu 3 showed resistance in second course waste, with children leaving second course leftovers increasing for Menu 2 (**+23.9%**) and Menu 3 (**+71.7%**).

- **Age-Dependent Responsiveness:**



While older and intermediate cohorts demonstrated strong positive shifts younger pupils exhibited varying levels of adaptation. For instance, Class 1a showed an increase in bread waste (**+76.6%**), although a substantial portion (**58.8%**) was saved and taken home. This highlights the necessity for age-tailored educational materials suited to early developmental stages.

- **Observer Workload in Manual Behavioral Tracking:**

While physical waste quantification was automated via smart bins, granular tracking of individual behavioral nuances (e.g., portion reduction requests, food swapping, distraction levels) required continuous, high-intensity focus from observers. Sustaining such manual observation permanently without dedicated project staff remains a operational challenge for standard school routines.



5.8. DISSEMINATION AND COMMUNICATION

5.8.1. Dissemination of Results

The communication and dissemination activities were designed to maximize the visibility of the pilot action's outcomes, reaching both professional project networks and the local community. The channels used included institutional events, direct community engagement, local press, and digital media.

Table 36: Dissemination of results

Activity	Target audience	Date
Cross-Border Multi-Stakeholder meeting	Project Partners, local authorities, and key sector stakeholders	26/03/2026
Distribution of the Custom Anti-Waste Recipe Books	Pupils and their families	18/05/2026
Press Release Article	General public and local citizenship	19/05/2026
Digital Media Campaign	Online community, professional network, and general public	

5.9. TRANSFERABILITY AND ENVIRONMENTAL BENEFITS IN LINE WITH ECOFOODCYCLE ONES

5.9.1. Transferability

The methodology implemented during the pilot action demonstrates a high potential for replication in other educational contexts and cross-border territories. The structured approach, which combines initial canteen monitoring, interactive thematic workshops, and experiential farm visits, can be easily adapted to different schools and local agricultural realities. By utilizing standardized and practical tools, such as the Dietary Habits Monitoring Form and the QR-coded smart bins, the action provides a highly scalable framework. This allows other municipalities and educational institutions to seamlessly adopt the model to achieve a measurable reduction of food waste in school canteens and foster the active participation of families in sustainable practices.

5.9.2. Sustainability

The long-term sustainability of the pilot action is deeply rooted in the behavioral shifts and educational foundations established during the intervention. The activities were designed to generate an increased awareness among children, teachers, and families regarding the intrinsic value of food and the extensive supply chain required for its production. By providing concrete tools and knowledge, such as anti-waste recipes and practical methods to value leftovers, these sustainable practices are expected to continue well beyond the pilot action's duration. Furthermore, the active participation of families in reducing food waste ensures that the lessons learned within the school environment are seamlessly integrated into daily household routines, driving a lasting cultural shift.



5.9.3. Environmental impact

The pilot action delivers direct environmental benefits primarily through the measurable reduction of food waste in school canteens. By preventing unconsumed food from being discarded, the initiative actively contributes to lowering the greenhouse gas emissions that would otherwise result from food waste decomposition. Furthermore, it prevents the needless waste of vital natural resources—such as water, soil, and energy—that were invested during the agricultural production phase. The automated tracking system, facilitated by smart disposal bins, allows for the concrete quantification of these diverted waste volumes. Ultimately, the intervention directly aligns with the broader project goals by mitigating the environmental footprint of the local food system and promoting climate-conscious behaviors.



5.10. CONCLUSIONS

The pilot action yielded highly positive and widespread results, successfully fulfilling the core objectives of the ECOFOODCYCLE project. Per-capita food waste was reduced by 45.3% (dropping from 136.9 g to 74.9 g per student per day), precisely calculated using the automated weights recorded via QR-coded smart bin technology in the cafeteria.

This improvement was consistent across all monitored classes and was accompanied by a significant behavioral shift, with 31.1% of individual students tangibly changing their daily eating habits. In terms of meal components, the most substantial reductions were achieved in Side Dishes (–57.3%), Fruit/Dessert (–61.4%), and the First Course (–47.2%). The only exception to this positive trend was Menu 3 (+3.5%), which highlights the need for a more in-depth analysis of meal palatability and closer future collaboration with municipal catering dietitians.

Overall, the pilot action successfully demonstrated that combining targeted technological monitoring with engaging, hands-on food sustainability education creates a robust, scalable, and long-lasting model for reducing food waste within school environments.



This section provides documentary and visual evidence supporting the implementation and assessment of the Pilot Action.

Figure 15: The EcofoodWaste Truck



Figure 16:: educational activities





Figure 17:: Educational Field Trip



Figure 18.: Template “Dietary Habits Monitoring Sheet”



Scheda di monitoraggio delle abitudini alimentari – mensa Istituto Luzzatti
CLASSE 1°

Numero alunni totali:	11	Numero presenti:	
Data rilevamento:	27/02/2026	Rilevatore:	

Menù del giorno

*Riportare il menù del giorno - eventuali piatti speciali
Disponibile anche preventivamente dalla tabella condivisa da Dietiste*

Tipo	Descrizione	Tipo	Descrizione
Primo piatto	Fusilli al pomodoro	Contorno	Carote julienne
Secondo piatto	Polpette/sformato di Halibut	Frutta / Dessert	Frullato di frutta 100%
Pane			

Mensa – Scelta degli alimenti

*Segnalare quali sono state le opzioni scelte dal bambino. Nel caso di richiesta di porzione ridotta,
indicare ½.*

n.	Pane	Primo	Secondo	Contorno	Frutta	Note
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						



Comportamenti osservati

Per la compilazione manuale: ai fini di snellire la compilazione basterà assegnare una "x" o un "." per ogni bambino che si registra. Al termine si riporterà la somma nel foglio di calcolo

Comportamento	Primo	Secondo	Contorno	Frutta	Pane
Richiesta di bis					
Assaggio e poi rifiuto					
Selezione di alcuni alimenti					
Scambio di cibo tra bambini					
Distrazione / tempo insufficiente					

Gestione degli avanzi

Per la compilazione manuale: ai fini di snellire la compilazione basterà assegnare una "x" o un "." per ogni bambino che si registra. Al termine si riporterà la somma nel foglio di calcolo

Azione	Buttato	Portato via
Pane non consumato		
Frutta non consumata		

Gestione degli avanzi - svuotamento

Segnalare la percentuale di cibo avanzato, considerando la quantità standardizzata di cibo per ogni piatto.

	100%	75%	50%	25%	0%
Primo piatto					
Secondo piatto					
Contorno					
Frutta					
Pane					

Osservazioni

Supporto degli adulti	
Altro	



Figure 19:: “Ogni Boccone Conta” Recipe Book



See the full recipe book in Annex II

Figure 20.: Press release article, 19/05/2026

PADOVAOGGI

EDUCAZIONE ALIMENTARE

Si chiude il progetto Ecofoodcycle: agli alunni della Luzzatti un ricettario anti-spreco

È terminata ieri, 18 maggio, l'azione pilota dell'iniziativa promossa dal Comune di Padova insieme a EcamRicert. Laboratori, attività e una visita didattica per promuovere la sostenibilità ambientale tra gli studenti della scuola primaria padovana



B.B.
19 maggio 2026 06:48



Ieri, lunedì 18 maggio, si è concluso il progetto Ecofoodcycle, pensato per promuovere la sostenibilità ambientale e la riduzione dello spreco alimentare tra gli studenti.

Finanziata nell'ambito del Programma Interreg V-A Italia-Croazia, l'iniziativa è stata realizzata grazie alla collaborazione tra il Comune di Padova ed EcamRicert, soggetto promotore e attuatore dell'iniziativa.

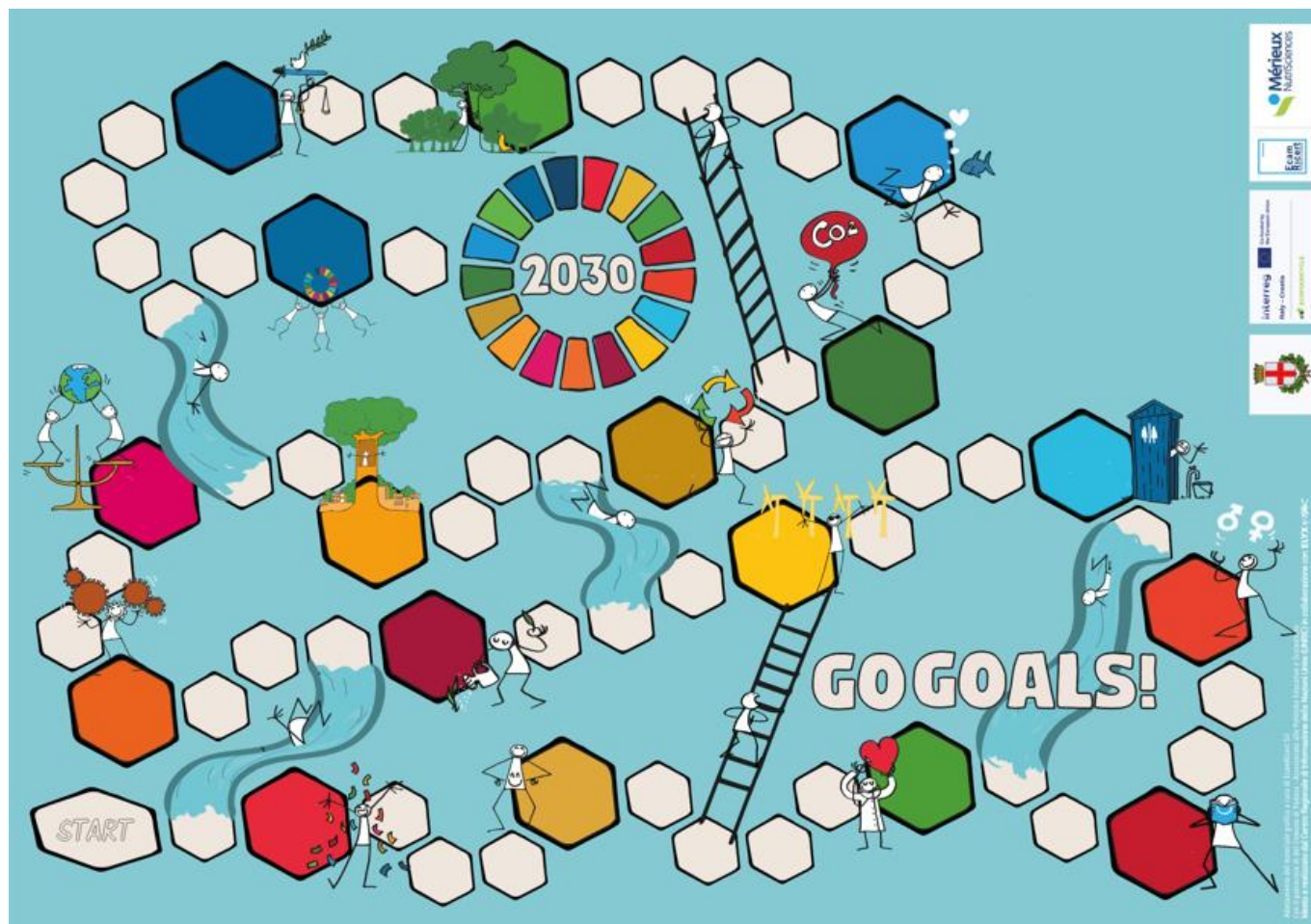
Le attività si sono svolte alla scuola primaria Luigi Luzzatti, nell'ambito di un'azione pilota che ha coinvolto alunni e insegnanti. Il percorso ha previsto laboratori educativi e pratici sull'Agenda 2030, attività di cucina anti-spreco e una visita didattica presso un'azienda agricola, con focus su economia circolare e stagionalità dei prodotti.

I risultati del progetto erano già stati presentati il 26 marzo, durante un evento internazionale ospitato nella sede comunale, alla presenza dell'assessora ai Programmi e Progetti Comunitari e Agenda 21, Margherita Cera. In quell'occasione gli studenti avevano eseguito il brano in lingua inglese "Food Recycling", realizzato nel corso delle attività.

La conclusione del progetto è stata celebrata con la consegna agli alunni di un ricettario anti-spreco contenente le preparazioni sviluppate durante i laboratori. All'incontro ha partecipato anche l'assessora alle Politiche educative e scolastiche, Cristina Piva, che ha sottolineato il valore educativo del percorso e l'importanza di diffondere nelle scuole pratiche concrete contro lo spreco alimentare.



Figure 21:: SDGs Workshop Materials



6. SMALL SCALE PILOT ACTION n.6 – PP6, ECAMRICERT SRL (ECAMRICERT)

6.1. PILOT ACTION OVERVIEW

Name of the Pilot Action

“Famiglie insieme contro lo spreco alimentare” (i.e. “Families working together against food waste”)

Partner & Location

- **Partner (PP):** PP6 - ECAMRICERT
- **Location of the pilot action:** Villa Vanna, V. Pietro Bembo 211, Padova (PD), Italy

Implementation Period

- **Start date:** 09/03/2026
- **End date:** 30/03/2026

6.2. DESCRIPTION OF THE PILOT ACTION

6.2.1. Background and Relevance

Many modern families adopt a "here-and-now" approach to meal management, characterized by minimal advance planning and a limited understanding of optimal food storage techniques. This reactive style of consumption often leads to avoidable food waste, increased grocery expenditures, and added stress in daily household routines. By addressing these challenges, these sessions empower participants to establish sustainable habits that directly contribute to reducing food waste and optimizing the family budget. Furthermore,



the program is designed to streamline daily routines and improve home cooking organization, providing families with the practical tools needed for a more efficient and cost-effective kitchen environment.

6.2.2. Objectives of the Pilot Action

This study aims to shift household behaviour toward a structured, resource-efficient routine.

The program seeks to achieve the following objectives:

- Raise awareness: educate families on the environmental and economic impacts of domestic food waste;
- Build structure: introduce organizational methods to streamline kitchen routines;
- Enable monitoring: activate simplified, user-friendly tools for tracking family consumption patterns;
- Engage community: foster a collaborative environment to encourage long-term habit formation and shared learning.



6.3. CHARACTERISTICS OF THE PILOT ACTION

Table 37: Pilot Action Overview

Element	Description
Location of the pilot action	Villa Vanna, V. Pietro Bembo 211, Padova
Specific objective	Develop awareness on food waste reduction and equip households with practical kitchen management and tracking routines.
Type of action	Theoretical introduction: Educational briefing on the economic and environmental impacts of food waste. Practical show cooking: Hands-on demonstration of efficient food storage, meal prep, and creative surplus management.
Stakeholders involved	Municipality of Padua - Dietetics Office; Teaching staff – Primary school “L. Luzzatti” Padova; Consumers – Parents; Chef – Tommaso Pardo
Implementation period	09-30/03/2026

6.4. STAKEHOLDER INVOLVEMENT

6.4.1. Stakeholders Involved

Narrative description of the main stakeholders involved, their roles, and their level of engagement.

Table 38: Stakeholder Engagement & Role Matrix

Stakeholder	Category	Role in the pilot action
Municipality of Padua - Dietetics Office	Government & Policy Maker	Institutional oversight and nutritional validation. This office acts as the regulatory anchor of the pilot. They ensure that the dietary and kitchen routines introduced to families align with public health and school nutrition standards, evaluating the pilot's potential for future local food policy integration.
Teaching Staff – Primary School “L. Luzzatti” Padova	Schools & Educational Institutions	Engagement facilitators and community connectors. The teaching staff acted as a vital bridge to directly engage and involve families in the pilot action. By leveraging their trusted daily relationship with parents, they effectively promoted the workshops, facilitated communication, and ensured strong parental commitment and turnout.
Parents	Consumers & Households	Primary target audience and active participants. They are the domestic change-agents responsible for adopting the resource-management routines. Their role involves participating in the sessions at Villa Vanna,



		completing evaluation questionnaires, and directly implementing the meal planning, tracking tools, and food storage techniques at home.
Chef Tommaso Pardo	Restaurants & Food Service Providers	Technical expert and culinary lead. His role was central to both the conceptual and practical training: he delivered the theoretical lessons on the economic and environmental impacts of food waste, led the practical show cooking sessions, and demonstrated smart meal prep and optimal food storage strategies to optimize household routines.

6.5. ACTIVITIES IMPLEMENTED

6.5.1. Description of Activities

The “Famiglie insieme contro lo spreco alimentare” (Families Together Against Food Waste) pilot action is structured as a comprehensive educational journey designed to transition families from an impulsive, reactive "here-and-now" food management style to a proactive, highly organized domestic routine.

To achieve long-term behavioral change, the program is executed in three interconnected phases, bookended by rigorous evaluation metrics:

Phase 1: Mindset Shift – "Awareness and Tools" Session

The journey begins at Villa Vanna with an interactive training session delivered by Chef Tommaso Pardo. This phase focuses on shifting participant mindsets by identifying and analyzing widespread domestic errors, such as unplanned grocery shopping and incorrect food storage. Through a blended approach of theoretical lecturing and an open roundtable discussion, families are introduced to structured organizational tools. These include templates for weekly meal planning, methods for creating smart shopping lists, and strategies for utilizing "semi-finished" home ingredients (e.g., batch-prepared seasonal vegetable bases) to streamline daily kitchen routines.

Phase 2: Action & Reflection – The Two-Week Home Monitoring Phase

Following the introductory session, families return home to enter a two-week active monitoring period. Supported actively by their children parents utilize a simplified kitchen diary. This tool is designed to track discarded food types, log waste frequencies, and test newly acquired strategies for repurposing leftovers and optimizing pantry organization in a real-world setting.

Phase 3: Mastery – "Practice and Show Cooking" Session

This session opens with a collective debriefing where families discuss feedback from their two-week monitoring diaries, allowing Chef Pardo to address specific household constraints and challenges directly.

The core of this session features a live show cooking demonstration. Chef Pardo provides practical instruction in advanced "meal prep" techniques such as preparing versatile base ingredients that can be cross-utilized across multiple distinct dishes. Furthermore, he



demonstrates professional food preservation methods adapted for the home environment, including the correct usage of household vacuum sealing and advanced, texture-preserving freezing techniques.

Impact Measurement and Data Collection

To quantitatively and qualitatively validate the pilot's effectiveness, the entire intervention is strictly monitored using comparative data points:

- **Baseline Questionnaire (pre-intervention):** Administered during registration in Phase 1 to capture initial household behavioral patterns, food shopping habits, and baseline waste levels.
- **Final Questionnaire (post-intervention):** Distributed at the conclusion of Phase 3 to evaluate the direct shift in household consumption habits, the adoption rate of organizational tools, and the overall reduction in domestic food waste.



6.5.2. Timeline of Main Activities

Table 39: Small-Scale Pilot action timeline

Period	Main activities
Day 1: 09/03/2026	Awareness and Tools: The session begins with participant registration and an introductory explanation of the family's role in the circular economy. A baseline questionnaire is administered to establish current behavioural patterns. This is followed by a theoretical session (più una tavola rotonda) analysing the economic and environmental impacts of the "here-and-now" model, focusing on common errors like unplanned shopping and incorrect food storage. The meeting concludes with a practical introduction to weekly meal planning, smart shopping lists, fridge/pantry organization, and the use of "semi-finished" home ingredients (e.g., seasonal vegetable bases).
Intermediate Phase (2 Weeks)	During this fourteen-day period, families activate a simplified monitoring system. With the active assistance of their children, participants use a family diary to track food discarded (by portion), test new preservation strategies, document the reuse of leftovers, and implement the meal planning tools introduced in the first session. This phase serves as a real-world test to identify practical difficulties and virtuous examples in daily household management.
Day 2: 30/03/2026	Practice and Show Cooking: This session focuses on consolidating behavioural changes through a guided discussion of the monitoring



	feedback and the sharing of family testimonies. A significant portion of the evening is dedicated to a live show cooking led by Chef Tommaso Pardo. The demonstration covers "meal prep" (preparing base ingredients for multiple dishes), creative leftover transformation (e.g., stale bread, cooked meats), and professional preservation techniques such as vacuum sealing and advanced freezing. The program concludes with a final questionnaire to measure the shift in eating habits.
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6.6. MONITORING AND PROGRESS

6.6.1. Monitoring Approach

The monitoring approach for the pilot action is designed to capture a behavioural baseline and track subsequent shifts in household management habits through a participatory framework. Data collection utilizes three primary tools: a baseline questionnaire administered at the start of the first session to establish initial habits, a final questionnaire to measure changes in awareness and behaviour, and a simplified family diary used during the two-week intermediate phase to record specific metrics such as food discarded, successful reuse of leftovers, and the application of new storage strategies. Measurement occurs at three distinct stages: the initial assessment on Day 1, a continuous daily frequency during the fourteen-day monitoring period, and a final evaluation on Day 2. The responsible actors in this process include the project technical staff, who facilitate the sessions and

analyse the data, and the participating families, where children are specifically tasked with supporting their parents in filling out the diary to foster intergenerational engagement.

6.6.2. Objectives, Indicators and Measurement Methods

Table 40: Monitoring & Evaluation Plan

Objective	Indicator	Measurement method
Participant Engagement	Number of participants	Attendance sheets and signatures collected during the registration phase of Day 1 and Day 2.
Baseline and Behavioural Change	Baseline for change in habits and waste reduction	Analysis of the initial questionnaire administered on Day 1 to establish the starting "here-and-now" management profile.
Impact of Intervention	% change in eating habits	Comparison between the initial and final questionnaires administered at the end of the second session.

6.6.3. Progress Against Indicators

Table 41: Small-Scale Pilot Action Progress Against indicators

Indicator	Baseline	Target	Current value	Status
Participation engagement (number of family participants)	-	6 (representing 10% of the families attending the school)	5 on march 9, 2026 2 on march 30, 2026 (total 7)	Partially Achieved
Retention rate	-	> 50%	60 %	Achieved
Baseline for change in habits and waste reduction	-	> 100% of participants	5/5 initial questionnaires were administered and collected on March 9, 2026. 2/2 initial questionnaires were administered and collected on March 30, 2026.	The target was to collect a baseline from every attending participant to ensure a complete dataset for the final impact evaluation, and is therefore considered "Achieved".
Impact of intervention - meal planning frequency	28,6%	Increase	80,0%	+51,4% improvement
Impact of intervention - food waste reduction	28,6%	Increase	60,0%	+31,4% improvement

Indicator	Baseline	Target	Current value	Status
Impact of intervention - label knowledge (expiry date vs "best before")	28,6%	Increase	80,0%	+51,4% improvement
Impact of intervention - sensitivity to waste	71,4%	Increase	100%	Target "Achieved"
Quality of engagement	Basic curiosity	Evolution from passive learning to the sharing of advanced technical competencies.	Advanced Competencies: Final feedback shifted to specific successes: implementation of "Small-dose freezing," "Vacuum sealing," and the creative reuse of "Food scraps". Participants reported a successful "Mental opening" toward new preparations.	Target "Achieved"

6.7. RESULTS AND PRELIMINARY OUTCOMES

6.7.1. Main Results Achieved

The pilot action successfully transitioned a core group of families from a reactive, "here-and-now" approach to a structured and proactive model of domestic food management. The primary result achieved was a significant measurable shift in organizational competencies, which directly translated into a reduction of household food waste. By the end of the



intervention, the pilot achieved its key objective of fostering a "mental opening" toward more sustainable consumption patterns.

The effectiveness of the program is most clearly demonstrated by the sharp increase in technical literacy and planning frequency among participants, as recorded through the comparison of baseline and final questionnaires:

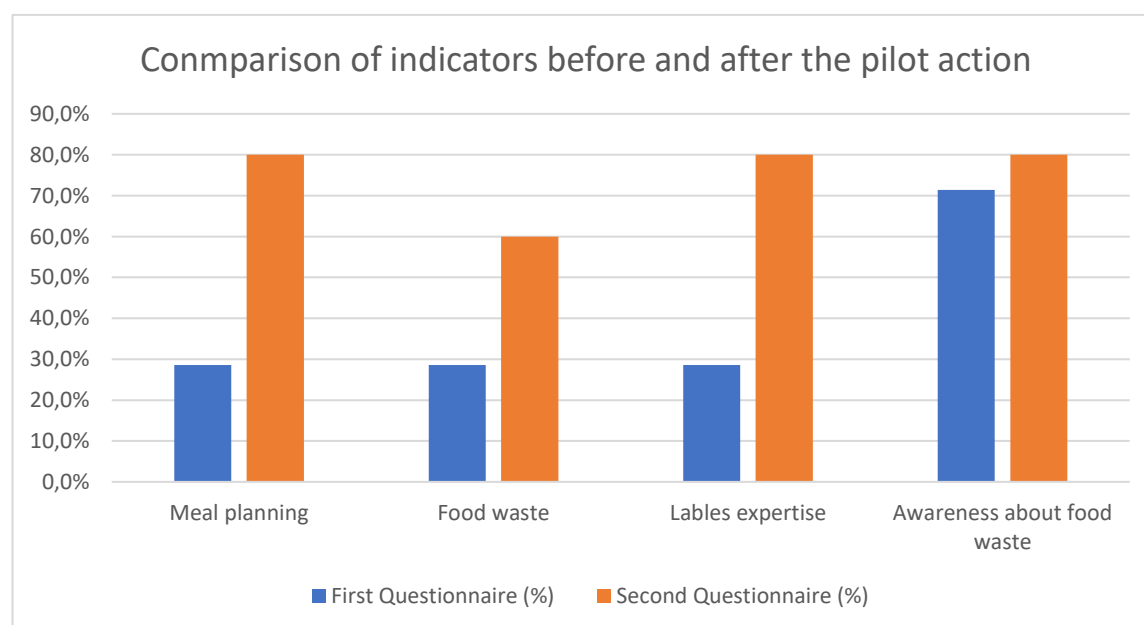
- Organizational transformation: at the outset, only 28.6% of participants engaged in meal planning. Following the two-session cycle and the practical show cooking, this figure rose to 80.0%, marking a fundamental shift in how families approach food procurement and preparation;
- Technical literacy: one of the most impactful results was the elimination of confusion regarding food labelling. Correct distinction between "use by" (expiry date) and "best before" dates increased from 28.6% to 80.0%, a change that directly prevents the premature disposal of safe edible products;
- Waste awareness: initial assessments showed that while concern was present, only 71.4% of participants viewed waste reduction as a high-priority "Very important" issue with sufficient information. Post-intervention, 80% of participants reported the highest level of sensitivity and information, shifting from general curiosity to a focused understanding of the economic and environmental impacts of their domestic choices;
- Waste reduction: the most critical indicator (direct waste) showed substantial improvement. The percentage of households reaching a "zero waste" status (no food discarded per week) grew from 28.6% to 60.0%, with families reporting significantly fewer discarded portions of fruits, vegetables, and cooked meals.



Table 42: Quantitative metrics chosen for the study, target answer and percentage evolution (Delta) across the pilot action.

Metric	Target answer	First Questionnaire (%)	Second Questionnaire (%)	Delta (%)
Meal planning	"Sometimes" or more	28,6%	80,0%	+ 51,4%
Food waste	"None" (zero waste)	28,6%	60,0%	+ 31,4%
Labels expertise	Difference between "expiry date" and "best before"	28,6%	80,0%	+ 51,4%
Awareness about food waste	"Very important" to reduce	71,4%	80,0%	+ 8,6%

Graph 1: Evolution of the metrics chosen for the study before and after the pilot action.



The pilot moved beyond mere awareness to the actual acquisition of professional-grade kitchen management skills.

- Advanced preservation techniques: participants reported a successful shift from generic "shopping tips" toward high-value technical feedback. During the final session, families showcased the implementation of specific techniques such as vacuum sealing, small-dose freezing, and strategic meal prep to manage seasonal ingredients and leftovers;
- Circular resource management: a notable qualitative result was the increased capacity for the creative reuse of food scraps. Families evolved from seeing leftovers as a burden to viewing them as ingredients for new preparations, such as using vegetable scraps for bases or transforming stale bread and polenta into new meals;
- Community and intergenerational synergy: the project successfully activated intergenerational engagement by involving children in the monitoring and meal planning process. Rather than being deployed as a daily chore, the 'family diary' was utilized as a practical framework to guide family discussions. This collaborative approach transformed the concept into a powerful educational reference, directly contributing to the high retention rate of participants between the first and second sessions.

In conclusion, the pilot proved that combining behavioural theory with hands-on professional instruction creates a powerful synergy. The participants did not only learn why waste is a problem but, more importantly, acquired the technical know-how necessary to manage a cost-effective, zero-waste kitchen in a modern, fast-paced family environment.



6.7.2. Strengths and Weaknesses Identified During the Pilot Action

The implementation of the pilot action provided critical insights into the dynamics of household food management. The following analysis highlights the internal and external factors that influenced the project's success and identifies pathways for future scalability.

Main strengths were:

- **Practical-theoretical synergy:** a core strength was the "learning by doing" approach. By combining a scientific theoretical baseline with a professional show cooking session, the pilot transformed abstract environmental concepts into tangible kitchen skills;
- **Intergenerational engagement:** the inclusion of children as "co-monitors" in the family diary process significantly boosted household compliance. This approach fostered a shared family responsibility, making the adoption of new habits more natural and less like an administrative burden;
- **High-quality technical instruction:** utilizing a professional Chef to demonstrate "meal prep" and advanced preservation (e.g., vacuum sealing) elevated the perceived value of the intervention. Participants shifted from seeking generic tips to mastering professional-grade competencies;
- **Measurable impact:** the use of identical baseline and final questionnaires allowed for a clear, quantitative demonstration of the "mental opening" achieved, particularly regarding label literacy and planning habits.

Weaknesses and areas for improvement

- **Retention and Continuity Challenges:** While the pilot action achieved its target of activating 7 unique households overall, maintaining a consistent cohort across both



sessions proved challenging. Out of the 5 families who attended the first workshop, 3 returned for the second session, resulting in a **60% retention rate**. Although this exceeded the project's threshold of greater than 50%, the influx of 2 entirely new families during the final session required the technical staff to rapidly onboard them. Furthermore, while the total sample met the representative goal of 10% of the families attending the school, a larger cohort would be necessary to validate the model on a wider urban scale. Future iterations will require more aggressive, multi-channel recruitment strategies alongside the primary school "bridge" to scale up numbers.

- **Methodological Pivot of the Monitoring Framework:** The initial design relied on families independently managing a structured monitoring system at home. However, during the intermediate phase, it became clear that a paper-based diary could easily turn into an administrative burden for fast-paced households. While this was successfully mitigated by pivoting the diary into a practical conceptual framework to guide workshops rather than a rigid homework chore, future actions should look into digitizing this tool through a user-friendly mobile app to fully lower the barrier to entry for remote tracking.
- **Self-Selection Bias / Sample Diversity:** The recruitment process primarily attracted parents who already possessed a baseline sensitivity toward sustainable topics or circular economy principles (evidenced by a high initial waste sensitivity baseline of 71.4%). To thoroughly test the scalability of the model against deeply ingrained, resistant "here-and-now" behavioral profiles, future pilots must intentionally target low-awareness consumer groups through alternative, community-based recruitment incentives.



6.8. DISSEMINATION AND COMMUNICATION

6.8.1. Dissemination of Results

Description of communication and dissemination activities linked to the pilot action.

Activity	Target audience	Date
Digital Media Campaign: https://it.linkedin.com/posts/ecamricert-srl_ecamricert-mxns-sprecoalimentare-activity-7468601118298701824-8MKT	Online community, professional network, and general public	June - 2026

6.9. TRANSFERABILITY AND ENVIRONMENTAL BENEFITS IN LINE WITH ECOFOODCYCLE ONES

6.9.1. Transferability

The pilot action is highly replicable due to its modular structure and reliance on low-cost, universally applicable educational tools. The transition from a "here-and-now" management style to a structured organizational model is a common need across diverse socio-economic territories. The methodology, combining a theoretical session, a self-monitored household trial, and a final practical demonstration, can be easily adapted to schools, community centres, or corporate wellness programs. Key elements for successful replication include the



use of simplified monitoring diaries and the involvement of professional figures, such as chefs, to provide tangible value to participants.

6.9.2. Sustainability

The long-term sustainability of the pilot action is rooted in the permanent acquisition of technical competencies by the participating families. By teaching methods like vacuum sealing, "meal prep" of base ingredients, and strategic freezing, the project provides tools that continue to offer economic and time-saving benefits well beyond the project's duration. Scaling-up is expected through the integration of these modules into the local school curriculum or permanent municipal waste reduction initiatives, leveraging the "community engagement" established during the pilot. The intergenerational involvement ensures that sustainable habits are passed from children to parents, creating a durable shift in the household consumption culture.

6.9.3. Environmental impact

The primary environmental benefit of the pilot action is the direct reduction in the volume of food waste generated at the source. By shifting household behaviour from a "here-and-now" reactive model to a proactive, planned routine, the program effectively lowers the carbon footprint associated with the production, transport, and eventual disposal of wasted food. This systematic reduction in domestic waste minimizes the methane emissions produced by organic matter in landfills, aligning directly with the Interreg Italy-Croatia Program's goals for a greener, more circular economy. Furthermore, the adoption of professional preservation techniques, such as vacuum sealing and "meal prep" of base ingredients, optimizes resource efficiency within the home. This leads to a decrease in the



over-purchasing of perishable goods, thereby reducing the environmental strain on primary production and the entire food supply chain. By fostering a "mental opening" toward the creative reuse of food scraps and leftovers, families transform potential waste into valuable resources, effectively closing the nutrient loop at the household level.

6.10. CONCLUSIONS

The “Famiglie insieme contro lo spreco alimentare” pilot action has successfully demonstrated that food waste reduction in the domestic environment is achievable through a combination of behavioral awareness and technical empowerment. By transitioning families from a reactive "here-and-now" style to a structured management model, the project directly contributed to the overarching goal of reducing the environmental footprint of sustainable food systems.

The pilot's success is evidenced by several key outcomes:

- **Significant behavioral shift:** The implementation of meal planning tools and the correction of food label misconceptions resulted in a dramatic increase in household efficiency, with meal planning frequency rising by over **50%** (+51.4% net improvement).
- **Measurable waste reduction:** The pilot achieved a substantial increase in "zero waste" households (rising from 28.6% to 60.0%), proving that practical show-cooking sessions and targeted conceptual tools are effective catalysts for immediate impact.
- **Intergenerational impact:** By using the family diary as a practical framework for household discussion rather than a rigid home-tracking chore, the action successfully triggered intergenerational communication. Children acted as sustainability catalysts



within the home, turning the workshop concepts into shared family reflections and fostering long-term habit formation within the household culture.

- **Professional skill acquisition:** Participants moved beyond generic awareness to master professional techniques such as vacuum sealing, small-dose freezing, and "meal prep," which provide ongoing economic and environmental benefits.

Despite challenges regarding participant retention (60% cohort continuity) and the friction inherent in manual monitoring tools, the pilot provides a robust and transferable methodology. The modular structure of the sessions allows for easy replication in other socio-economic contexts, such as schools or community centers.

In conclusion, this pilot action serves as a successful blueprint for the Interreg Italy-Croatia program, illustrating how local community engagement can effectively address global environmental challenges through practical, scalable solutions.

This section provides documentary and visual evidence supporting the implementation and assessment of the Pilot Action.

Figure 22: 09/03/2026 – Round Table



Figure 23:: 30/03/2026



Figure 24:: Attendance Sheet

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ECOFOODCYCLE D2.2.1 SSPA - FAMIGLIE insieme contro lo spreco alimentare
09/03/2024

Accordo all'uso dei dati secondo richiesta Privacy Allegato

Partner	Full Name	Email	Signature	
ECAMRICERT	MARIA VALENTINA VANCEO	research@ecamricert.it		Si
1 ^a	DOMENICO RACANELLI	DOME.RACANELLI@GMAIL.COM		Si
1 ^a	MARTINA SPADARO	martina.spadaro@gmail.com		Si
5 ^a	Michele Patella	mypat@libero.it		Si
4 ^a	RACASANU MIRELA	RACASANU MIRELA@GMAIL.COM		Si
5 ^a	ROBERTA AMORE	Rob.amore1@gmail.com		Si
ECAMRICERT	GIADA ANOPEI			Si
	TOMMASO PARDO	PARDO TOMMASO@PDA.EMILIA.COM		Si

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ECOFOODCYCLE
D2.2.1 Small Scale Pilot Action
Famiglie insieme contro lo spreco alimentare
20 Marzo 2024

Con la presente acconsento all'utilizzo di immagini e dati personali in conformità con l'informativa sulla privacy allegata: SI / NO

Partner/Classe	Full Name	Email		Firma
COMUNE DI PADOVA	SILVIA SCHIAVON	SCHIAVONS@COMUNE.PADOVA.IT	Si	
1 ^a e 4 ^a	ELISABETTA MOUNCU	ELISABETTA@YAHOO.IT	Si	
1 ^a	GIUSEPPE GALIATTO	Jappo22@libero.it	Si	
1 ^a	DOMENICO RACANELLI	DOME.RACANELLI@GMAIL.COM	Si	
ECAMRICERT	GIADA ANOPEI		Si	
1 ^a	MARTINA SPADARO	famiglia@bottacin.com	Si	
4 ^a	RACASANU MIRELA	RACASANU MIRELA@GMAIL.COM	Si	
	TOMMASO PARDO		Si	

Figure 25:: Guidebook



ECOFOODCYCLE – Famiglie insieme contro lo spreco alimentare Marzo 2026

Un percorso per promuovere la consapevolezza sullo spreco alimentare nella vita quotidiana delle famiglie, attraverso la collaborazione tra genitori, studenti e scuola.

Dispensa creata in collaborazione con Chef Tommaso Pardo

Obiettivo della guida

Questa dispensa raccoglie suggerimenti pratici e ricette semplici per organizzare meglio il cibo in casa, ridurre lo spreco e trasformare avanzi e scarti in nuove preparazioni.

See the full guidebook in Annex III



7. SMALL SCALE PILOT ACTION n.7 – PP7, University of Foggia (UNIFG)

7.1. PILOT ACTION OVERVIEW

Name of the Pilot Action

"AI Smart Box - EcoFoodCycle"

Partner & Location

- **Partner (PP):** University of Foggia (PP7) / Implementing Partner: Mercati di Città La Prima S.r.l.
- **Location of the pilot action:** Foggia, Apulia, Italy (Mercati di Città La Prima retail stores)

Implementation Period

- **Start date:** 01/04/2026
- **End date:** 15/05/2026

7.2. DESCRIPTION OF THE PILOT ACTION

7.2.1. Background and Relevance

Despite the implementation of dynamic discounting, retail stores face ongoing economic losses and environmental impacts due to unsold near-expiry products. Traditional disposal methods fail to capture the residual value of perfectly edible food. The "AI Smart Box" pilot was developed to directly address this gap by valorizing these products rather than merely



discounting them, aligning perfectly with the EcoFoodCycle goal of reducing the environmental footprint of the food supply chain.

7.2.2. Objectives of the Pilot Action

The primary objective is to radically reduce in-store food waste by transforming near-expiry goods into an attractive, fixed-price consumer product (the Smart Box). By utilizing an AI-driven QR code, the project aims to eliminate domestic waste by guiding the customer on how to cook exactly what is inside the box.

7.3. CHARACTERISTICS OF THE PILOT ACTION

Table 43: Pilot Action Overview

Element	Description
Location of the pilot action	Foggia (Italy) - Supermarket retail environment.
Specific objective	Optimize food use efficiency and reduce retail food waste.
Type of action	Product & Service Innovation.
Stakeholders involved	Retailers, Consumers
Implementation period	April 2026 - May 2026.

7.4. STAKEHOLDER INVOLVEMENT

7.4.1. Stakeholders Involved

Table 44: Stakeholder Engagement & Role Matrix

Stakeholder	Category	Role in the pilot action
Mercati di Città La Prima	Retailers & Supermarkets	Implementer of the pilot action in-store.
University of Foggia	Research institutions	Institutional partner, scientific monitoring, and target audience engagement.
Local Consumers / Students:	Consumers & Households	End-users testing the Smart Box and interacting with the AI Virtual Chef.

7.5. ACTIVITIES IMPLEMENTED

7.5.1. Description of Activities

The implementation followed a precise 4-week roadmap. It began with the supply of sustainable kraft packaging and the definition of product clusters (price tiers). Subsequently, the technological infrastructure was established by configuring dynamic QR codes linked to the AI prompt system and Google Forms for data collection. A crucial phase was the rapid staff training to ensure efficient daily box assembly. The final phase was the official market launch.



7.5.2. Timeline of Main Activities

Table 45: Small-Scale Pilot action timeline

Period	Main activities
Week 1: Setup	Packaging procurement and definition of fixed-price product clusters.
Week 2: Tech	Configuration of the AI prompts, dynamic QR Codes, and tracking tools.
Week 3: Training	Fast-track training for store staff on box assembly and checkout
Week 4: Go Live	Official in-store launch.

7.6. MONITORING AND PROGRESS

7.6.1. Monitoring Approach

The monitoring relied on a dual approach: internal retail metrics and external consumer data. Sales volumes and inventory adjustments were tracked daily via the store's POS (Point of Sale) system to measure the exact amount (kg) of food saved and the economic return (ROI). Consumer engagement and qualitative feedback were continuously monitored through an integrated Google Form accessible via the AI recipe QR code.



7.6.2. Objectives, Indicators and Measurement Methods

This section links the pilot objectives with measurable indicators and monitoring methods. Partners shall select and adapt the indicators relevant to their Small-Scale Pilot Action (SSPA).

Table 46: Monitoring & Evaluation Plan

Objective	Indicator	Measurement method
Reduce unsold products in retail sector	Amount of food sold via anti-waste channels	Inventory and sales tracking
Test digital tools for waste monitoring or inventory	Number of users actively using the tool and User satisfaction rating	App analytics / usage logs
Change consumer behavior in households	Number of participants (customers successfully utilizing the AI Virtual Chef recipe)	Post-use feedback surveys (integrated Google Form)

7.6.3. Progress Against Indicators

Table 47: Small-Scale Pilot Action Progress Against indicators

Indicator	Baseline	Target	Current value	Status
Units sold	0 units	100 units	2 units	
Kg saved	0 kg	150 kg	3 kg	



7.7. RESULTS AND PRELIMINARY OUTCOMES

7.7.1. Main Results Achieved

The pilot action "AI Smart Box" achieved highly positive outcomes during its initial test phase, successfully proving the viability of combining technological innovation (AI and dynamic QR codes) with circular economy principles in the retail sector. The initiative demonstrated that sustainability can be seamlessly integrated into daily supermarket operations while generating economic value.

7.7.2. Strengths and Weaknesses Identified During the Pilot Action

Strengths:

- **Innovation & Engagement:** High customer interaction driven by the AI "Virtual Chef" via QR code.
- **Economic Valorization:** Successfully transformed guaranteed near-expiry food losses into profitable active margins.
- **Market Appeal:** Strong positive reception from target demographics (students and professionals) and highly recognizable packaging.

Weaknesses:

- **Operational Load:** Manual selection of products and physical assembly of boxes require dedicated staff time during store hours.



- **Checkout Friction:** Potential delays at the cash register without the implementation of standardized, fixed-price EAN barcodes.
- **Cold Chain and Hygiene Maintenance:** *Ensuring the continuous maintenance of sanitary conditions and the cold chain for perishable goods assembled inside the boxes poses a significant logistical challenge on the shop floor.*
- **Tech Maintenance:** *The need to daily update the dynamic QR codes to match the box contents requires constant supervision and digital literacy from the staff.*

7.8. DISSEMINATION AND COMMUNICATION

7.8.1. Dissemination of Results

Description of communication and dissemination activities linked to the pilot action.

Table 48: Dissemination of results

Activity	Target audience	Date
Cross-Border Multi-Stakeholder Meeting:	Interreg Partners & International Stakeholders	28-29/04/2026
Local Trading "Spreco Alimentare: dalla consapevolezza all'Azione Creativa"	Università degli studi di Foggia	11-12/05/2026
In-store Visual Merchandising	Supermarket Customers	April-May 2026



7.9. TRANSFERABILITY AND ENVIRONMENTAL BENEFITS IN LINE WITH ECOFOODCYCLE ONES

7.9.1. Transferability

The "AI Smart Box" model demonstrated exceptionally high transferability. A key future development involves the creation of highly customized thematic boxes catering to specific dietary or lifestyle clusters (e.g., celiacs, halal, vegetarians, athletes). Additionally, we envision the possibility for customers to conveniently compose their own customized boxes directly through a dedicated mobile app. Furthermore, there is strong potential to involve local culinary schools for recipe generation, integrating educational institutions into the retail ecosystem.

7.9.2. Sustainability

Unlike many sustainability initiatives that rely on continuous funding, this pilot action is economically self-sustaining. The retail company can permanently integrate this process into its daily operations beyond the Interreg project duration.

7.9.3. Environmental impact

The pilot action directly diverted edible food from landfills. This directly translates to significant savings in greenhouse gas (GHG) emissions—specifically avoiding the methane released during food decomposition and validating the energy and water resources originally used in the food's production.



7.10. CONCLUSIONS

The EcoFoodCycle "AI Smart Box" pilot successfully bridged the gap between environmental responsibility and commercial viability. By leveraging simple but effective technologies (dynamic QR codes and AI) combined with a smart pricing strategy, the project proved that near-expiry food can be actively valorized. The highly positive response from both consumers and major retail stakeholders confirms that the model is robust, scalable, and ready to be integrated into broader sustainable food systems across the retail sector.



This section provides documentary and visual evidence supporting the implementation and assessment of the Pilot Action.

Figure 26: In-store display of the EcoFoodCycle Smart Boxes during the pilot action presentation at the retail point in Via Zara, Foggia.



Figure 27: Local Training – “Spreco Alimentare: Dalla Consapevolezza all’Azione Creativa” 11-12/05/2026



8. SMALL SCALE PILOT ACTION n.8 – PP8, National Confederation of the craft sector and small and medium enterprises Abruzzo (CNA ABRUZZO)

8.1. PILOT ACTION OVERVIEW

Reducing food waste is now a strategic priority within European sustainability policies, in line with the objectives of the ECOFOODCYCLE – Reducing Food Waste and its Environmental Footprint through Sustainable Food Systems project. In this context, cultural and creative sectors, traditionally less involved in environmental policies, are increasingly called upon to actively contribute to the transition towards more responsible and circular models.

Film sets represent complex and dynamic environments, characterized by intensive resource management, including the preparation and distribution of meals for crew members, actors, and extras. Without proper planning and monitoring tools, these contexts can generate significant amounts of food waste, often due to overproduction, inaccurate attendance forecasting, or organizational inefficiencies.

The ECOFOODCYCLE project addresses this challenge by proposing an innovative approach that integrates green protocols, training activities, and on-field experimentation, with the aim of transforming film sets into real laboratories of sustainability. Through pilot actions, such as the one implemented by CNA Abruzzo, a

Adriatic Film Festival with the IFA Cinema School, it is possible to test concrete solutions for preventing and reducing food waste, while simultaneously raising awareness among all stakeholders involved.



The initiative is based on a structured monitoring system and practical tools – including meal booking systems, reusable containers, informational materials, and operational protocols – which enable effective intervention across the entire food management chain on set.

Within this framework, cinema becomes not only a means of artistic expression, but also a powerful driver of cultural change, capable of promoting good practices and contributing to the development of replicable models for sustainable management, in line with the principles of circular economy and environmental responsibility.

8.2. DESCRIPTION OF THE PILOT ACTION

The pilot action on food waste reduction in film sets was designed and implemented within the framework of the ECOFOODCYCLE project, with the objective of testing practical, scalable, and sustainable solutions in a real production environment. The initiative aimed to transform the film set into an operational testing ground where environmental sustainability, resource efficiency, and behavioural change could be simultaneously addressed and evaluated.

The pilot was carried out in the context of an active film production involving a heterogeneous group of participants, including directors, producers, technical staff, actors, extras, and catering operators. This setting provided a dynamic and realistic scenario, characterised by time constraints, fluctuating attendance, and complex logistical requirements, all of which typically contribute to inefficiencies in food management and increased food waste.



In order to ensure a structured and measurable approach, the pilot was organised into three sequential and interrelated phases; in addition to a dedicated preparatory phase focused on training. Before the start of the operational activities, a preliminary phase was introduced, aimed at ensuring an adequate level of awareness and alignment among all participants.

This pre-phase consisted of a dedicated training session, during which the principles and practical applications of the Green Protocol were presented and discussed, with a specific focus on sustainable food management within film production environments.

The training actively involved students and on-set participants, fostering a shared understanding of the importance of reducing food waste not only from an environmental perspective, but also in terms of social responsibility and economic sustainability. Particular emphasis was placed on the ethical dimension of audiovisual productions, highlighting how the adoption of sustainable practices contributes to enhancing the overall responsibility and quality of film productions.

An additional key aspect addressed during the training concerned the growing relevance of sustainability within funding frameworks and public calls in the cinema and audiovisual sector. In this context, the integration of the Green Protocol was presented not only as a responsible choice, but also as a strategic asset capable of increasing the competitiveness and eligibility of productions within funding schemes.

This preparatory phase laid the foundation for the effective implementation of the pilot activities, ensuring that all stakeholders were adequately informed, engaged, and aligned with the sustainability objectives of the ECOFOODCYCLE project.



Then, the first phase, baseline analysis, was dedicated to observing existing practices without introducing corrective measures. This initial assessment allowed for the identification of critical issues related to food preparation, distribution, and consumption, including overproduction, limited control over portioning, and low awareness among participants. The data collected during this phase established a reliable reference point for evaluating subsequent improvements.

The second phase, operational implementation, focused on the introduction of targeted measures aimed at reducing food waste and improving overall efficiency. These measures included the adoption of portion-controlled meals, the use of biodegradable and compostable materials, and the implementation of a meal booking system managed through digital communication tools. At the same time, a structured awareness campaign was carried out, involving direct engagement with all participants and continuous communication on the importance of responsible food consumption.

The third phase, final monitoring and evaluation, was conducted using the same criteria and indicators defined during the baseline phase. This ensured consistency and allowed for a direct comparison between initial conditions and final outcomes. The evaluation combined quantitative data—such as the amount of food waste generated, meals prepared and consumed, and food donation practices—with qualitative observations related to behavioural change and adherence to the Green Protocol.

Throughout all phases, the pilot was supported by a set of operational tools and guidelines, including monitoring templates, informational materials, and on-site communication



instruments such as brochures and QR codes. These tools facilitated both the implementation of sustainable practices and the active involvement of stakeholders.

The pilot action therefore represents a comprehensive and integrated approach to food waste reduction, combining technical solutions, behavioural strategies, and continuous monitoring. By moving from observation to intervention and evaluation, the initiative not only achieved measurable results but also provided a validated methodology that can be replicated and adapted in other contexts.

Overall, the pilot demonstrates that effective food waste management in complex environments requires a balanced combination of planning, operational tools, and stakeholder engagement, fully aligned with the objectives of the ECOFOODCYCLE project and broader European sustainability policies.

8.3. CHARACTERISTICS OF THE PILOT ACTION

The pilot action is characterised by the introduction of practical, immediately applicable, and easily replicable solutions, specifically designed to address the main causes of food waste within film production environments. The following elements represent the most relevant operational features of the pilot implementation.

1) Use of Single-Portion Meals in Biodegradable Containers

The adoption of single-portion meals served in biodegradable containers represents one of the core elements of the pilot action. This approach allows for precise control over the quantities distributed, preventing over-portioning, which is typically associated with buffet-



style or uncontrolled food distribution systems. Single portions ensure a close alignment between the number of meals prepared and the actual number of people present on set, significantly reducing the risk of surplus.

From a hygiene and organisational perspective, single portions provide a safer and more controlled food management system, avoiding multiple handling and potential contamination. Moreover, they prevent inefficient behaviours such as excessive plate filling, which often leads to uneaten food being discarded. The use of biodegradable containers further enhances environmental sustainability by enabling proper organic waste management and supporting composting processes. This approach integrates food waste reduction within a broader circular economy framework.

Finally, the standardisation of portions simplifies consumption monitoring, making it easier to identify discrepancies between distributed and consumed food.

2) Meal Booking System via WhatsApp

The introduction of a meal booking system via WhatsApp proved to be a simple yet highly effective solution for reducing organisational inefficiencies. This tool allows for the advance collection of the exact number of participants who will consume meals, eliminating the need to create precautionary buffers, which are often responsible for overproduction.

In dynamic environments such as film sets, where attendance may vary frequently, the booking system enables real-time updates and more accurate catering planning. As a result, the number of meals prepared closely matches the actual needs of the crew.



This system also promotes individual responsibility, as participants actively confirm their presence and meal consumption, reducing disorganised or opportunistic behaviours.

From an operational standpoint, it is a zero-cost, easily replicable solution that demonstrates how simple digital tools can have a significant impact on reducing food waste.

3) Food Waste Weighing and Analytical Monitoring

The systematic measurement of food waste is a crucial step in transforming a general issue into a measurable and manageable process. By weighing food waste on a daily basis, the pilot established a structured monitoring system based on concrete data rather than assumptions.

This approach makes it possible to identify which food categories generate the highest levels of waste (e.g. vegetables, pasta, bread, or fruit), enabling targeted adjustments in both quantities and menu composition.

The availability of quantitative data also allows for comparisons across different production days, highlighting progressive improvements or persistent inefficiencies. This creates a dynamic and adaptive process, where operational decisions can be continuously refined. Furthermore, monitoring strengthens stakeholder awareness by making the impact of individual behaviours visible. The numerical evidence of waste becomes a powerful tool for both accountability and behavioural change.

4) Controlled Coffee Break Management



An often underestimated but relevant aspect of food and resource waste concerns coffee break management. Within the pilot, a controlled approach was introduced: only individuals who intend to consume coffee prepare it themselves at the time of consumption. This method avoids the common practice of preparing multiple coffees in advance for convenience, which often results in unused, cold beverages that are eventually discarded. By eliminating pre-preparation, beverage waste is significantly reduced. Additionally, this approach promotes individual responsibility and reduces inefficient organisational habits. The coffee break becomes a consciously managed moment, with no unnecessary consumption of resources. Once again, this is a simple, no-cost solution that effectively addresses a category of “hidden waste” that is often overlooked in standard monitoring processes.

5) Integration of Operational Tools and Behavioural Change

One of the most relevant characteristics of the pilot action is the integration of technical solutions with behavioural change dynamics. The adopted tools (portion control, booking system, monitoring) were not implemented in isolation, but supported by continuous awareness-raising and stakeholder engagement activities. This approach transformed operational rules into shared practices, internalised by participants. The change was not imposed, but developed through dialogue, observation, and real-time feedback on set. The combination of practical tools and increased awareness generated a multiplier effect, improving not only operational efficiency but also the overall quality of collective behaviour. This element represents one of the key success factors of the pilot and constitutes the foundation for its replicability in other contexts.



Particularly relevant was the intervention of the CNA system on the film set during the intermediate day, engaging with and actively interacting with the film crew, thereby reinforcing awareness on the importance of reducing food waste.



8.4. STAKEHOLDER INVOLVEMENT

The pilot action developed within the ECOFOODCYCLE framework was characterized by a multi-actor and participatory approach, where different categories of stakeholders contributed at various levels to the successful implementation of food waste reduction practices within the film set. This integrated involvement was essential not only for operational effectiveness but also for ensuring behavioural change and long-term impact.

At the core of the pilot were the film production stakeholders, who represented the primary actors directly engaged in the daily dynamics of the set. This group included the director, producer, co-producer, technical crew, actors, and extras, all of whom played a fundamental role in shaping consumption behaviours. Their involvement went beyond passive participation: through direct engagement, continuous communication, and awareness-raising actions, these stakeholders became active contributors to the adoption

of the Green Protocol. Their behavioural shift—particularly in terms of portion control, attention to food consumption, and reduction of waste—was one of the most significant outcomes of the pilot.

Closely connected to this group were the catering and food management actors, responsible for the preparation, distribution, and logistical handling of meals. Their role was crucial in translating sustainability principles into practice. Through the introduction of portion-controlled meals, biodegradable packaging, and improved distribution systems, catering operators became key drivers of operational change. The pilot highlighted how their coordination with production teams can significantly reduce inefficiencies and prevent food surplus.

A distinctive feature of the pilot was the strong involvement of educational stakeholders, particularly the IFA Cinema School in Pescara and its students. This component added a capacity-building dimension to the initiative, transforming the set into a learning environment where sustainable practices were not only applied but also understood and internalised. Students actively participated in both the implementation and observation phases, contributing to the dissemination of knowledge and ensuring future replicability of the model.

The pilot was coordinated and structured by CNA Abruzzo, within the broader framework of the ECOFOODCYCLE project partnership, ensuring methodological consistency, monitoring, and alignment with European sustainability objectives. The Adriatic Film Festival played an operational role by organising the film set in Montebello di Bertona and ensuring the



effective coordination and engagement of the entire film crew and the IFA Cinema School within the ECOFOODCYCLE project, contributing directly to the achievement of its objectives.

Beyond the directly involved actors, the pilot also generated value for a wider group of indirect stakeholders, including local communities, such as the Mayor of Montebello, film industry professionals, and public institutions. These actors, although not physically present on set, represent the broader ecosystem that can benefit from and adopt the tested solutions, contributing to the scalability and transferability of the model.

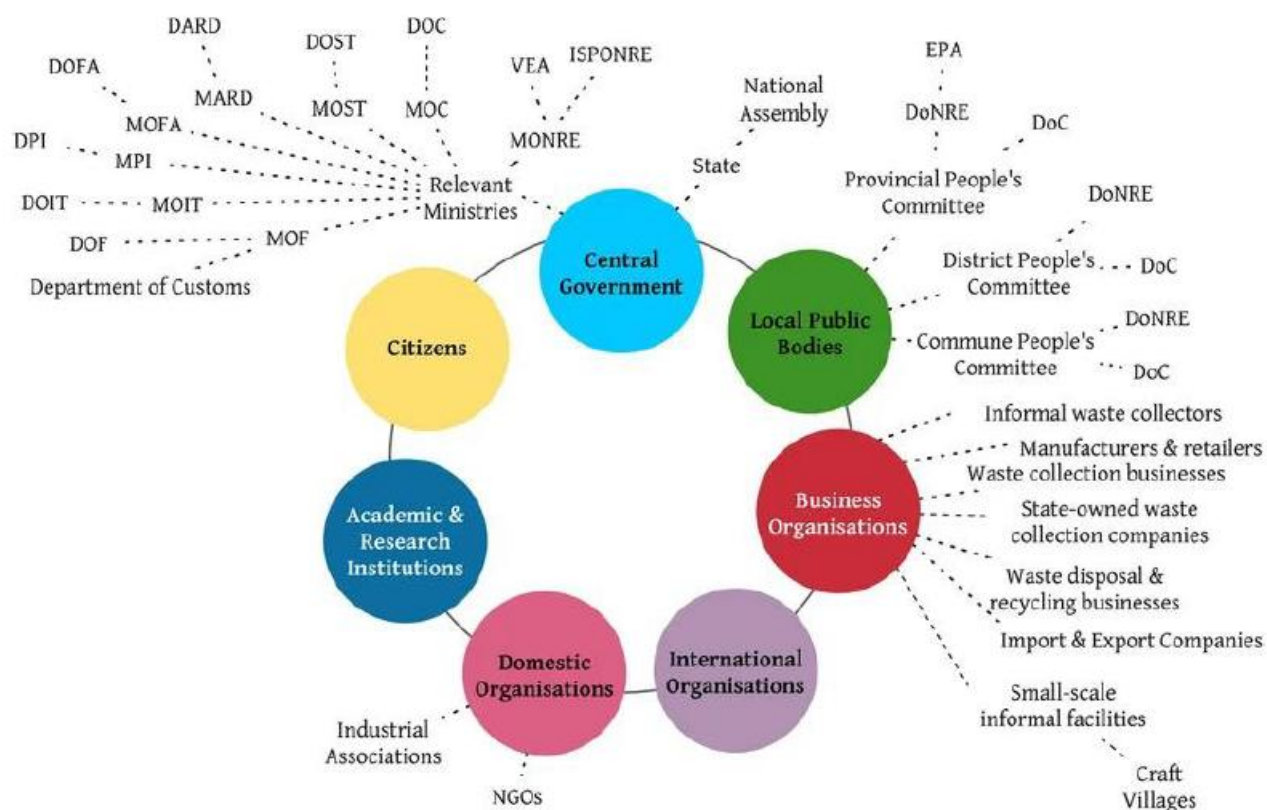
Overall, the stakeholder involvement in the pilot demonstrates a systemic approach, where each category contributes to a different dimension of impact:

- decision-making and coordination (production and project partners)
- operational implementation (catering and crew)
- behavioural change (all on-set participants)
- capacity building and dissemination (educational actors and festivals)

This integrated model confirms that reducing food waste in complex environments such as film sets requires not only technical solutions but also collective responsibility and coordinated action across multiple stakeholders.



Figure 28: Stakeholder mapping and governance structure.



8.5. ACTIVITIES IMPLEMENTED

The operational phase of the pilot represented the decisive moment in which the project moved from a conceptual and methodological framework to a fully applied, real-world intervention within the film set environment. This phase was not limited to the mere activation of predefined measures, but rather constituted a dynamic and adaptive process in which solutions were continuously tested, refined, and aligned with the operational rhythms and constraints of film production.

At its core, the implementation phase required the integration of sustainability principles into daily workflows, without disrupting the efficiency and timing of the production process. This required a careful balance between environmental objectives and operational feasibility, ensuring that the introduction of new practices—such as portion control, material substitution, and improved distribution systems—was seamlessly embedded into existing routines.

A key element of this phase was the real-time coordination between production and catering services. Food preparation was no longer treated as a fixed process but as a flexible system, dynamically adjusted according to actual attendance and consumption patterns. This shift significantly reduced discrepancies between meals prepared and meals consumed, addressing one of the primary drivers of food waste in film sets: overestimation and lack of communication between operational units.

Another critical dimension of the implementation phase was the management of behavioural dynamics under real conditions. Unlike controlled environments, the film set presented constant variability in terms of schedules, locations, and participant engagement. Within this context, the project adopted a proactive approach based on continuous interaction, immediate feedback, and situational reminders. The presence of the project team on set allowed for direct dialogue with participants, reinforcing correct practices and addressing emerging inefficiencies in real time.

The implementation phase also introduced a shift from passive consumption to conscious participation. Participants were not only recipients of food services but became active actors in the process, encouraged to make responsible choices regarding portion sizes, waste



separation, and overall consumption behaviour. This transformation was facilitated by visible and accessible tools—such as labelled containers, clear distribution points, and simplified communication messages—which translated abstract sustainability principles into tangible daily actions.

Particular attention was given to the micro-logistics of food distribution, often overlooked but crucial in determining waste generation. The organisation of distribution points, timing of meal delivery, and physical handling of food were carefully observed and progressively optimised. This included reducing informal consumption outside designated areas, improving flow management during peak times, and ensuring consistency in portioning practices across all service moments.

Furthermore, the phase was characterised by a continuous validation loop, where observations immediately informed adjustments. Rather than applying a rigid model, the pilot adopted an iterative approach, allowing the system to evolve in response to on-site evidence. This adaptability proved essential in addressing unforeseen behaviours and operational constraints, demonstrating that effective implementation in complex environments requires flexibility as much as planning.

Finally, the operational phase established a direct link between action and measurable impact, creating the conditions for a reliable evaluation in the subsequent stage. By embedding monitoring mechanisms within daily operations, the project ensured that every implemented measure could be assessed in terms of effectiveness, efficiency, and behavioural influence.



Overall, the implementation phase demonstrated that sustainability in film production is achievable when operational practices, stakeholder behaviour, and real-time management are aligned within a coherent and adaptive framework. It is within this phase that the pilot fully materialised its value, transforming theoretical guidelines into concrete, observable, and replicable practices.



8.6. MONITORING and PROGRESS

The monitoring of the pilot was structured as a progressive process divided into three distinct phases, corresponding to the three shooting days. The objective was to analyse the initial situation, implement corrective actions, and evaluate the results achieved. The entire process was based on a preliminary technical document defining the key criteria and indicators to be monitored within the film set.

The main parameters monitored included:



The collected data demonstrate a structured and consistent monitoring approach across all days of activity.

Day 1 – Baseline Monitoring (State of the Art)

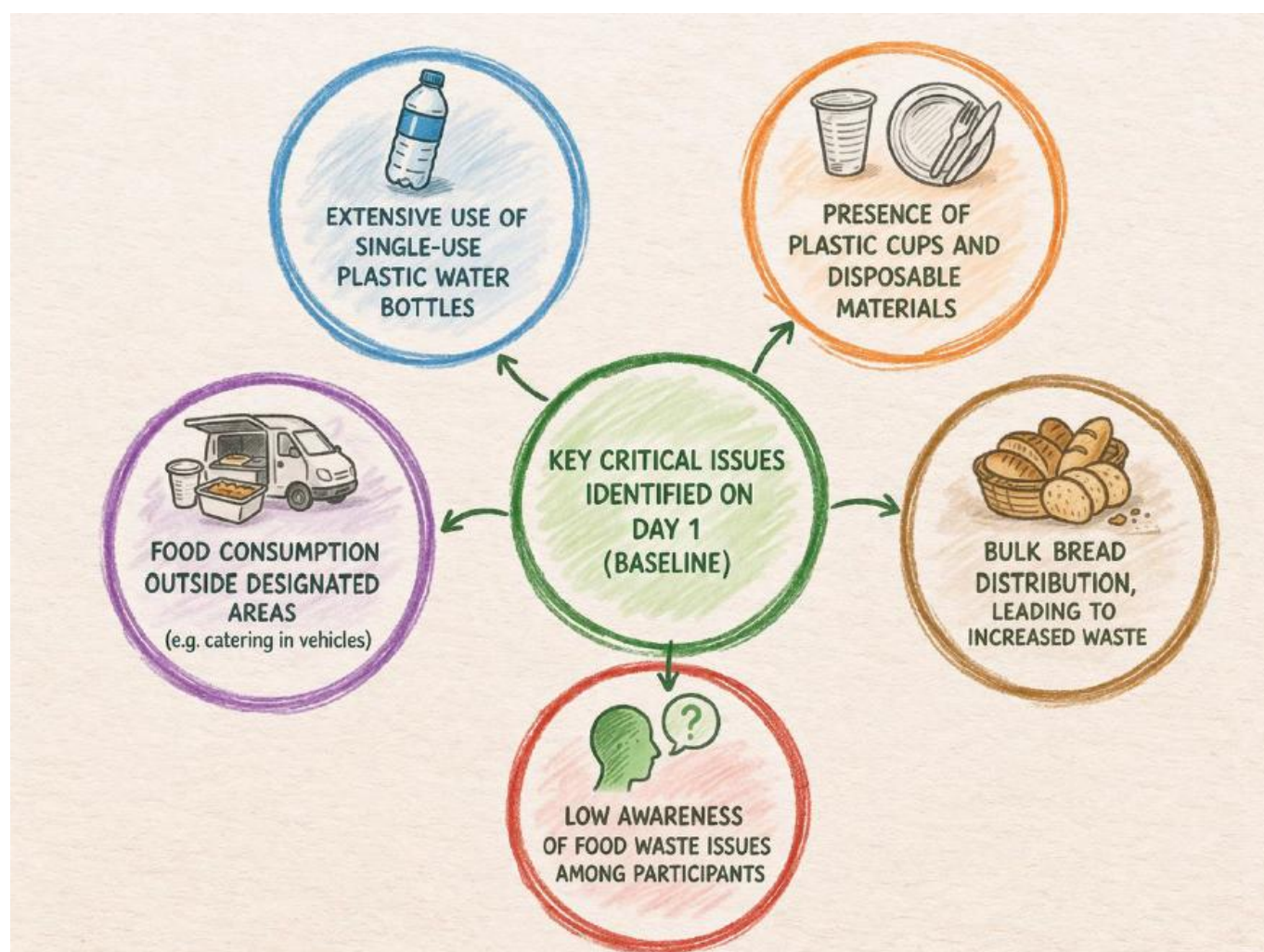
The first day of activity (12 March 2026, Montebello location) was dedicated exclusively to observation, without any corrective intervention, in order to obtain a realistic picture of existing practices.

During this phase, the following data were recorded:

- 32 people present and 32 meals prepared
- 29 meals consumed and 3 not served
- 1 kg of food donated
- 0.5 kg of food waste
- 0.5 kg of organic waste composted
- meal booking system managed via WhatsApp



From a qualitative perspective, several critical issues were identified:



Despite some positive elements, such as the use of biodegradable single-portion containers aligned with the number of participants, a clear gap emerged between the theoretical green protocol and its practical application. This phase provided the baseline for subsequent operational interventions.

Day 2 – Operational Phase and Awareness Campaign

The second day (13 March 2026, Montebello) marked the transition from observation to action, with the implementation of concrete measures to reduce food waste.

Quantitative data already showed initial improvements:

32 meals prepared and 31 consumed (only 1 not served)	0.5 kg of food donated
0.3 kg of food waste	Increase in composted organic waste to 1 kg

At the same time, a targeted awareness campaign was launched, involving all key stakeholders on set: director, producer, co-producer, actors, extras, and technical crew.

The main actions implemented included:

- direct communication on the importance of respecting food as a valuable social and environmental resource
- distribution of informational brochures with QR codes, providing access to best practices and guidelines for proper food handling
- continuous reminders of the Green Protocol principles
- reinforcement of portion control and food distribution management

This phase was crucial in shifting from a theoretical understanding of the protocol to its practical implementation, focusing on behavioural change and shared responsibility.



Day 3 – Final Monitoring and Evaluation

The third day (15 March 2026, Farindola) was dedicated to final monitoring, aiming to assess the effectiveness of the measures introduced.

The results show a significant improvement:

- 35 meals prepared and all consumed (0 meals not served)
- reduction of food waste to 0 kg
- continued food donation (0.3 kg)
- 1 kg of organic waste composted

From a qualitative perspective, the following improvements were observed:

- increased attention in food management practices
- reduction of waste related to distribution
- improved use of compostable materials
- greater collective awareness among participants

The meal booking system via WhatsApp proved to be an effective tool for avoiding overproduction and improving planning efficiency.

Operational Criteria and Tools Adopted & Monitoring Conclusions

The pilot implementation was grounded on a set of clearly defined operational criteria and practical tools, applied consistently throughout all monitoring phases, with the aim of ensuring both measurable impact and real feasibility within a film production context. From an operational perspective, the pilot introduced a structured approach to food management, starting with the use of adjustable portions and biodegradable single-portion meals. This



measure allowed for a more accurate alignment between the number of meals prepared and the actual number of people present on set, significantly reducing the risk of overproduction. The adoption of compostable tableware further contributed to minimizing the environmental footprint, ensuring that unavoidable waste could be properly managed within an organic disposal system. At the same time, the monitoring process highlighted the absence of a controlled buffet system, which emerged as a critical issue during the baseline phase. Unregulated access to food, combined with informal consumption practices, contributed to inefficiencies and increased waste. This finding was essential in guiding subsequent corrective actions, reinforcing the importance of controlled distribution methods within temporary and dynamic environments such as film sets. To support the implementation of these criteria, a range of operational tools was deployed. The meal booking system (managed via WhatsApp) proved to be a simple yet highly effective solution for improving planning accuracy and reducing surplus meals. By confirming attendance in advance, it allowed catering services to better estimate quantities and optimize food preparation. In parallel, the use of reusable and compostable containers facilitated a more sustainable distribution system, while also encouraging responsible consumption behaviours among participants. These tools were complemented by informational materials, including brochures and QR codes, which provided accessible guidance on best practices, green protocol principles, and proper food handling procedures. This combination of practical tools and awareness actions enabled a shift from a purely theoretical framework to a concrete and operational application of sustainability principles.

The monitoring methodology itself relied on a dual approach, combining direct on-site observation with quantitative data collection, ensuring both behavioural insights and



measurable evidence. This integrated system allowed for continuous evaluation and real-time adjustments during the pilot. The results of the monitoring clearly demonstrate that a structured and phased approach, based on baseline analysis, operational intervention, and final evaluation, can lead to tangible improvements in reducing food waste within film production environments. The process evolved from an initial situation characterised by organisational inefficiencies, limited awareness, and unsustainable practices, to a more efficient, controlled, and conscious management system. The introduction of simple but targeted tools, combined with stakeholder engagement, proved effective in influencing both operational dynamics and individual behaviours.

By the final monitoring phase, the pilot achieved a significant reduction in food waste, reaching full optimisation in meal consumption, with no unserved meals and minimal to zero waste generation. This outcome confirms the effectiveness of the adopted approach and highlights the potential for replicability and scalability in similar production contexts. Overall, the pilot demonstrates that even in complex and fast-paced environments such as film sets, it is possible to implement sustainable food management practices through a balanced combination of planning tools, operational criteria, and behavioural change strategies, fully aligned with the objectives of the ECOFOODCYCLE project.



8.7. RESULTS AND PRELIMINARY OUTCOMES

The pilot action carried out within the framework of the ECOFOODCYCLE project was designed to test and validate practical and scalable solutions for reducing food waste in cinematic productions. By combining environmental sustainability, behavioural change, and operational efficiency, the pilot transformed the film set into a real-life testing environment, where theoretical principles were translated into concrete actions and measurable results.

The general objective of implementing and evaluating effective food waste reduction measures was successfully pursued through a structured methodology based on baseline analysis, operational intervention, and final evaluation. The results achieved demonstrate the effectiveness of this approach and provide relevant insights for future applications in similar contexts. Quantitative Results and Performance Indicators: The monitoring activities carried out across the three days of production provide clear and measurable evidence of the pilot's impact. During the baseline phase (Day 1), inefficiencies in food management were observed, including surplus meals and initial levels of food waste. Specifically, out of 32 meals prepared, 3 were not served, and 0.5 kg of food waste was recorded. This initial assessment confirmed the presence of operational gaps and the need for targeted interventions.

Following the implementation of corrective measures and awareness actions, the second day already showed significant improvements, with only 1 unserved meal and a reduction in food waste to 0.3 kg. This demonstrates the immediate effectiveness of the operational tools introduced, particularly in improving meal planning and distribution.



The most relevant outcome was achieved on the final day (Day 3), where full optimisation was reached: all meals prepared were consumed, resulting in zero unserved meals and zero food waste. At the same time, food donation practices remained active, and organic waste composting was maintained, confirming a balanced and sustainable management system.

Overall, the pilot achieved:

- 1) 100% meal consumption rate on the final day
- 2) progressive reduction of food waste from 0.5 kg to 0 kg
- 3) significant decrease in unserved meals (from 3 to 0)
- 4) continuous integration of donation and composting practices

These results provide strong quantitative evidence of the effectiveness of the pilot and validate the adopted methodology.

Qualitative Outcomes and Behavioural Change

Beyond numerical results, the pilot generated significant qualitative improvements, particularly in terms of behavioural change and awareness among participants. During the initial phase, a low level of sensitivity towards food waste was observed, along with unsustainable practices such as the use of single-use plastics and uncontrolled food consumption. However, through targeted engagement and continuous communication, a clear shift in behaviour was recorded.



The involvement of key stakeholders—including directors, producers, actors, extras, and technical crew—played a crucial role in this process. Daily reminders, direct interaction, and the dissemination of informative materials contributed to reinforcing the importance of respecting food as a valuable resource, both from a social and environmental perspective.

By the final day, participants demonstrated:

1. increased attention to portion consumption
2. reduced waste-generating behaviours
3. improved adherence to the Green Protocol
4. greater collective responsibility in food management

This behavioural transformation represents one of the most relevant outcomes of the pilot, confirming that awareness and engagement are key drivers of sustainable change.

Operational Improvements and Efficiency Gains

The pilot also led to important improvements in the operational management of food on set.

The introduction of a meal booking system (via WhatsApp) proved to be highly effective in aligning food preparation with actual attendance, reducing uncertainty and overproduction. Similarly, the use of biodegradable single portions and compostable materials ensured better control over distribution and minimized environmental impact.



The shift from an unstructured approach to a more planned and controlled system resulted in:

- improved coordination between catering and production teams
- better forecasting of meal quantities
- more efficient distribution processes
- reduction of informal and unregulated consumption practices

These operational gains demonstrate that even simple tools, when properly implemented, can significantly enhance efficiency in complex environments such as film sets.

Validation of Methodology and Monitoring Approach

Another key outcome of the pilot is the validation of the monitoring methodology itself. The combination of quantitative data collection and qualitative observation allowed for a comprehensive evaluation of both operational performance and behavioural dynamics.

The use of consistent indicators across all monitoring phases enabled a clear comparison between baseline and final results, ensuring reliability and transparency in the assessment process. This confirms that the adopted methodology can serve as a robust framework for future pilot actions and large-scale implementations.

Replicability: One of the most strategic outcomes of the pilot is the development of a replicable and scalable model for food waste reduction in cinematic productions.

The tools, criteria, and processes tested during the pilot can be easily adapted to different production contexts, regardless of size or location. In particular, the integration of:



simple booking systems; lett b) structured portion control lett c) awareness campaigns lett d) continuous monitoring provides a flexible and transferable model that can be implemented across the audiovisual sector and beyond. This reinforces the contribution of the pilot to the broader objectives of the ECOFOODCYCLE project, supporting the transition towards more sustainable and circular food systems.

Cultural Impact and Long-Term Perspective: Finally, the pilot demonstrated the potential of the film sector as a driver of cultural change. By integrating sustainability into the production process, the initiative contributed to raising environmental awareness not only among professionals directly involved, but also within the wider cultural and creative ecosystem.

The experience shows that sustainability can become an integral part of storytelling and production practices, influencing behaviours both on and off set. This aligns with the long-term vision of promoting a systemic change, where environmental responsibility is embedded in everyday professional practices.

Conclusion: the pilot successfully achieved its objectives, demonstrating that food waste reduction in film sets is both feasible and effective when supported by a structured approach, appropriate tools, and active stakeholder engagement. The transition from an initial state characterized by inefficiencies and low awareness to a final scenario of full optimisation and zero waste highlights the strong potential of the adopted model. These preliminary outcomes provide a solid foundation for further development, replication, and integration of sustainable practices within the audiovisual sector and other similar operational environments.



8.8. DISSEMINATION AND COMMUNICATION

The dissemination and communication activities developed within the pilot were designed to ensure wide visibility, stakeholder engagement, and awareness raising, in line with the objectives of the ECOFOODCYCLE project. The strategy combined targeted communication towards SMEs and the associative system with broader outreach actions aimed at citizens and the general public, reinforcing the idea that food waste is not only a technical issue but a social, environmental, and civic responsibility.

The dissemination and communication activities carried out within the pilot “Food Waste Reduction in Film Set” were designed to ensure broad visibility, active stakeholder engagement, and the transferability of results beyond the immediate context of the film production. In line with the objectives of the ECOFOODCYCLE project, the communication approach combined targeted outreach towards SMEs and the associative system with wider awareness-raising actions aimed at citizens and the general public.

A central element of the dissemination strategy was the development and distribution of a dedicated newsletter addressed to approximately 2,000 craft enterprises and small and medium-sized enterprises (SMEs) within the CNA Abruzzo network. This communication tool enabled direct engagement with the entrepreneurial ecosystem, providing a clear presentation of the pilot case, its objectives, the methodology adopted, and the preliminary results achieved. The newsletter was designed not only to inform but also to inspire companies to reflect on their own practices and consider the adoption of sustainable solutions in their operational contexts.



In parallel, a structured communication campaign was implemented across digital channels, including Facebook, Instagram, and the official CNA website. Specific posts and updates were published to share the progress of the pilot, highlight key actions implemented on set, and communicate the importance of reducing food waste as part of a broader sustainability agenda. The integration of these channels ensured continuity and coherence in messaging, allowing the pilot to reach both professional audiences and the wider community. The communication was intentionally extended beyond the immediate stakeholders involved in the pilot, targeting a broader audience composed of associated enterprises, professionals, consultants, and citizens. This approach reflects a strategic understanding that food waste is not limited to a specific sector but represents a cross-cutting issue affecting society as a whole. By engaging different categories of stakeholders, the pilot contributed to raising awareness on the multiple dimensions of food waste, including its environmental impact, its social implications, and its relevance as a civic responsibility.

A key aspect of the communication strategy was the emphasis on food as a valuable resource, promoting a narrative that connects sustainability with everyday behaviours and professional practices. The pilot was therefore communicated not only as a technical intervention within a film set but as a replicable model and a concrete example of sustainable innovation, capable of generating positive change across different sectors.

Overall, the dissemination activities ensured that the pilot results were effectively shared, understood, and positioned within a broader framework of sustainability and responsible consumption.



By leveraging the CNA network and adopting a multi-channel communication strategy, the initiative succeeded in amplifying its impact, fostering awareness, and contributing to a long-term cultural shift towards more sustainable and responsible food management practices.



8.9. TRANSFERABILITY AND ENVIRONMENTAL BENEFITS IN LINE WITH ECOFOODCYCLE OBJECTIVES

The pilot action on food waste reduction in film sets demonstrates a high level of transferability, in full alignment with the objectives of the ECOFOODCYCLE project, which aims to promote sustainable food systems and reduce the environmental footprint associated with food waste.

From a transferability perspective, the pilot is based on a set of simple, low-cost, and easily adaptable solutions that can be replicated across different contexts. The combination of operational tools—such as meal booking systems, portion control, use of biodegradable and compostable materials, and structured monitoring—does not require complex infrastructure or high investment. This makes the model particularly suitable not only for film productions of varying sizes but also for other sectors where food is managed in temporary or dynamic environments, such as events, festivals, tourism services, catering activities, and educational institutions.

A key element of transferability lies in the methodological approach, which follows a clear and replicable structure: baseline analysis, implementation of corrective measures, awareness-raising actions, and final evaluation. This step-by-step framework allows other organisations to adopt the model and adapt it to their specific operational conditions, ensuring both flexibility and effectiveness. Moreover, the integration of behavioural change strategies alongside technical solutions strengthens the model's applicability, as it



addresses not only operational inefficiencies but also human factors that influence food waste generation.

In terms of environmental benefits, the pilot has demonstrated tangible and measurable impacts. The progressive reduction of food waste—from initial levels observed during the baseline phase to zero waste in the final day—directly contributes to lowering the environmental burden associated with food production, transportation, and disposal. Reducing food waste means decreasing greenhouse gas emissions, limiting the use of natural resources such as water and energy, and reducing the volume of organic waste sent to landfills.

The adoption of compostable materials and organic waste management practices further enhances the environmental performance of the pilot, promoting circularity and responsible waste treatment. Additionally, the optimisation of meal preparation and distribution reduces unnecessary food production, contributing to a more efficient use of resources across the entire supply chain.

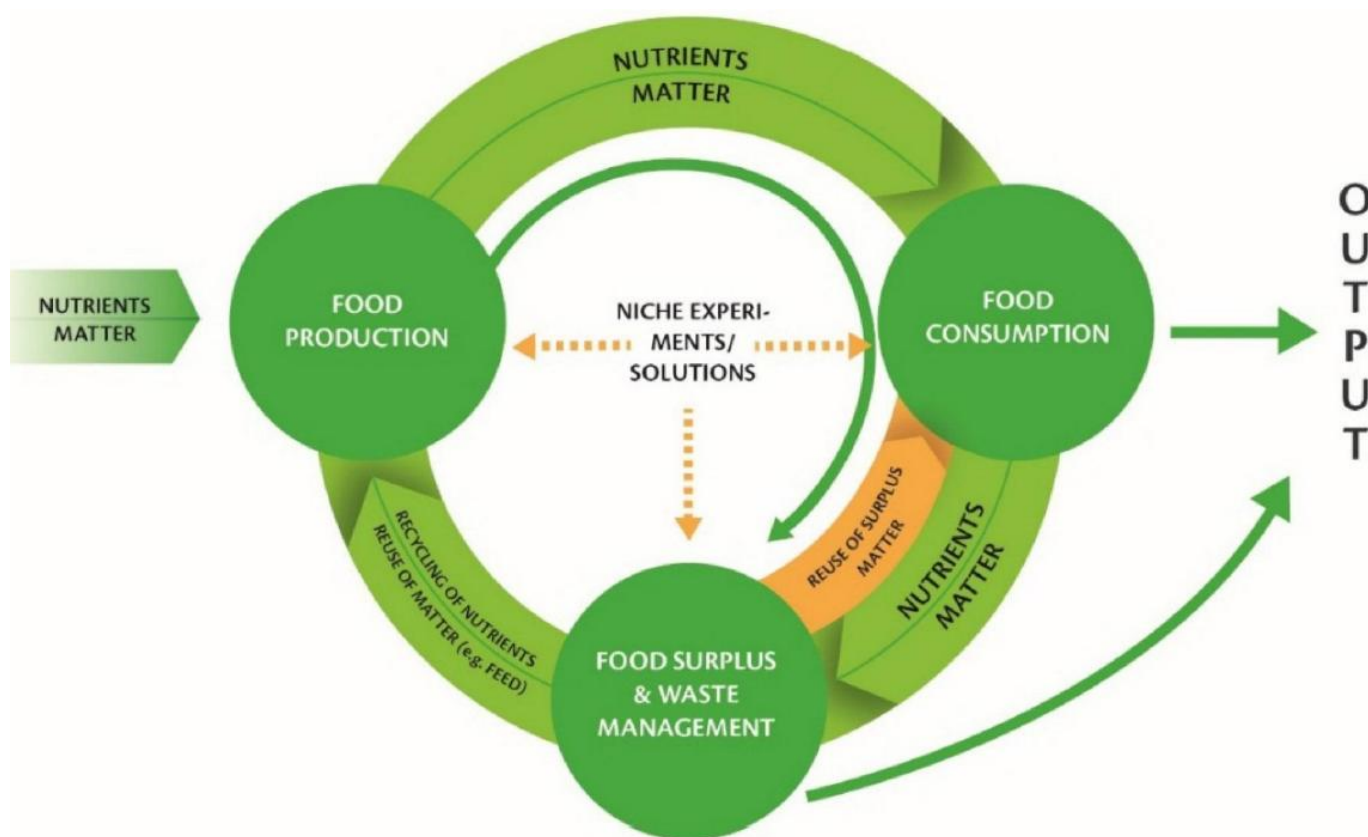
Beyond direct environmental impacts, the pilot also generates indirect benefits by fostering a culture of sustainability and responsible consumption among participants. This cultural dimension is essential for long-term impact, as it encourages the replication of good practices in other professional and personal contexts.

In conclusion, the pilot represents a replicable, scalable, and environmentally effective model, capable of contributing to the broader goals of ECOFOODCYCLE. By combining practical tools, behavioural change, and a structured methodology, it offers a concrete



pathway for reducing food waste and promoting sustainable practices across multiple sectors, supporting the transition towards more resilient and circular food systems.

Figure 29: Circular economy model for food surplus and waste management.



Long-Term Transferability Objectives

The pilot contributes to a set of long-term objectives that significantly reinforce its transferability, scalability, and strategic value, positioning the initiative as a concrete model for sustainable food management beyond the specific context of film production. The experience gained demonstrates that food waste reduction can evolve from a pilot

action into a systemic approach, capable of generating lasting impacts across multiple sectors and organisational levels.

A first key objective concerns the scaling of sustainable practices across sectors. The solutions tested within the film set—such as portion control, meal planning systems, and the use of sustainable materials—are inherently adaptable and can be extended to other industries and service environments, including events, tourism, catering, and educational institutions. This cross-sector applicability ensures that the pilot does not remain an isolated experience but becomes a reference model for wider adoption.

Closely linked to this is the objective of standardising a Green Protocol for food management. By systematising the tools, procedures, and methodologies tested during the pilot, it is possible to develop a structured and recognisable framework that can be integrated into organisational processes and operational guidelines. Such a protocol would facilitate consistency in implementation and support organisations in adopting clear and effective sustainability practices.

Another fundamental objective is capacity building and knowledge transfer. The pilot has shown the importance of strengthening skills and awareness among professionals, students, and organisations. Through training, practical experience, and dissemination activities, stakeholders are empowered to replicate and adapt the model in their own contexts. This continuous transfer of knowledge ensures that the impact of the pilot extends over time and across different environments. In addition, the pilot supports the integration of sustainable practices into policy and organisational strategies. By demonstrating the feasibility and effectiveness of food waste reduction measures, the



initiative provides a solid basis for their inclusion in local, regional, and sectoral policies, as well as in internal organisational planning. This contributes to embedding sustainability within decision-making processes and institutional frameworks. A crucial long-term objective is the promotion of behavioural change at a systemic level. The pilot highlights that reducing food waste is not only a technical challenge but also a cultural one. Encouraging long-term shifts in attitudes and consumption habits among individuals and organisations is essential to achieving durable results. By fostering awareness and responsibility, the pilot contributes to creating a culture of sustainability that goes beyond the specific project context.

Finally, the initiative aims to support the creation of a network of sustainable practices, fostering collaboration among stakeholders and enabling the exchange of experiences, tools, and knowledge. This network-based approach enhances innovation, supports continuous improvement, and strengthens the overall impact of the model at regional, national, and international levels. Overall, these long-term objectives demonstrate that the pilot is not only a successful local intervention but also a strategic foundation for broader transformation, capable of driving the transition towards more sustainable, efficient, and responsible food systems in line with the ECOFOODCYCLE vision.



8.10. CONCLUSION

The pilot action on food waste reduction within a film set, implemented under the ECOFOODCYCLE framework, represents a concrete, evidence-based demonstration of how sustainability principles can be effectively integrated into complex and dynamic operational environments. The results achieved confirm that even in contexts characterised by time pressure, logistical variability, and multiple stakeholders, it is possible to implement structured and impactful solutions for reducing food waste. The pilot successfully combined quantitative monitoring, operational tools, and behavioural change strategies, leading to measurable improvements in food management practices. The progressive transition from an initial baseline characterised by inefficiencies and low awareness to a final stage of **full optimisation**—achieving zero food waste and complete meal consumption—clearly validates the effectiveness of the adopted methodology. Beyond the immediate results, the initiative has generated significant added value in terms of knowledge, methodology, and stakeholder engagement. The integration of awareness-raising activities with practical tools has proven essential in fostering a collective sense of responsibility, demonstrating that sustainable change is achievable when all actors are actively involved and aligned towards a common objective. Importantly, the pilot has established a replicable model, supported by a clear methodological framework and adaptable operational solutions. This positions the initiative as a valuable reference for future applications not only within the audiovisual sector but also across other industries where food management plays a critical role. The alignment with ECOFOODCYCLE objectives further reinforces its relevance as a contribution to the broader transition towards sustainable and circular food systems.



From a strategic perspective, the pilot highlights the importance of moving from isolated actions to systemic approaches, where operational efficiency, environmental sustainability, and behavioural change are addressed simultaneously. The experience demonstrates that sustainability can be embedded into everyday practices without compromising operational performance, but rather enhancing it.

In conclusion, the pilot confirms that reducing food waste is not only feasible but also operationally efficient, environmentally beneficial, and socially impactful. The outcomes achieved provide a solid foundation for further development, policy integration, and large-scale replication.

This work therefore represents a reliable, transferable, and forward-looking contribution to the ECOFOODCYCLE project, offering a practical pathway for organisations seeking to adopt sustainable food management practices and to actively contribute to a more responsible and resilient future.



This section provides documentary and visual evidence supporting the implementation and assessment of the Pilot Action.

Figure 30: Signature sheet: lesson training protocol green

PROGETTO ECOFOODCYCLE

Sede : Ifa Scuola di Cinema – Pescara

Via Beato Angelico, 3

Giornata Formativa sul protocollo Green

Docente: Stefano Chiavarini (regista e produttore)

Presenza studenti :

Nome Cognome	Data di Nascita	Firma
 (RAFFAELE ALDO PINGARO)	13/01/2002	
 (SIMONE BONFIGLI)	14/04/04	
VANESSA RICCI	26/11/02	Vanessa Ricci
MATTIA RUANO	10/05/02	Mattia Ruano
RICCARDO CUELLARI	05/03/2003	Riccardo Cuellari
Benedo Sclavato	07/09/2004	Benedo Sclavato
MATTEO CHIARINI	30/11/2002	Matteo Chiavari
RENATA DE SANTIS	10/12/00	Renata de Santis

Luogo e Data

Pescara, 18 - 02- 26

Firma e Timbro

ASSOCIAZIONE
SCUOLA DI CINEMA I.F.A.
VIA BEATO ANGELICO, 3
65124 PESCARA (PE)
CF. 91141420686



Figure 31: Signature sheet: Troup on the film set

PROGETTO ECOFOODCYCLE

Sede : Farindola

Giornata n.3 - Riprese Cortometraggio 'Eco'

Relatore: Guido Casale

Presenza Staff sul Set, ritiro cestini:

Nome Cognome	Data di Nascita	Firma
LAURA PETRUCCI	8-12-83	
CARSTIANO A FELICE	29-03-81	
DIEGO DINUNZIO	03-05-2004	
MATTEO CHIAROLI	30-11-2002	
SIMONE BONFIGLI	17-04-2004	
RICCARDO CALLEORI	05-03-2003	
RAPHAEL ZINGARO	19-01-2002	
VANESSA RICCI	26-11-2002	
MATTIA ROMANO	10-05-2002	
ANTONIO DI LOMBARDO	17-01-2001	

Luogo e Data

Pescara, 15 - 03- 26

Firma e Timbro

ASSOCIAZIONE ADRIATIC MOVIE
Via Orontio 4 - 65020 SPOLTORE
C.F. 91145840681



Figure 32: Lesson training protocol green



Figure 33: Troup of the film set







PILOT PROJECT TO REDUCE FOOD WASTE ON A FILM SET

CNA ABRUZZO

START DATE: 1.3.2026

END DATE: 31.3.2026

Green Film



Un set più sostenibile è possibile!

Scansiona il QR code per saperne di più!

Buone Pratiche



ANNEX I – Small scale pilot action n.3 “Zero Waste Cook Book”



Interreg



Co-funded by
the European Union

Italy – Croatia



ECOFoodCYCLE

Zero waste cookbook



DELICIOUS RECIPES.
ZERO WASTE. FULL OF GOODNESS.





RECIPE INDEX

DELICIOUS RECIPES. ZERO WASTE. FULL OF GOODNESS.



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2. SOURDOUGH BREAD WITH
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ZERO WASTE VEGETABLE STOCK

(2 L)

Vegetable scraps from peeled and prepared vegetables: carrots, celery root, parsley root, leek, and onion

INGREDIENTS

- 500 g carrots
- 400 g onions
- 600 g celery root
- 400 g leek
- 300 g parsley root
- 1 sprig of thyme
- 4 bay leaves
- 1 g whole black peppercorns
- 6 L water
- 35 g baking soda



PREPARATION



1

Place all vegetable peelings and prepared vegetable scraps into a large bowl of water mixed with baking soda. Leave to soak for 15 minutes, then rinse thoroughly under running water and drain well.



2

Transfer the vegetables to a large pot. Add the bay leaves, thyme, and whole peppercorns, then pour in 6 litres of water. Bring to a gentle boil, then reduce the heat to low.



3

Simmer slowly for approximately 6 hours, allowing the flavours to fully develop. The stock should reduce to around 2 litres. Once finished, strain through a fine sieve to obtain a clear and aromatic broth.



4

Store the vegetable stock in the refrigerator for 3 to 6 days or freeze for up to 4 months.

TIPS & NOTES



Using vegetable scraps reduces food waste and creates a rich, flavorful stock full of nutrients.



Freeze in portions for convenient use in soups, risottos, sauces and more.



SOURDOUGH BREAD

WITH

UPCYCLED VEGETABLE SCRAPS

PREPARATION OF DEHYDRATED VEGETABLE POWDER

Vegetable scraps from peeling and preparation:
carrot, celery root, onion, beetroot, and broccoli



- 1 Place each type of vegetable separately into a solution of water and baking soda. Leave to soak for 15 minutes, then rinse thoroughly and pat dry with a clean kitchen towel.



- 2 Arrange the vegetables in a dehydrator and dry them separately at 75°C for approximately 12 hours, until fully dehydrated. Allow them to cool completely.



- 3 Grind the dried vegetables into a fine powder and store in airtight containers at room temperature.



SOURDOUGH BREAD

INGREDIENTS

- 300 g rye sourdough starter or another wholegrain cereal starter
- 600 g plain flour (Type T550)
- 45 g dehydrated vegetable powder (carrot, beetroot, celery, or other vegetable powder)
- 18 g salt
- 350 g water



PREPARATION



- 1 Knead all ingredients together until the dough develops a smooth and elastic gluten structure. Cover and leave to ferment for approximately 4 hours, or until the dough has doubled in volume.



- 2 Shape the dough into loaves and place them into proofing baskets or bowls lined with cloth. Leave to ferment for another 4 hours at 28°C, or alternatively proof overnight in the refrigerator for 10–12 hours at 3–5°C.



- 3 Transfer the loaves onto a baking tray and bake at 220°C for 25 to 45 minutes, depending on the size of the bread. Bake until the crust becomes golden brown and crisp.



TIPS



Using vegetable scraps reduces food waste and adds natural colour, flavour and nutrients to your bread.



Store vegetable powders in airtight jars in a cool, dry place.



CARROT TOP OR RADISH LEAF PESTO

A vibrant, flavourful way to
transform often-discarded greens
into something extraordinary.

INGREDIENTS

- 400 g washed carrot tops or radish leaves (soaked in a baking soda and water solution, then thoroughly rinsed)
- 50 g Parmigiano Reggiano or Grana Padano cheese
- 15 g Pecorino cheese
- 60 g walnuts
- 1 garlic clove
- 1 g black pepper
- 4 g salt
- Extra virgin olive oil



PREPARATION



- 1 Place all ingredients into a blender or crush them traditionally using a mortar and pestle. Blend until a smooth and homogeneous paste is achieved.



- 2 Transfer the pesto into airtight containers and cover the surface with a thin layer of olive oil to preserve freshness. Store in the refrigerator for up to 2 weeks or freeze for up to 5 months.

TIP

Use as a sauce for pasta, spread on sandwiches, add to soups or grain bowls, or as a topping for roasted vegetables.



CREAMY POTATO & BROCCOLI SOUP

Made with upcycled potato peelings
and broccoli trimmings

INGREDIENTS

- 100 g onion, cleaned and diced
- 300 g potato scraps or peelings
- 40 g butter
- 400 g broccoli scraps and trimmings
- Salt and black pepper, to taste
- 1 g nutmeg
- Water, as needed
- Optional: cream for finishing



PREPARATION



- 1 Soak the potato and broccoli scraps in a solution made with 30 g of baking soda and 4 litres of water. Leave for several minutes, then rinse thoroughly under running water.



- 2 Bring a pot of water to a boil and blanch the broccoli for 1 minute. Drain immediately and transfer the broccoli into ice water to stop the cooking process and preserve its vibrant green colour.



- 3 In a large pot, melt the butter over medium heat until lightly foaming. Add the diced onion and sauté gently until softened and glossy.



- 4 Add the potato scraps, broccoli, nutmeg, salt, and pepper. Pour in enough water to cover all ingredients. Bring to a boil, then reduce the heat and simmer gently for 25 to 30 minutes.



- 5 Blend the soup until smooth and creamy, then strain through a fine sieve for a refined texture.



- 6 If desired, finish the soup with a touch of cream for extra richness and a velvety consistency.



TIP



A little cream or a drizzle of olive oil enhances the soup's flavour and gives it a luxurious, velvety finish.

ZERO WASTE. FULL OF GOODNESS.

Turning scraps into something delicious is good for you and good for the planet.



VEGETABLE FRITTERS

FROM LEFTOVER COOKED VEGETABLES

A delicious way to give new life
to leftovers and reduce food waste.



INGREDIENTS

- 500 g leftover cooked or steamed vegetables
- 60 g breadcrumbs (made from leftover stale bread)
- 90 g eggs (2 small eggs)
- 12 g salt
- 2 g white pepper
- 3 g finely chopped thyme or rosemary
- 50 g béchamel sauce
- Flour, for coating
- Oil, for frying



PREPARATION



- 1 Finely dice the cooked vegetables into small cubes (brunoise) or grind them into a coarse mixture, depending on the desired texture.



- 2 Combine the vegetables with the breadcrumbs, eggs, salt, white pepper, herbs, and béchamel sauce. Mix thoroughly until all ingredients are evenly incorporated.



- 3 Shape the mixture into small fritters or patties. Lightly coat each one with flour, then fry in a shallow layer of hot oil until golden brown and crisp on both sides.



- 4 Serve warm with tomato sauce or a creamy mayonnaise-based dip of your choice.



TIP

These fritters are perfect as a main dish, side dish, or appetiser. Great for lunchboxes and meal prep!



CRISPY SMALL FISH BONE CHIPS



Made from the bones of small fish such as red mullet, anchovies, sardines, and picarel



A delicate, crunchy seafood snack
rich in flavour and texture.



PREPARATION



- 1 Thoroughly clean the fish bones and place them in a dehydrator. Dry at 75°C for approximately 12 hours, until completely dehydrated and crisp.



- 2 Heat oil to 160°C and carefully fry the dried fish bones until golden and crunchy.



- 3 Remove from the oil and place on paper towels to absorb any excess oil.



- 4 Season lightly with salt and serve warm for a delicate, crispy seafood snack rich in flavour and texture.



ZERO WASTE. FULL OF GOODNESS.

Turning fish bones into something
delicious is good for you
and good for the planet.





HOMEMADE VINEGAR

FROM APPLE OR PEAR SCRAPS



Made from fruit peelings such as
apple, pear, or plum



FERMENTATION BASE



INGREDIENTS

- 32 g sugar
- 1 L boiled and cooled water



PREPARATION

Stir the sugar into
the water until
fully dissolved.

VINEGAR PREPARATION



INGREDIENTS

- 800 g fruit peelings (apple, pear,
plum, or similar fruit scraps)
- Prepared fermentation base



- 1 Wash the fruit peelings thoroughly in a solution of baking soda and water. Rinse well and drain.



- 2 Place the fruit scraps into a clean glass jar or container. Pour over the prepared sugar-water mixture until the liquid covers the fruit by approximately 2 cm. Cover the jar with cheesecloth or gauze and secure it tightly with a rubber band.



- 3 Leave the mixture at room temperature for around 2 weeks to encourage natural fermentation and the development of alcohol. Stir gently once a day.



- 4 After two weeks, strain the liquid into another clean container. Cover again with cheesecloth and leave at room temperature for approximately 4 more weeks, allowing the alcohol to naturally transform into vinegar.



- 5 Once the vinegar has matured, transfer it into glass bottles and store in a cool, dry, and dark place.



ZERO WASTE. FULL OF GOODNESS.

Turning fruit scraps into something
valuable is good for you and
good for the planet.





FLOUR FROM ALMOND OR HAZELNUT PULP



Made from leftover pulp after
preparing homemade almond
or hazelnut milk



PREPARATION



- 1 Spread the leftover almond or hazelnut pulp evenly onto dehydrator trays and dry at 75°C for approximately 24 hours, until completely dry and crisp.



- 2 Allow the dehydrated pulp to cool fully, then grind into a fine flour.



- 3 Store the flour in an airtight container in a cool and dry place. It can be used in breads, pastries, pancakes, and other baked goods as a nutritious zero-waste ingredient.



ZERO WASTE. FULL OF GOODNESS.

Turning leftovers into something
valuable is good for you and
good for the planet.





MUFFINS

WITH

OVERRIPE BANANAS AND NUT PULP FLOUR



Made with flour from leftover
almond or hazelnut pulp



INGREDIENTS



• 180 g eggs



• 160 g flour made from
dehydrated almond or hazelnut pulp



• 140 g very ripe bananas



35 g melted coconut oil



11 g baking powder



4 g baking soda



30 g starch
(cornstarch or similar)



70 g dehydrated raspberries,
strawberries, blueberries,
or other berries

PREPARATION



1 Mash the ripe bananas thoroughly with a fork until smooth. Add the eggs, starch, nut pulp flour, baking powder, and baking soda. Mix until a smooth and creamy batter is formed.



2 Fold in the dehydrated fruit, then divide the mixture evenly into muffin cups or a muffin tray lined with paper cases.



3 Bake in a preheated oven at 170°C for 17 to 25 minutes, depending on the size of the muffins. Bake until golden and fully cooked through.



4 Allow the muffins to cool slightly before serving. Their natural sweetness and rich texture make them a perfect zero-waste treat.



ZERO WASTE. FULL OF GOODNESS.

Turning leftovers into something
delicious is good for you
and good for the planet.



ARANCINI

WITH LEFTOVER RICE AND MEAT RAGÙ



Made with leftover cooked rice,
meat ragù, or steak in sauce



INGREDIENTS



- 400 g cooked rice



- 250 g meat ragù or
leftover steak in sauce



- 5 g porcini mushroom powder



- 65 g egg (1 large egg)



- 40 g hard sheep's cheese,
finely grated



- Salt and black pepper,
to taste

PREPARATION



- 1 Finely chop or grind the leftover meat and combine it with the cooked rice. Add the egg, porcini mushroom powder, grated sheep's cheese, salt, and pepper. Mix thoroughly until a compact and homogeneous mixture is formed.



- 2 Shape the mixture into small round balls and place them in the freezer until firm.



- 3 Coat each arancini first in flour, then in beaten eggs, and finally in breadcrumbs, ensuring they are evenly covered.



- 4 Leave the coated arancini at room temperature for approximately 30 minutes so they partially thaw. Deep fry at 150°C until golden brown, crisp, and heated through.



- 5 Serve warm as a delicious zero-waste snack or appetiser.

FOR COATING



- 20 g flour



- 3 eggs, beaten



- 150 g breadcrumbs
(made from leftover
stale bread)

FOR FRYING



- Oil for deep frying



ZERO WASTE. FULL OF GOODNESS.

Turning leftovers into something
delicious is good for you
and good for the planet.





BANANA PEEL CRACKERS



INGREDIENTS



- Peels from 3 bananas



- 250 g buckwheat flour or almond flour



- 50 g olive oil



- 5 g salt



- 1 g black pepper



- Flaky sea salt, for topping

PREPARATION



- 1 Boil the banana peels in water for approximately 10 minutes until softened. Drain well, then blend while still warm into a smooth paste.



- 2 Add the flour, olive oil, salt, and black pepper to the banana peel paste. Blend again until a homogeneous dough-like mixture is formed.



- 3 Spread the mixture evenly onto a baking tray lined with baking paper, creating a thin layer approximately 3 mm thick. Sprinkle with flaky sea salt.



- 4 Bake at 150°C until crisp and golden. Allow the crackers to cool before breaking them into pieces and serving.



ZERO WASTE. FULL OF GOODNESS.

Turning leftovers into something delicious is good for you and good for the planet.



ANNEX II – Small scale pilot action n.5 “Ogni Boccone conta – Recipe Book”



Ogni boccone conta!



EcoFoodWaste Truck



Il Nostro Diario di Bordo: Piccoli Chef per il Pianeta

Siete pronti a scoprire come siamo diventati dei veri Supereroi della Terra? Tutto è iniziato con una grande scoperta e si è concluso con le “mani in pasta” e tanta fantasia. Ecco il racconto della nostra avventura!

Abbiamo scoperto che i grandi del mondo si sono riuniti per scrivere una lista di "compiti a casa" per salvare il pianeta: gli Obiettivi di Sviluppo Sostenibile (SDGs).

Ci siamo concentrati su tre missioni speciali:

Obiettivo 2: Sconfiggere la fame;

Obiettivo 12: Consumo responsabile;

Obiettivo 13: Lotta al cambiamento climatico;

Dopo aver studiato la teoria, siamo passati all'azione nel nostro **Laboratorio di Cucina Anti-Spreco**. Ci siamo trasformati in chef creativi con un obiettivo: creare piatti buonissimi partendo da quello che avevamo già!

Ecco come abbiamo inventato le nostre ricette anti-spreco:

1. L'Ingrediente Protagonista: Abbiamo utilizzato come ingrediente protagonista del nostro piatto un alimento che era avanzato dalla cena della sera prima. Invece di dirgli "addio", gli abbiamo dato una seconda vita!
2. Il Tocco Segreto: Abbiamo scelto il tipo di cottura e aggiunto ingredienti a completamento del piatto tra quelli che avevamo a disposizione in dispensa.

Il nostro segreto? Abbiamo mescolato insieme idee, risate e tanta collaborazione. Abbiamo scoperto che il pesce, un pezzetto di pane o un po' di verdure avanzate, se cucinati con amore, diventano piatti squisiti!

Sfogliate il nostro ricettario!

In queste pagine troverete le nostre invenzioni. Sono ricette nate dalla voglia di non buttare via nulla e di prenderci cura della nostra Terra, un boccone alla volta. Preparate i grembiuli... la rivoluzione anti-spreco comincia in cucina!



- CHEF SMART
- CHEF DOLLE
- CHEF FEMMINA
- CHEF LA RAGAZZA DEI DOLCI

INGREDIENTI (2 PERSONE)

- 2 filetti di halibut
- 150 g di riso
- 2 pomodori maturi (o 200 g di passata)
- 1 cucchiaino di paprika
- 1 cucchiaio di senape (ingrediente segreto)
- Sale q.b.
- Olio extravergine d'oliva

PREPARAZIONE

RISO AL POMODORO

1. Cuoci il riso in acqua salata.
2. In una padella, scalda un filo d'olio e aggiungi i pomodori tagliati (o la passata).
3. Sala e lascia restringere qualche minuto.
4. Unisci il riso cotto e mescola bene per farlo insaporire.

HALIBUT ALLA PAPRIKA

1. Asciuga i filetti e condiscili con sale e paprika su entrambi i lati.
2. Scalda una padella con un filo d'olio.
3. Cuoci il pesce circa 3-4 minuti per lato (dipende dallo spessore), finché sarà dorato fuori e tenero dentro.

CREMA ALLA SENAPE (IL TOCCO SPECIALE)

1. In una ciotolina, mescola la senape con un cucchiaio di acqua calda o un filo d'olio per renderla più fluida.
2. Aggiungi un pizzico di sale.

IMPIATTAMENTO

1. Metti il riso al pomodoro come base.
2. Adagia sopra il filetto di halibut.
3. Completa con un filo di crema alla senape sopra il pesce.



NOME RICETTA SPENOSA RICETTA

NOME GRUPPO LA SQUADRA SAPORITA

CHEFS: SMART, DOLCE, FEMMINA, LA RAGAZZA
DEI DOLCI

PROTAGONISTA SCELTO

H A L I B U T

INGREDIENTI SECONDARI RISO
PAPRIKA, SALE, POMODORO

INGREDIENTE SEGRETO
SENAPPE

PROCEDIMENTO

FORNO

POLPETTE DI HALIBUT (dentro ingredienti
secondari)
CON RISO AL POMODORO.

POLPETTE SI INTINGONO NELLA
SENAPPE



PASTA AL TONNO SPEZIATA

I TONNETTI:

- CHEF GORGONZOLA
- CHEF BISTECCHI
- CHEF DOLCINA
- CHEF SPECIALE

INGREDIENTI (2-3 PERSONE)

- 200 g di pasta
- 200 g di tonno (fresco o in scatola sgocciolato)
- 1/2 cipolla
- 1 carota , 1 costa di sedano
- 100 g di piselli
- Olio extravergine d'oliva
- Sale q.b. , Pepe nero q.b.
- Prezzemolo fresco tritato
- Peperoncino infernale (ingrediente segreto... usalo con cautela!)

PREPARAZIONE

BASE AROMATICA

1. Trita finemente cipolla, carota e sedano.
2. Scalda l'olio in padella e fai soffriggere a fuoco medio finché il tutto diventa morbido e profumato.

COTTURA DEL CONDIMENTO

1. Aggiungi i piselli e cuoci per qualche minuto.
2. Unisci il tonno e sgranalo con una forchetta.
3. Aggiusta di sale e pepe.
4. Aggiungi una piccola quantità di peperoncino infernale (davvero poco all'inizio!) e mescola bene.

PASTA

1. Cuoci la pasta in acqua salata.
 2. Scolala al dente, conservando un po' di acqua di cottura.
 3. Versa la pasta nella padella con il condimento.
 4. Aggiungi un goccio di acqua di cottura per legare il tutto.
 5. Salta per 1-2 minuti.
- Spegni il fuoco e aggiungi prezzemolo fresco tritato.
 - Completa con una macinata di pepe nero



NOME RICETTA PASTA AL TONNO SPEZIATA

NOME GRUPPO I TONNETTI

CHEFS: CHEF GORGONZOLA, CHEF BISTECCHI,
CHEF DOLCINA, CHEF SPECIALE

PROTAGONISTA SCELTO

TONNO

INGREDIENTI SECONDARI CIPOLLA, PEPE NERO,
PREZZEMOLO, PASTA, OLIO, SALE, CAROTA, SEDANO,

INGREDIENTE SEGRETO CAPPERI PISELLI
PEPERONCINO INFERNALE

PROCEDIMENTO

METTERE L'ACQUA IN UNA PENTOLA,
METTERE IL SALE, METTERE LA PASTA
NELL'ACQUA, SCALDARE IL TONNO IN UNA
PADILLA CON LA CIPOLLA, CAROTA, SEDANO,
PISELLI. METTERE PRIMA L'OLIO NELLA
PENTOLA. SCOLIAMO LA PASTA E LA
METTIAMO NELLA PENTOLA CON IL TONNO.
IMPIATARE E AGGIUNGERE IL PEPE,
PREZZEMOLO E PEPERONCINO INFERNALE
A PIACERE



CARNEVALE BISPUS

ZIBROS:

- MISTER CHEF
- CHEF CONFETTI
- CHEF LUNA

INGREDIENTI (2-3 PERSONE)

- 200 g di pasta
- 150 g di fagiolini ,1 costa di sedano
- 100 g di piselli
- 2 uova
- 30 g di burro
- 40 g di parmigiano grattugiato
- Peperoncino q.b. , Sale q.b.
- Salsa bontà (ingrediente segreto)

PREPARAZIONE

VERDURE

1. Lava e spunta i fagiolini, poi tagliali a pezzetti.
2. Trita finemente il sedano.
3. In una padella, sciogli il burro e fai rosolare il sedano.
4. Aggiungi fagiolini e piselli, sala leggermente e cuoci finché diventano teneri (aggiungi un goccio d'acqua se serve).

PASTA

1. Cuoci la pasta in acqua salata.
2. Scolala al dente, conservando un po' di acqua di cottura.

CREMA "BONTÀ"

1. In una ciotola, sbatti le uova con il parmigiano.
2. Aggiungi un cucchiaino di salsa bontà e un pizzico di peperoncino.
3. Mescola fino a ottenere una crema liscia.

MANTECATURA (STILE CARBONARA VEGETALE)

1. Unisci la pasta alle verdure in padella.
2. Spegni il fuoco.
3. Versa la crema di uova e mescola velocemente.
4. Aggiungi poca acqua di cottura per ottenere una consistenza cremosa (senza far strapazzare le uova).

FINITURA

1. Spolvera con altro parmigiano.
2. Aggiungi un tocco di peperoncino se ami il piccante.

CONSIGLIO

La "salsa bontà" può essere qualsiasi salsa ricca e saporita (tipo una crema vegetale o una salsa segreta): dà profondità e rende il piatto unico. Se è già molto sapida, riduci il sale.



NOME RICETTA: CARNAVALE BISPU

NOME GRUPPO: ZIBROS

C.F.S. MISTER CHEF, CHEF CONFETTI,
CHEF LUNA

ROTAGONISTA SCELTO

FAGIOLINI

INGREDIENTI SEGRETO

PISELLI, UOVA, PEPERONCINO, PASTA,
INGREDIENTE SEGRETO PARMIGIANO,
SALSA BONTÀ BURRO,
SEDANO

PROCEDIMENTO

— PADELLA

- 1-) preparare la salsa piccante
- 2-) mettere la pasta nella padella
- 3-) bollire la pasta dura, mettere peperoncino
- 4) gratiare la grana

- CHEF ABRACADABRA
- CHEF GUSTAL
- CHEF JORDAN
- CHEF GIORGIO

INGREDIENTI (2-3 PERSONE)

- 200 g di pasta
- 1 cespo di radicchio
- 100 g di piselli
- 200 g di pomodoro (fresco o passata)
- Olio extravergine d'oliva
- Sale q.b.
- Rosmarino (poco)
- Basilico fresco
- "Ciok" (ingrediente segreto – cioccolato fondente, meglio se >70%)

PREPARAZIONE

BASE DEL SUGO

1. Lava e taglia il radicchio a striscioline.
2. In padella, scalda l'olio con un piccolo rametto di rosmarino.
3. Aggiungi il radicchio e fallo appassire: diventerà morbido e leggermente amarognolo.

SUGO AL POMODORO E PISELLI

1. Unisci i piselli e cuoci qualche minuto.
2. Aggiungi il pomodoro e un pizzico di sale.
3. Lascia cuocere a fuoco medio finché il sugo si addensa.

IL TOCCO SEGRETO

1. A fine cottura, rimuovi il rosmarino.
2. Aggiungi una piccolissima quantità di "ciok" grattugiato (mezzo cucchiaino circa).
3. Mescola finché si scioglie completamente: darà profondità e una nota leggermente amara che esalta il radicchio.

PASTA

1. Cuoci la pasta in acqua salata.
2. Scolala al dente e saltala nel sugo.
3. Aggiungi un filo d'olio a crudo per legare

FINITURA

1. Completa con basilico fresco spezzettato a mano.
2. Un filo d'olio extravergine a crudo.

CONSIGLIO

Il cioccolato non deve sentirsi "dolce": serve solo a intensificare il sapore del radicchio e del pomodoro. Usane pochissimo, come fosse una spezia



NOME SQUADRA | VAGABONDI

NOME PIATTO: LA PASTA AL POMODORO + /
BUONA DEL MONDO!

NOME CHEFS: ABRACADABRA, GUSTAL, JORDAN,
GIORGIO

NOME PROTAGONISTA

R A D I C C H I O

NOME ALTRI INGREDIENTI: piselli, rosmarino,
basilico, pasta,
olio extra vergine, sale,
panoforno

COMBINATE IL PIATTO: CIOK

PROCEDIMENTO: prima pentola, poi padella

... COSA MI PORTO A CASA?

CHEF ... riutilizzare il cibo

CHEF...

CHEF...

CHEF





PASTA STRANA

SQUADRA NATURA STRANA:

- **SUPER CHEF**
- **CHEF FRANK**
- **CHEF VIOLA (ELEONORA)**



INGREDIENTI (2-3 PERSONE)

- 200 g di pasta
- 200 g di tonno (sgocciolato)
- 200 g di passata di pomodoro
- 1/2 cipolla
- 1/2 limone
- Olio d'oliva
- Sale
- Parmigiano



PREPARAZIONE

CUOCI LA PASTA

1. Fai bollire l'acqua, aggiungi il sale e cuoci la pasta. Scolala quando è al dente.

FAI IL SUGO

1. Taglia la cipolla piccola.
2. Mettila in padella con olio e falla diventare morbida.
3. Aggiungi la passata di pomodoro e un pizzico di sale.
4. Cuoci per 8-10 minuti.

AGGIUNGI IL TONNO

1. Metti il tonno nella padella e mescola bene.
2. Cuoci ancora per 3-4 minuti.

UNISCI LA PASTA

1. Scola la pasta e mettila nel sugo.



FINITURA

1. Spegni il fuoco, aggiungi un po' di limone.
2. Metti parmigiano sopra.



CONSIGLIO

Aggiungi il limone alla fine: è più profumato e buono



NOME SQUADRA : SQUADRA NATURA

NOME RICETTA PASTA STRANA

NOME CHEFS:

SUPER CHEF, CHEF FRANK, CHEF VIOLA
(ELEONORA)

NOME PROTAGONISTA

— — — T O N N O —

NOME ALTRI INGREDIENTI:

INGREDIENTE
SEGRETO

CIPOLLA, LIMONE,
PASTA, PARMIGIANO
OLIO D'OLIVA, SALE,
POMODORO - PASSATA

PROCEDIMENTO ^{x SALE}

- 1) BOLLIRE L'ACQUA, AGGIUNGERE LA PASTA,
 - ~~SCALDARE~~ 2) GRATTUGIARE IL PARMIGIANO
 - 3) SCALDARE LA PASSATA DI POMODORO,
- ... COSA MI PORTO A CASA?

CHEF VIOLA

CHEF ELEONORA

CHEF FRANK

CHEF

DI NON SPRECARE CIBO,
SE AVANZA LO POSSIAMO
USARE UN ALTRO GIORNO

- CHEF PINO
- CHEF CANNAVACCIUOLO
- CHEF MIA
- CHEF MARIO



INGREDIENTI (2-3 PERSONE)

- 150 g di riso
- 1/2 cavolfiore
- 120 g di lenticchie (già cotte o in scatola)
- 200 g di pomodoro (fresco o passata)
- Olio d'oliva
- Sale q.b.
- 1/2 cucchiaino di curcuma
- 1/2 cucchiaino di curry
- 1 rametto di rosmarino
- Chicchi di melograno (ingrediente segreto)



PREPARAZIONE

CAVOLFIORE SPEZIATO

1. Dividi il cavolfiore in piccole cimette.
2. In una padella, scalda l'olio con il rosmarino.
3. Aggiungi il cavolfiore e rosolalo per qualche minuto.
4. Unisci curcuma, curry e un pizzico di sale.
5. Cuoci finché diventa tenero e leggermente dorato.

BASE DI LENTICCHIE E POMODORO

1. Aggiungi il pomodoro al cavolfiore.
2. Lascia cuocere 5-7 minuti.
3. Unisci le lenticchie e mescola bene.
4. Fai insaporire per qualche minuto finché il sugo si addensa.

RISO

1. Cuoci il riso in acqua salata.
2. Scolalo e uniscilo al condimento.

IL TOCCO SEGRETO

1. Spegni il fuoco.
2. Aggiungi i chicchi di melograno freschi.
3. Mescola delicatamente.



FINITURA

1. Un filo d'olio a crudo.
2. (Facoltativo) una spolverata leggera di curry o qualche ago di rosmarino tritato finemente.



CONSIGLIO

Il melograno dà freschezza e una nota leggermente acidula e dolce che contrasta benissimo con le spezie calde e il cavolfiore



NOME SQUADRA: LOCANDA DELLA FESTA

NOME RICETTA: RICETTA SPEZIATA

NOME CHEFS:

NOME PROTAGONISTA: CAVOLFIORE

NO ME ALTRI INGREDIENTI: LENTICCHIE, RISO,
POMODORO, OLIO, SALE, CURCUMA, CURRY,
ROSMARINO

INGREDIENTE SEGRETO
MELOGRANO

PROCEDIMIENTO

PROCEDIMENTO
CUOCIAMO IL CAVOLFIORE AL FORNO CON CURRY
E CURCUMA. BOLLIAMO IL RISO. SCALDIAMO IL
POMODORO. QUANDO SONO COTTI UNIAMO TUTTI
GLI INGREDIENTI E UNIAMO OLIO
... COSA MI PORTO A CASA?

CHEF PINO: NON BUTTARE VIA CIBO E NON SPRECARLO

CHEF CANAVASNOLO: SE NON VUOI PIÙ CBO LO
MANGI DOMANI

CHEF. MIA: NON INGUINARE E NON BUTARE VIA CUBO

CHEF MARIO: NON SPRECARE CIBO E USARLO PER ALTRE CUCINE



PASTA CON TONNO ROSSO

MADE IN ITALY:

- CHEF KANJY
- CHEF CHICKEN
- CHEF FULMINE
- CHEF STELLA

INGREDIENTI (2-3 PERSONE)

- 200 g di pasta
- 200 g di tonno (fresco o in scatola, sgocciolato)
- 200 g di passata di pomodoro
- 1/2 cipolla
- 1/2 limone (succo + scorza)
- Olio d'oliva
- Sale q.b.
- Parmigiano grattugiato

PREPARAZIONE

BASE DEL SUGO

1. Trita finemente la cipolla.
2. In una padella, scalda l'olio e fai soffriggere la cipolla finché diventa morbida e trasparente.

SUGO AL TONNO

1. Aggiungi la passata di pomodoro e un pizzico di sale.
2. Lascia cuocere 8-10 minuti.
3. Unisci il tonno e sgranalo con una forchetta.
4. Cuoci altri 3-4 minuti per far amalgamare i sapori.

PASTA

1. Cuoci la pasta in acqua salata.
2. Scolala al dente, tenendo da parte un po' di acqua di cottura.

MANTECATURA AL LIMONE

1. Salta la pasta nel sugo.
2. Aggiungi un po' di acqua di cottura se serve.
3. Spegni il fuoco e unisci:
4. Scorza grattugiata di limone e qualche goccia di succo (non troppo!)

FINITURA

1. Spolvera con parmigiano grattugiato.
2. Completa con un filo d'olio a crudo.

CONSIGLIO

Il limone dà freschezza e alleggerisce il piatto: aggiungilo sempre a fuoco spento per mantenere il profumo e non renderlo amaro.



NOME RICETTA PASTA CON TONNO
ROSSO

NOME GRUPPO MADE IN ITALY

CHEFS - KANGY KanjY
- ~~CHICKEN~~ CHICKEN
- FULMINE - STELLA

PROTAGONISTA SCELTO

TONNO

INGREDIENTI SECONDARI:

ROSMARINO, BASILICO, PASTA, PARMIGIANO
OLIO D'OLIVA, SALE, POMODORO (PASSATA)

NOME INGREDIENTE SEGRETO

SUCCO DI LUNA

PROCEDIMENTO

- 1) ACQUA A BOLLIRE + SALE
- 2) METTERE LA PASTA (10 MIN)
- 3) SNOTARE L'ACQUA
- 4) AGGIUNGERE TONNO, ~~E~~ PO OLIO D'OLIVA, ROSMA
BASILICO PARMIGIANO + SUCCO DI LUNA PER

RISOTTO SPECIALE

SABRI POTTER:

- CHEF SUPERMARIO 771
- CHEF MARIO 75 SCINTILLA
- CHEF HERMIONE

RISOTTO SPECIALE

SABRI POTTER:

- CHEF SUPERMARIO 771
- CHEF MARIO 75 SCINTILLA
- CHEF HERMIONE

- # RISOTTO SPECIALE
- ## SABRI POTTER:
- CHEF SUPERMARIO 771
 - CHEF MARIO 75 SCINTILLA
 - CHEF HERMIONE

INGREDIENTI (2-3 PERSONE)

- 200 g di riso
- Radicchio
- 1 spicchio d'aglio
- 1 gambo di sedano
- 1 carota
- Burro
- 2-3 pomodori grandi
- Paprika (ingrediente segreto!)
- Parmigiano

PREPARAZIONE

TAGLIARE LE VERDURE

1. Taglia il radicchio, l'aglio, il sedano e la carota a pezzetti piccoli

CUOCI IL RISO

1. In una padella sciogli un po' di burro.
2. Aggiungi le verdure e poi il riso.
3. Cuoci mescolando e aggiungi un po' d'acqua se serve.

PREPARARE I POMODORI

1. Taglia la parte sopra dei pomodori e svuotali piano piano.

RIEMPI I POMODORI

1. Quando il riso è pronto, mettilo dentro i pomodori.

FINITURA

1. Aggiungi un pizzico di paprika.
2. Spolvera con parmigiano.

CONSIGLIO

La paprika è il tocco segreto: dà più sapore e colore



NOME RICETTA RISOTTO SPECIALE

NOME GRUPPO - SABRI POTTER

CHEFS - SUPERMARIO 701 - MARIO 75 - SCINTILLA
HERMIONE

PROTAGONISTA SCELTO

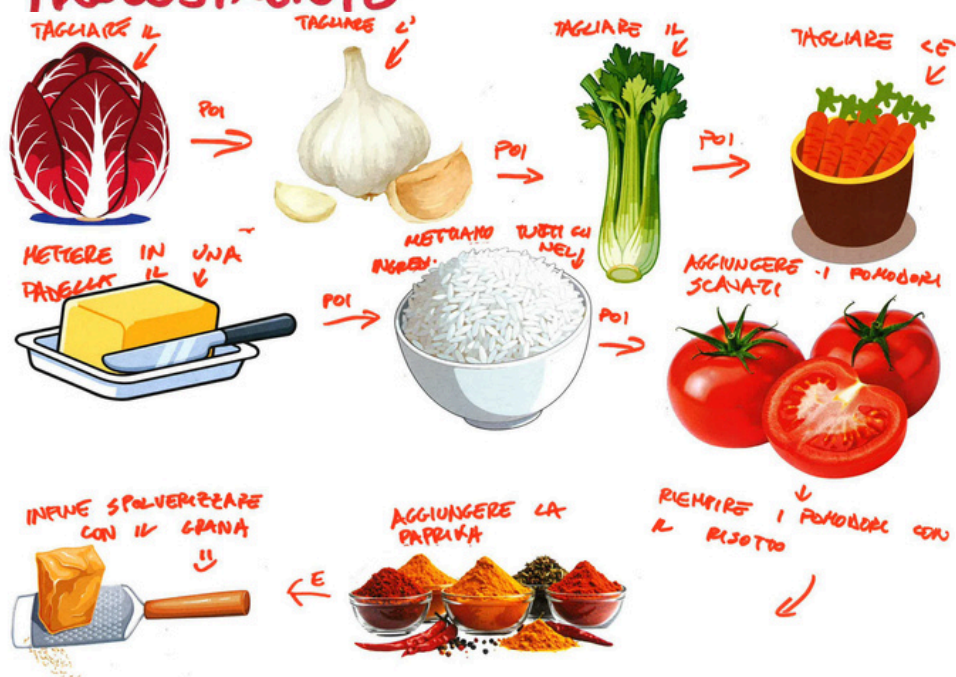
B A D I C C H I O

INGREDIENTI SECONDARI:

AGLIO, SEDANO, CAROTE, BURRO, RISO, PAPRIKA, POMODORI, PARMIGIANO

NOME INGREDIENTE SEGRETO PAPRIKA

PROCEDIMENTO



- CHEF SUSHI
- CHEF PEKKA MER
- CHEF MAX VERSTAPPEN
- CHEF GOJO
- MASTER CHEF

INGREDIENTI (2-3 PERSONE)

- 200 g di riso
- 1 scatola di tonno
- 2 uova
- Piselli
- 1 carota
- Prezzemolo
- Olio
- Sale
- Maionese (ingrediente segreto!)

PREPARAZIONE

CUOCI RISO E UOVA

1. Fai bollire l'acqua e cuoci il riso.
2. In un pentolino fai bollire anche le uova.

CUOCI LE VERDURE

1. Taglia la carota a pezzetti.
2. Cuoci carote e piselli in padella con un filo d'olio.

TAGLIA GLI INGREDIENTI

1. Sbuccia le uova e tagliale a pezzetti.
2. Sminuzza anche il tonno.

UNISCI TUTTO

1. Metti riso, verdure, uova e tonno in una ciotola.
2. Aggiungi olio, un pizzico di sale e la maionese.

CONSIGLIO

La maionese rende il riso più cremoso e gustoso



NOME RICETTA: RISO MARE E TERRA

NOME GRUPPO: I PANDA ROSSI

CHEFS: CHEF SUHI, ~~SU~~ CHEF PEKKAMER
CHEF MAX VERSTAPPEN GOJO, MASTER CHEF

PROTAGONISTA SCELTO
TONNO

INGREDIENTI SECONDARI: UOVO, PISELLI,
PREZEMOLO, RISO, SALE, OLIO, CAROTA

NOME INGREDIENTE SEGRETO
MAIONESE

PROCEDIMENTO

BOLLIRE IL RISO E LE UOVA.
CUCINARE I PISELLI E LE
CAROTE IN PADELLA. UNIRE
TUTTI GLI INGREDIENTI TAGLIATI
A PEZZETTI E AGGIUNGERE
OLIO E MAIONESE



SUSHI AMOROSO

I CANNAVACIUOLI:

- CHEF CANNAVACIUOLO
- CHEF CANNAVACIUOLO 3°
- CHEF CANNAVACIUOLO 4°

INGREDIENTI (2-3 PERSONE)

- Riso
- Merluzzo (fresco)
- 1 spicchio d'aglio (poco)
- Limone
- Sedano
- Avocado
- Sale (poco)
- "Amore" 🧡 (ingrediente segreto!)

PREPARAZIONE

CONDISCI IL MERLUZZO

1. Metti il merluzzo crudo in una ciotola.
2. Aggiungi un po' di sale e succo di limone.

PREPARA IL RISO

1. Cuoci il riso e poi mettilo su un piatto.

PREPARA LE VERDURE

1. Taglia il sedano a striscioline.
2. Taglia anche l'avocado e condiscilo con un po' di limone e un pizzico d'aglio.

COMPONI IL PIATTO FINITURA

1. Metti il riso nel piatto.
2. Aggiungi merluzzo, avocado e sedano sopra.

FINITURA

Mescola tutto "stile sushi" e aggiungi l'ingrediente segreto: amore

CONSIGLIO

Il limone rende il piatto più fresco e delicato



NOME RICETTA SUGHI AKOROSO

NOME GRUPPO 1 CANNAVACIVOLI

CHEFS

CANNAVACIVOLI, CANNAVACIVOLI 3°,
CANNAVACIVOLI 4°

PROTAGONISTA SCELTO

M E R L U Z Z O — — —

INGREDIENTI SECONDARI: merluzzo,
aglio (poco),
limone o aceto,
riso, poco sale,
sedano

NOME INGREDIENTE SEGRETO

avocado e amore

PROCEDIMENTO

- ① Condiamo il
Merluzzo crudo con limone e sale
- ② Impastiamo il riso per bene
- ③ Sfilettiamo il sedano
- ④ condiamo poi avocado con succo di
aglio

uniamo
il tutto,
stile
sughi,
con
AMORE

CAMPO VUOTO

MASTERS DEL CAOS!:

- CHEF BANNANITA
- CHEF BAGIGIA
- CHEF BRUSOLA
- CHEF RE ABDUL

CAMPO VUOTO

MASTERS DEL CAOS!:

- CHEF BANNANITA
- CHEF BAGIGIA
- CHEF BRUSOLA
- CHEF RE ABDUL

- # CAMPO VUOTO
- ## MASTERS DEL CAOS!:
- CHEF BANNANITA
 - CHEF BAGIGIA
 - CHEF BRUSOLA
 - CHEF RE ABDUL

INGREDIENTI (2-3 PERSONE)

- 200 g di pasta
- Fagiolini
- 1 patata
- 1 carota
- Ricotta
- Mozzarella
- Parmigiano
- Olio extra vergine d'oliva
- Sale
- Limone
- Manzo
- Carne di dinosauro del Madagascar (ingrediente segreto!)

PREPARAZIONE

CUOCI LA BASE

1. Metti a bollire l'acqua e cuoci la pasta con un pizzico di sale.
2. Cuoci anche la patata in acqua finché diventa morbida.

CUOCI LA CARNE

1. In padella cuoci il manzo (e la "carne di dinosauro" immaginaria) con un po' d'olio

PREPARA LE VERDURE

1. Cuoci o lessa i fagiolini e la carota tagliata a pezzetti.

UNISCI LA PASTA

1. Scola la pasta e aggiungila in una ciotola.
2. Unisci patata, fagiolini e un filo d'olio.

COMPLETA IL PIATTO

1. Aggiungi ricotta, mozzarella e parmigiano.
2. Metti anche la carne come contorno.

FINITURA

Aggiungi qualche goccia di limone per dare freschezza.

CONSIGLIO

La "carne di dinosauro" è un ingrediente segreto di fantasia: serve solo per divertirsi mentre si cucina



NOME SQUADRA: MASTERS

NOME RICETTA: DEL CAOS!

NOME CHEFS: BANNANIA, BAGIGIA,
BRUSOLA, RE ABDULNOME PROTAGONISTA
FAGIOLININOME ALTRI INGREDIENTI: RICOTTA,
MOZZA-
RELA,
LIMONE, PASTA,
PARMIGIANO,
OLIO, EXTRA!INGREDIENTE
SEGRETO!CARNE DI
DINOSAURO

dal mare di MADAGA

PROCEDIMENTO

Si cuoce la pasta,
patate al forno,
carne cotta in ~~patate~~ padella e il resto è

da contorno

.... COSA MI PORTO A CASA?!

CHEF BANNANIA

CHEF RE ABDUL

CHEF BAGIGIA

CHEF BRUSOLA

CHEF

non spreco il cibo

mangio quanto si deve

prendere quello che mangio

si possono mangiare pi' vari



PALLINE PARADISO

AQUILE REALI:

- CHEF XL
- CHEF CIAIO
- CHEF GIULIA
- CHEF GIOIA
- CHEF MATI'

INGREDIENTI (2-3 PERSONE)

- 200 g di riso
- 1 scatola di tonno
- Basilico
- 1 carota
- Olio d'oliva
- Sale
- Limone (succo + scorza) – ingrediente segreto

PREPARAZIONE

CUOCI RISO

1. Fai bollire l'acqua, aggiungi il sale e cuoci il riso. Poi scolalo.

PREPARA IL CONDIMENTO

1. Taglia la carota a pezzetti piccoli.
2. Mescolala con il tonno e un po' di basilico.

AGGIUNGI IL LIMONE

1. Unisci sale, succo di limone e un po' di scorza grattugiata.

UNISCI TUTTO

1. Mescola il riso con il tonno e le carote.
2. Aggiungi un filo d'olio.

COTTURA FINALE (SE SERVE)

1. Metti tutto in una teglia e scalda in forno per circa 20 minuti a bassa temperatura.

CONSIGLIO

Il limone e la sua scorza danno un gusto fresco e profumato, da aggiungere alla fine o prima del forno



NOME SQUADRA AGUILE REALI
NOME RICETTA PALLINE PARADISO
NOME CHEFS :

NOME PROTAGONISTA
TONNO

NOME ALTRI INGREDIENTI:

INGREDIENTE
• SEGRETO!
LIMONE
SCORZA

BASILICO
RISO
OLIO
SALE

CAROTA

PROCEDIMENTO: TAGLIARE CAROTE E MIXCHIARE
CON TONNO METTERE LIMONE E SALE NEL
INSIEME, AVVOLGERLO NEL RISO METTERE
OLIO E METTERE IN FORNO PER 20 MIN
CON

CHEF XL
CIAIO
CHEF ~~XXX~~
CHEF GIULIA
CHEF GIGI
CHEF MATI

...COSA MI PORTO A CASA?
CON L'ENERGIA RINNOVATA
CUCINO UN CIBO MIO E CON
GLI AVANZI NON LI BUTTO VIA
MA LI RISCO FACENDO ALTO CIBO

- CHEF SANYC PRIME
- CHEF ABRA CADABRA
- CHEF SAMMY
- CHEF FOODINSTA
- CHEF FIMA'

INGREDIENTI (2-3 PERSONE)

- 200 g di orzo
- Ceci
- 1 finocchio
- 1 pomodoro
- 1 carota
- Ricotta
- Basilico
- Menta (ingrediente segreto 🌿)
- Limone
- Olio d'oliva
- Sale

PREPARAZIONE

CUOCI ORZO E CECI

1. Fai bollire l'orzo in acqua salata.
2. Se i ceci sono secchi, cuocili (se sono già pronti, scolali).

TAGLIA LE VERDURE

1. Taglia finocchio, pomodoro e carota a pezzetti piccoli

PREPARA LA CREMA

1. Trita basilico e menta.
2. Mescolali con la ricotta

UNISCI TUTTO

1. Metti in una ciotola orzo, ceci e verdure.
2. Aggiungi la crema di ricotta con erbe.

CONDISCI

1. Aggiungi olio, sale e un po' di limone.

CONSIGLIO

La menta rende il piatto fresco e profumato, perfetto per l'estate



NOME SQUADRA: I PORRIDGE

NOME RICETTA: FRESCHEZZA IN BOCCA

NOME CHEFS: CHEF SONYC PRIME, CHEF ABRA CADABRA,
CHEF SAMMY, CHEF FOODINSTA, CHEF FIMA'

NOME PROTAGONISTA
FINOCCHIO

NOME ALTRI INGREDIENTI: CECI, RICOTTA,

! INGREDIENTE
SEGRETO!

MENTA

BASILICO, LIMONE, ORZO,
OLIO, POMODORO, CAROTA,
SALE

PROCEDIMENTO: BOLLIRE L'ORZO E I CECI.
TAGUARE FINOCCHIO, POMODORO E CAROTE.
TRITARE MENTA E BASILICO E METTERE
INSIEME ALLA RICOTTA. UNIRE TUTTI GLI
INGREDIENTI E CONDIRE CON Olio

... COSA MI PORTO A CASA?!

CHEF SONYC: NON SPRECARE IL CIBO E FARE NUOVE
RICETTE DIVERTENDOSI

CHEF ABRA CADABRA: SI PUO' CUCINARE DIVERTENDOSI E
RISPARIANDO CIBO

CHEF SAMMY: SI PUO' IMPARE NUOVI PIATTI E DIVERTIRSI
E NON BISOGLIA SPRECARE CIBO

CHEF FOODINSTA: NON SPRECARE E BUTTARE CIBO

CHEF FIMA: NON SPRECARE CIBO E PRENDERE
SOLO IL NECESSARIO

- CHEF GARFIELD
- CHEF GIGETTO
- CHEF STEVE
- CHEF GIANNINA
- CHEF RICCARDO MANFREDI

INGREDIENTI (2-3 PERSONE)

- 200 g di riso
- Radicchio
- 1 cipolla
- 1 carota
- Manzo
- Grana grattugiato
- Olio extravergine d'oliva
- Sale
- "Amore e cura" (ingrediente segreto)

PREPARAZIONE

PREPARA IL RADICCHIO

1. Lava il radicchio e taglialo a pezzetti piccoli.
2. Mettilo in pentola con la cipolla e un po' d'acqua.
3. Aggiungi un pizzico di sale e un filo d'olio e lascia cuocere.

CUOCI IL RISO

1. In un'altra pentola cuoci il riso in acqua salata. Poi scolalo.

CUOCI CARNE E CAROTE

1. Taglia il manzo a pezzetti piccoli.
2. Taglia anche la carota in pezzi molto piccoli.
3. Cuocili in padella con un po' d'olio e acqua finché diventano morbidi.

UNISCI TUTTO

1. Metti insieme riso e radicchio.
2. Aggiungi il grana e mescola bene.
3. Poi unisci anche manzo e carote.

FINITURA

1. Metti tutto in una teglia e scalda in forno per circa 20 minuti a bassa temperatura.

CONSIGLIO

L'ingrediente segreto è "amore e cura": serve sempre per rendere il piatto più buono



NOME SQUADRA GLI INVINCIBILI
 NOME RICETTA LA SPECIALITA' DELLA CASA
 NOME CHEFS: GARFIELD, GIGETTO, STEVE, GIANNINA,
 RICCARDO, MANFREDI.
 NOME PROTAGONISTA
 RADICCHIO

NOME ALTRI INGREDIENTI: MANZO, CIPOLLA, RISO,
 GRANA, OLIO EXTRAVERGINE DI OLIVA E SALE E
 CAROTE

! INGREDIENTE
 SEGRETO !
 AMORE E
 CURA

PROCEDIMENTO: LAVIAMO IL RADICCHIO, TAGLIAMO A
 PICCOLI PEZZI, METTIAMO IN PENTOLA, METTIAMO LA
 CIPOLLA, CI METTIAMO UN PO' DI ACQUA, MENTRE IL
 RADICCHIO SI CUCINA CUCINIAMO IL RISO, NEL RADICCHIO
 CI METTIAMO UN PO' DI OLIO E SALE. QUANDO METTIAMO
 INSIEME ANCHE IL RISO E DOPO METTIAMO IL GRANA.
 ... COSA MI PORTO A CASA? !

CHEF RICCARDO ^{MANFREDI} ~~MANFREDI~~: IL CIBO NON VA SPRECATO, SE ABBIAMO DEL CIBO AVANZATO
 O LO USIAMO PER UN'ALTRA RICETTA O LO DONIAMO
 QUELLE FAMIGLIE CHE NON NE HANNO
 CHEF GIGETTO: NON DEVI SPRECARE IL CIBO E SE NE HAI IN PIU' PUOI DARLO
 O AI BISOGNOSI. POTRESTI FRANGERE MENO CIBO LA PROSSIMA
 VOLTA SE NE HAI TROPPO NELL'ALITO.
 CHEF STEVE:
 CHEF GARFIELD: IL CIBO NON VA SPRECATO
 CHEF GIANNINA: QUANDO HAI DEL CIBO DAVANTI LO DEVI MANGIARE TUTTO OPPURE
 LO USI PER UN'ALTRA RICETTA. PERCHE' ABBIAMO CIBO PER
 TUTTI MA ALCUNI NON SE LO POSSONO PERMETTERE
 NON B'SOGNA SPRECARE CIBO ANCHE PERCHÉ NON S'ABBIANO
 QUELLO CHE NON LO HANNO.

* A PARTE TAGLIAMO IL MANZO IN PICCOLI PEZZI
 E LO METTIAMO IN PADILLA CON LE CAROTE
 CHE ABBIAMO TAGLIATO IN PICCOLISSIMI PEZZI.
 CI METTIAMO UN PO' DI ACQUA E DOPO QUALCHE
 ORA E PRONTO. MISCHIAMO IL MANZO CON IL RESTO
 E SERVIAMO IL PIATTO AI CLIENTI.

Cosa ho imparato?

REGOLE IMPORTANTI

- *Il cibo non va sprecato*
- *Prendi solo quello che riesci a mangiare*
- *Mangia quanto ti serve, senza esagerare*

SE AVANZA IL CIBO

- *Puoi mangiarlo più tardi o il giorno dopo*
- *Puoi usarlo per creare nuove ricette*
- *Gli avanzi si possono riutilizzare in modo creativo*

AIUTIAMO GLI ALTRI

- *Se hai cibo in più, puoi dividerlo con chi ne ha bisogno*
- *Ricorda: non tutti hanno abbastanza cibo*

IMPARIAMO DIVERTENDOCI

- *Cucinare è divertente*
- *Puoi imparare nuovi piatti usando gli avanzi*

PROTEGGIAMO IL PIANETA

- *Non buttare il cibo*
- *Sprecare meno aiuta anche l'ambiente*

Ricorda: il cibo è prezioso, non si butta! 😊

La nostra Canzone

Tiny bit of rice, half a carrot too,
Cheese from yesterday, what can we all do?
Little piece of bread, peas that didn't go,
Line them on the table, watch the ideas grow!

Food recycling, don't waste it,
We can mix it, we can taste it,
Turn it, twist it, make it new,
Magic meals from me and you!

Food recycling, don't waste it,
Every crumb we can embrace it,
Leftovers on every plate,
Cook again and make it great!

Pasta from last night, cut it, spin it round,
Add some tomato, color, smell and sound!
Fruit that's getting soft, blend it in a cup,
Smoothie power breakfast, drink it all right up!

Food recycling, don't waste it,
We can mix it, we can taste it,
Turn it, twist it, make it new,
Magic meals from me and you!

Food recycling, don't waste it,
Every crumb we can embrace it,
Leftovers on every plate,
Cook again and make it great!

Ask before you toss, could this be a snack?
Tiny tasty treasures, waiting to come back,
Circle in the kitchen, family cooking crew,
Saving tasty dishes, Earth is smiling too!

Food recycling, don't waste it,
We can mix it, we can taste it,
Turn it, twist it, make it new,
Magic meals from me and you!

Food recycling, don't waste it,
Every crumb we can embrace it,
Leftovers are not the end,
They can be our feast again!

Food recycling, don't waste it,
We can mix it, we can taste it,
We can make it new,
Magic meals from me and you!

Si Ringraziano:

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Giuseppa Lentini

Referente di plesso, Scuola primaria L. Luzzatti Salboro, Padova

Tutto il corpo docenti

Scuola primaria L. Luzzatti

Comune di Padova

Assessora Cristina Piva

Assessorato alle Politiche Educative e Scolastiche, Comune di Padova

Dott. Silvano Golin

Settore Servizi Scolastici, Comune di Padova

Dott.ssa Pamela Ascione

EQO - UOC Refezione e Tariffe Scolastiche

Ufficio Dietiste

Settore Servizi Scolastici - Comune di Padova

Dott.ssa Silvia Schiavon

Dott.ssa Laura Licata

ANNEX III – Small scale pilot action n.6 “Famiglie insieme contro lo spreco alimentare - GuideBook”



ECOFOODCYCLE – Famiglie insieme contro lo spreco alimentare

Marzo 2026

Un percorso per promuovere la consapevolezza sullo spreco alimentare nella vita quotidiana delle famiglie, attraverso la collaborazione tra genitori, studenti e scuola.

Dispensa creata in collaborazione con Chef Tommaso Pardo

Obiettivo della guida

Questa dispensa raccoglie suggerimenti pratici e ricette semplici per organizzare meglio il cibo in casa, ridurre lo spreco e trasformare avanzi e scarti in nuove preparazioni.

1. Prima regola: non partire dalla ricetta, parti dal piano

Lo spreco alimentare in casa nasce spesso prima di cucinare. Nasce quando si fa la spesa senza sapere davvero cosa si mangerà nei giorni successivi. Per questo la prima regola è semplice: decidere una traccia dei pasti prima di comprare.

Come fare in pratica

- Una volta a settimana scegliete insieme 4 o 5 pasti principali.
- Coinvolgete i bambini: se partecipano alla scelta, spesso mangiano più volentieri.
- Lasciate uno o due pasti liberi per imprevisti o recupero.
- Prima di uscire, controllate frigo, freezer e dispensa.
- Scrivete la lista della spesa partendo dal menu, non dalla fantasia del momento.

Non serve una programmazione rigida. Basta una traccia. L'obiettivo non è vivere la cucina come una tabella, ma evitare di comprare prodotti senza destinazione.

2. Le cinque regole antispreco

1. Pianifica prima di fare la spesa: compra quello che serve davvero.
2. Dai una destinazione agli alimenti: ogni prodotto dovrebbe avere almeno un'idea di utilizzo.
3. Raffredda e conserva correttamente: molti sprechi nascono da cattiva conservazione.
4. Trasforma gli avanzi: brodo, carni lessate, verdure e pane possono diventare basi per nuovi piatti.



5. Crea un giorno del recupero: una volta a settimana svuota frigo e freezer in modo intelligente.

Un buon metodo domestico non deve complicare la vita. Deve renderla più semplice. Se il frigorifero è ordinato e ogni alimento ha una funzione, cucinare diventa più veloce e lo spreco diminuisce.

3. Conservazione: le tecniche che fanno la differenza

Raffreddare bene

Non lasciare brodi, sughi o preparazioni calde nella pentola. Trasferiscili in un contenitore freddo, basso e largo. Se possibile appoggialo su due mestoli o su un supporto, in modo che passi aria sotto. Copri con pellicola a contatto. Metti in frigo dopo circa 2 ore oppure quando riesci a tenerci sopra la mano: indicativamente sotto i 50 gradi.

Non mettere grandi masse bollenti direttamente in frigo: scaldi il frigorifero e rischi di compromettere anche gli altri alimenti.

“Invasettamento” a caldo

Per brodi e preparazioni liquide, quando possibile, puoi usare l'invasettamento a caldo. Versa il prodotto molto caldo, circa 90 gradi, in bottiglie o vasi di vetro puliti e adatti. Il calore del prodotto pastorizza il contenitore.

Capovolgendo il vaso o la bottiglia, il prodotto caldo pastorizza anche tappo o coperchio, aumentando sicurezza e stabilità del contenitore.

Conserva comunque in frigorifero e usa sempre buon senso: contenitori puliti, tappi integri, odore corretto, nessun rigonfiamento, nessuna fermentazione anomala.

Congelare meglio

Per congelare bene a casa, fai porzioni piccole e basse. Usa la zona più fredda o la funzione fast freeze se disponibile. Più il prodotto congela rapidamente, migliore sarà la qualità quando lo userai.



Blanching delle verdure

Prima di congelare molte verdure, sbianchiscile brevemente in acqua bollente e poi raffreddale. Questo aiuta a mantenere colore, consistenza e qualità. Inoltre puoi riutilizzare l'acqua di blanching come base per un brodo vegetale, aggiungendo gli scarti puliti delle verdure.



4. Ricette dello showcooking

Ricetta 1 - Pulled beef da muscolo lessso

Ingredienti

- Muscolo di manzo lessso recuperato dal brodo
- Salsa BBQ
- Worcester sauce
- Insalata fresca per accompagnare

Procedimento

1. Sfilaccia il muscolo di manzo cotto nel brodo.
2. Condiscilo con salsa BBQ e Worcester sauce.
3. Scaldalo leggermente se lo vuoi servire tiepido.
4. Accompagnalo con insalata fresca o usalo dentro un panino.

Idea antispreco: il lessso diventa un piatto moderno e più appetibile, soprattutto per chi normalmente non ama la carne del brodo.

Ricetta 2 - Insalata di gallina lessa

Ingredienti

- Gallina lessa recuperata dal brodo
- Carote a julienne
- Valeriana
- Maionese
- Cetriolini
- Worcester sauce
- Salsa di soia
- Noci tostate

Procedimento

1. Sfilaccia o taglia la gallina lessa.
2. Unisci carote, valeriana e cetriolini.
3. Condisci con maionese, Worcester sauce e poca salsa di soia.
4. Completa con noci tostate per dare croccantezza.



Ricetta 3 - Polpette/passati di gallina in brodo aromatizzato

Ingredienti per le polpette

- Gallina lessa: 150 g
- Parmigiano: 100 g
- Pane: 80 g
- Uova: 2

Per il brodo

- Brodo di manzo e gallina
- Scarti puliti di sedano rapa
- Sale se necessario

Procedimento

1. Trita o sminuzza la gallina lessa.
2. Mescola gallina, Parmigiano, pane e uova.
3. Forma piccole palline.
4. Tosta gli scarti di sedano rapa in forno a 180 gradi.
5. Mettili in infusione nel brodo caldo per circa 5 minuti.
6. Filtra il brodo e cuoci le palline fino a consistenza corretta.

Idea antispreco: la carne del brodo diventa una nuova preparazione e gli scarti del sedano rapa danno aroma al brodo.



Ricetta 4 - Risotto agli asparagi con maionese di nocciola

Ingredienti

- Riso per risotto
- Asparagi
- Brodo vegetale ottenuto da acqua di blanching e scarti puliti di verdura
- Nocciole tostate
- Sale
- Olio o burro per mantecare, se desiderato

Maionese di nocciola

- Pasta di nocciola: 50 g
- Acqua: 50 g
- Olio di girasole: 100 g
- Sale: 1 pizzico

Procedimento

1. Prepara un brodo usando acqua di blanching e scarti puliti delle verdure.
2. Cuoci il risotto agli asparagi usando questo brodo.
3. Frulla pasta di nocciola, acqua, olio di girasole e sale fino a ottenere una crema stabile.
4. Servi il risotto con la maionese di nocciola e nocciole tostate.

Idea antispreco: anche l'acqua di cottura e gli scarti vegetali possono diventare una base gastronomica, non un rifiuto.



5. Schema pratico per una settimana

Giorno 1: Prepara un brodo. Usa subito una parte del liquido e conserva il resto con raffreddamento corretto o invasettamento a caldo.

Giorno 2: Recupera la carne del brodo: pulled beef, insalata di gallina o polpette.

Giorno 3: Prepara le verdure insieme: pulisci, sbianchisci, conserva o congela.

Giorno 4: Usa acqua di blanching e scarti puliti per un brodo vegetale.

Giorno 5: Fai un risotto, una vellutata o una minestra usando le basi già preparate.

Giorno 6: Controlla il frigo: giorno recupero.

Giorno 7: Pianifica la settimana successiva prima della spesa.

Questo schema non è obbligatorio. Serve a far capire una logica: ogni preparazione può generare una seconda vita. Quando cucini, pensa già a cosa potrà diventare quello che avanza.

6. Cosa fare quando...

Ho verdure stanche: Usale per vellutate, risotti, brodi vegetali o sbianchiscile e congelale in piccole porzioni.

Ho fatto brodo e mi avanza carne: Trasformala in insalata, pulled beef, polpette, ripieno o base per crocchette.

I bambini non vogliono sempre le stesse cose: Coinvolgili nella scelta del menu e cambia forma al prodotto: la stessa carne può diventare panino, insalata o polpetta.

Ho pane vecchio: Usalo come legante per polpette, passatelli, gratinature o ripieni.

Non so cosa cucinare: Guarda prima cosa deve essere consumato. Poi costruisci il pasto attorno a quello.

Conclusione

Ridurre lo spreco non significa cucinare piatti complicati. Significa organizzare meglio quello che si compra, si conserva e si prepara. La cucina antispreco più efficace è quella che diventa abitudine: una spesa più precisa, un frigorifero più ordinato, qualche tecnica semplice e la capacità di trasformare gli avanzi in nuovi piatti.

