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PPP-URB D1.2.3_2
Public and private food procurement and short food value chains in urban areas

Output 3 - Guidelines for University Food Policies

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ONFOODS
PPP-URB
PUBLIC AND PRIVATE FOOD PROCUREMENT AND SHORT FOOD VALUES CHAINS IN URBAN AREAS
Coordinamento: prof. Davide Fassi – Dipartimento di Design, Politecnico di Milano

UNIVERSITIES FOOD POLICY
15/02/2025

D1.2.3_2
Report on strategies improving the affordability of sustainable food in canteens through public and private procurement

Edited by: Davide Fassi, Irene Bassi, Annalinda De Rosa

Actions

Index

1. Nutritional Guidelines

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Description

Nutrition guidelines significantly influence the environmental impact of food procurement by shaping dietary patterns that can either exacerbate or mitigate environmental degradation. Current dietary habits, particularly in regions like the EU, contribute to a substantial portion of environmental impacts, accounting for 27% of all such impacts in Europe. A shift towards **healthier diets**, can reduce this contribution, particularly through decreased consumption of red meat, which is a major environmental burden (Arnold et al., 2009). Nutrition guidelines that **emphasize sustainable diets** can help align food production and consumption with ecological goals. Furthermore, the integration of sustainability into nutrition policy is crucial for addressing the dual challenges of **feeding growing populations and maintaining ecosystem health**. This requires a **multi-criteria approach** that balances nutrition, public health, environmental sustainability, socio-cultural factors, food quality, economics, and governance (Mason & Lang, 2017). The role of nutrition guidelines is also pivotal in **addressing climate change**, as food production is responsible for a significant percentage of greenhouse gas emissions. By promoting dietary patterns that are compatible with sustainable development, such as increased plant-based diets and reduced meat consumption, nutrition guidelines can help mitigate climate change impacts (Binns et al., 2021).

Nutrition guidelines play a critical role in shaping the health and well-being of students and staff in universities by **influencing the types of food offered** in campus dining facilities. Universities have the responsibility to **align their food procurement and services** with these standards, ensuring that the food offered is nutritious, safe, and aligned with sustainability objectives like reducing processed foods and increasing the availability of low-fat, low-sugar and low-sodium options.

Rules and regulations

Regulatory frameworks in Italy and the European Union are crucial in steering universities toward sustainable food procurement and the implementation of effective nutrition guidelines. At the **EU level**, the European Green Deal and its **Farm to Fork Strategy** set a comprehensive agenda for a fair, healthy, and environmentally friendly food system, emphasizing sustainable production and consumption. Specifically, the Regulation (EU) No 1169/2011 on Food Information to Consumers requires transparent nutrition labeling, ensuring consumers have access to essential information about the nutritional content of foods. The European Food Safety Authority (EFSA) provides Dietary Reference Values and scientific opinions that member states use to develop national nutrition policies. In **Italy**, the **"Linee Guida per una Sana Alimentazione Italiana"** (Guidelines for a Healthy Italian Diet) issued by the **Ministry of Health** offer comprehensive recommendations for a balanced diet rooted in the Mediterranean tradition. These guidelines advocate for increased consumption of fruits, vegetables, whole grains, and legumes while reducing intake of saturated fats, sugars, and salt. Additionally, the **National Action Plan on Green Public Procurement (PAN GPP)** and the mandatory **Minimum Environmental Criteria (Criteri Ambientali Minimi - CAM)** require public entities to include environmental considerations in their procurement activities. For example, CAM suggests reducing processed foods, and recommends that at least one out of three product lines offered by a supplier in vending machines be low or very low in sodium (0.12 g or 0.04 g of sodium per 100 g or 100 ml, or an equivalent salt content), in accordance with the limits set by Regulation (EC) No 1924/2006 on nutrition and health claims made on food products. These regulations collectively support universities in enhancing student health through nutritious and sustainable food offerings while reducing environmental impacts. By adhering to these legal frameworks, universities not only comply with national and EU obligations but also position themselves as leaders in promoting a sustainable and health-conscious food culture within their communities.

Areas of opportunity

- Improving nutritional quality of campus food
- Educating students towards a good nutritional diet
- Revise food labelling

1.1 Inclusion of nutritional parameters in procurement tenders

(Polimi DIG)

Tag: Offering and Procurement, ~~Training and Engagement, Spaces and services, Surplus and waste~~

Goal:
Ensure that nutritional quality is a critical factor in the selection of food suppliers for university vending machines, catering, and canteens by integrating strict nutritional requirements into the procurement tenders

Key Actors:
- University's procurement office or department

Users: gain access to healthier food options, improving their overall well-being and diet
- **Students;**
- **university staff;**
- **university faculty.**

Expected results:
- Improvement in the nutritional quality of food offerings on campus, with healthier options available across all food services
- Incentivization of suppliers to meet higher nutritional standards, fostering a culture of healthier food production and service
- Enhanced transparency and competitiveness in procurement, with suppliers being evaluated based on clear health and nutrition criteria

Process:
- Define the specific nutritional thresholds (e.g., limits on sodium, sugar, saturated fats) that suppliers must meet to participate in tenders according to CAM
- Create tender documentation that includes nutritional parameters as either exclusionary criteria (mandatory to meet) or rewarding criteria (additional points in scoring for higher standards)
- Evaluate suppliers based on their ability to meet or exceed these nutritional standards
- Award contracts with greater weight given to suppliers demonstrating excellence in nutritional quality

Tools:
- Nutritional assessment tools and databases to establish and verify nutritional thresholds
- Tender documentation templates with integrated nutritional criteria
- Evaluation matrices to score suppliers based on nutritional parameters

Connection with other actions:
- 3.1 Integration of sustainability criteria into food procurement tenders
- **5.1** Inclusion of surplus food recovery and redistribution criteria in food procurement tenders
- **6.2** Promoting food literacy, healthy eating, and sustainability education

Possible outputs:
- *Contracts awarded to suppliers with proven track records of offering healthier, low-sodium, low-sugar, and nutrient-rich products*
- *Food service areas (vending machines, canteens, catering) stocked with items that meet or exceed nutritional guidelines, promoting healthier eating habits on campus*

1.2 Organizing training sessions for suppliers for nutritional guidelines
(Polimi DIG)

Tag: Offering and Procurement, ~~Training and Engagement, Spaces and services, Surplus and waste~~

Goal:
Educate suppliers on how to integrate nutritional guidelines into their products, enhancing the overall nutritional quality of food offered through vending machines, catering, and canteen services

Key Actors:
- **University's procurement office or department** is the responsible for organizing and delivering the training sessions.

Users:
- **Students;**
- **university staff;**
- **university faculty;**
- **Food Suppliers**

Expected results:
- Suppliers gain a deeper understanding of nutritional standards and best practices, enabling them to improve the nutritional content of their offer
- Improved collaboration between suppliers and the university, fostering a shared commitment to healthier food offerings
- Long-term enhancement of the nutritional value of food available to the campus community, aligning with both health and sustainability goals

Process:
- Identify key nutritional guidelines and best practices to be included in the training sessions
- Partner with nutritionists and industry professionals to develop and deliver the training content
- Organize regular training sessions, both in-person and online, tailored to the specific needs of suppliers
- Collect feedback from suppliers after each session to refine and improve future training

Tools:
- Training materials and guides based on current nutritional standards and regulations (e.g., CAM, EU guidelines)
- Expert presentations by nutritionists and industry professionals
- Digital platforms for online training and knowledge sharing resource distribution

Connection with other actions:
- **6.2** Promoting food literacy, healthy eating, and sustainability education
- **2.4** Organizing training sessions for suppliers to promote food variety

Possible Output:
- *Suppliers incorporate nutritional improvements into their product lines, resulting in healthier food options on campus*
- *A documented increase in the availability of low-sodium, low-sugar, and nutrient-dense products across all food services*
- *A stronger, educated supplier network aligned with the university's nutrition and sustainability objectives*

1.3 Monitoring and assessment suppliers performances against nutritional guidelines

(Polimi DIG)

Tag: Offering and Procurement, ~~Training and Engagement, Spaces and services, Surplus and waste~~

Goal:
Establish a continuous monitoring system to assess and ensure that suppliers meet the nutritional and sustainability standards set by the university

Key Actors:
- **University's procurement office or department** is responsible for establishing and managing the monitoring and assessment processes.

Users:
- **Students;**
- **University staff:** benefit from consistently high-quality, healthy, and sustainable food options, enhancing their dining experience and overall well-being.
- **University:** gains actionable insights to monitor supplier contracts, ensuring alignment with tenders' specifications.

Expected results:
- Ongoing improvement in the nutritional quality and sustainability of the food offered by suppliers
- Data-driven decision-making for contract renewals and supplier evaluations based on clear performance metrics
- Increased accountability and transparency in supplier practices related to nutrition and sustainability

Process:
- Define key performance indicators: develop specific KPIs related to food quality (e.g., nutrient content, freshness), environmental sustainability (e.g., use of local and organic products), and supplier service (e.g., timeliness, variety of options)
- Data collection: implement digital tools (e.g., apps or dashboards) for real-time data collection on key aspects such as food freshness, menu variety, and adherence to sustainability standards. suppliers will be required to input data regularly
- Reporting system: require suppliers to submit periodic reports (e.g., monthly or quarterly) detailing their performance against the defined KPIs. This data will help track compliance and areas for improvement
- Regular audits and inspections: conduct regular on-site audits and inspections to verify the data submitted by suppliers, ensuring they comply with the nutritional guidelines and sustainability standards
- Feedback and improvement: based on collected data and audit findings, provide feedback to suppliers to help them improve their performance. This could include follow-up meetings or workshops to address specific issues

Tools:
- Digital monitoring platforms for real-time data collection and performance tracking
- KPI scorecards for suppliers, updated periodically based on submitted reports and audit findings.
- Auditing checklists to ensure comprehensive on-site inspections

Connection with other actions:
- **1.3** Monitoring and assessing supplier performance against nutritional guidelines.
- **2.5** Monitoring and assessing supplier commitment to food offering variety
- **3.2** Implementation of monitoring systems to evaluate the quality and sustainability of food purchased
- **5.3** Monitoring the quantity and impacts of surplus food recovered

Possible output:
- *Comprehensive performance reports that highlight supplier adherence to nutritional and sustainability guidelines, providing a basis for contract renewals or termination*
- *Continuous improvement in the quality and variety of food offered on campus, with measurable reductions in sodium, sugar, and processed foods*
- *A transparent and accountable supplier network that aligns with the university's health and sustainability goals*

2. Food Offering Variety

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Description

Universities have a crucial role in shaping students' dietary behaviors, as they spend significant time on campus. They must create food environments that promote sustainable choices and cater to diverse dietary needs (Tam et al., 2017). University canteens influence students' eating habits and offer opportunities for sustainable food procurement through partnerships with local food systems (Martinez-Perez et al., 2022; Kretschmer & Dehm, 2021). Incorporating local and seasonal products enhances food diversity and supports sustainability (Franchini et al., 2023). Agro-biodiversity valorization also promotes sustainable diets (Renna, 2015). The "Food Offering Variety" category highlights the need for diverse food options to meet dietary preferences, cultural needs, and health goals, improving nutrient intake and reducing chronic disease risks (Whitton et al., 2020; Willett et al., 2019). A varied menu fosters inclusivity, social cohesion, and student satisfaction (Barker et al., 2021; Patel et al., 2019; Kim & Morais, 2020).

Background

University campuses typically provide food through canteens, which offer meals at fixed prices for lunch and dinner, usually six days a week. The movement toward sustainable food systems is shaping how universities approach food variety. By offering more plant-based options and culturally tailored meals, universities can reduce their carbon footprint, promote healthier diets, and enhance social sustainability and inclusivity. Ensuring food is accessible to those with dietary restrictions is key to fostering an equitable food environment.

Rules and regulations

The Decree of the Ministry of the Environment of 10 March 2020 containing **"Minimum environmental criteria (MEC)** for the collective catering service and supply of foodstuffs" was published in the **Official Journal no. 90 of 4 April 2020**.
The application of the MEC is mandatory for contracting authorities which, pursuant to **art. 57 of Legislative Decree 36/2023**, are required to include in the tender design documentation the technical specifications and contractual clauses indicated in the document, which aim to seek **improvement solutions** from the point of view of **environmental impact** in the various phases of the process **of creating the collective catering service**, from the production of foodstuffs to the consumption of meals by users.
These new MECs, which replace the previous ones provided for by the decree of 25 July 2011, place greater demands on the contracting authorities, which will have to proceed in compliance with various and detailed requirements: from the use of well-defined percentages of organic products and antibiotic-free meat, to the **valorisation of zero-mile supplies and transport with electric vehicles**, from the obligation of **reusable tableware and packaging to the purchase of new**, less energy-intensive equipment, from measures to reduce food waste to the valorisation of the short supply chain (Trapè, 2022).
The drafting of the MECs was based on the Community and national political-programmatic guidelines and on what was already provided for by specific sector regulations, so that they were consistent with the current regulatory framework and with medium-long term strategic needs.
The main regulatory references referred to in the MEC document are reported below:
- Directive (EU) No 2014/24 of the European Parliament and of the Council of 26 February 2014
- Directive (EU) No 2014/23 of the European Parliament and of the Council of 26 February 2014
- Directive (EU) No 2014/25 of the European Parliament and of the Council of 26 February 2014
- Legislative Decree 31 March 2023 n. 36

- Decree of the Ministry of the Environment, Land and Sea Protection, 10 March 2020
- Decree of the Minister of the Environment and energy security, 17 May 2024
- Regulation (EU) No 2018/848 of the European Parliament and of the Council of 30 May 2018
- **Regulation (EU) No 2024/1143** of the European Parliament and of the Council of 11 April 2024 on geographical indications for wine, spirit drinks and agricultural products, as well as traditional specialities guaranteed and optional quality terms for agricultural products, amending Regulations (EU) No 1308/2013, (EU) 2019/787 and (EU) 2019/1753 and repealing Regulation (EU) No 1151/2012
- Law 18 August 2015 n. 141
- Commission Regulation (EC) No 889/2008 of 5 September 2008
- Regulation (EC) No 396/2005 of the European Parliament and of the Council of 23 February 2005
- Legislative Decree 14 August 2012 n. 150 - Implementation of Directive 2009/128/EC
- Commission Delegated Regulation (EU) No 665/2014 of 11 March 2014
- Law 3 February 2011, n. 4
- Law 6 October 2017, n. 158
- Legislative Decree 24 June 2014 n. 91
- Decree of the Minister of Agricultural, Food, and Forestry Policies, in agreement with the Ministers of University, Education and Research, and Health, of 18 December 2017.Ministerial Decree 28 July 2004
- Decree of the Minister of Agricultural, Food, and Forestry Policies, 26 July 2017
- National strategic plan for the development of the organic system of the Ministry of Agriculture, Food and Forestry Policies, approved in the State-Regions conference on 25 March 2016
- National Guidelines for School, Hospital and Care Catering of the Ministry of Health (Official Journal no. 37 of 15 February 2011)
- Reference Intake Levels of Nutrients and Energy for the Population
- **Farm to Fork Strategy under the European Green Deal (EU)**, which encourages the inclusion of local, organic, and plant-based foods in public food services. Additionally,
- **Regulation (EU) No 1169/2011** ensures transparency in **food labeling**, including allergen disclosure, enabling consumers to make informed decisions and supporting the provision of diverse dietary options.
- The **EU Organic Regulation (Regulation (EU) 2018/848)** governs organic food certification and labeling, promoting the integration of organic options into food offerings.
- In **Italy**, these EU regulations are implemented through specific national laws. The **Criteri Ambientali Minimi (CAM)** for public procurement mandate that universities prioritize organic, local, and seasonal food, promoting a varied and sustainable food offering.
- The **Law on Food Waste Reduction (Legge Gadda, 2016)** encourages actions to reduce food waste, partly through diversifying food offerings to meet various dietary needs.
- Furthermore, the Italian Ministry of Health's Guidelines for Healthy Eating emphasize the Mediterranean diet, advocating for a varied, balanced diet rich in fruits, vegetables, and whole grains, supporting the inclusion of diverse, nutrient-rich food options in university food services.

Areas of opportunity

- Promoting the procurement of local agri-food products
- Promoting the consumption of seasonal agri-food products
- Improving the adherence to sustainable diets
- Cultural and dietary inclusivity (plant-based and allergen-free)
- Innovative menu planning
- Real-time feedback and customization

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2.1 Including clauses for food variety in procurement tenders

(Polimi DIG)

Tag: Offering and Procurement, ~~Training and Engagement, Spaces and services, Surplus and waste~~

Goal: Ensure that food suppliers offer a diverse selection of food categories and options for special diets and cultural needs, while also promoting menu variation to prevent repetitiveness, thus enhancing the overall food experience on campus

Key Actors:
- University's procurement office or department

Users:
- **Students;**
- **University staff;**
- **University faculty**.

Expected Results:
- Increased diversity in food options, ensuring that all students, including those with special dietary needs (e.g., vegetarian, vegan, gluten-free), have access to healthy and appropriate meals
- Improved nutritional value of the food offerings, with a variety of fruits, vegetables, proteins, and whole grains
- Enhanced student satisfaction through varied and rotating menus, reducing menu fatigue
- Greater competition among suppliers to provide innovative and diverse food offerings, leading to higher quality meals

Process:
- Define requirements in tenders: draft procurement tenders that clearly outline the required variety of food categories (e.g., fruits, vegetables, proteins, whole grains) and include provisions for special dietary options (vegetarian, vegan, gluten-free)
- Set minimum thresholds: establish minimum thresholds for food variety that suppliers must meet to qualify for consideration. This should cover both food diversity and menu rotation to avoid repetitive meals
- Award additional points: create a scoring system that rewards suppliers who exceed the minimum requirements, offering additional points for excellent diversification and innovation in food offerings
- Monitor and enforce compliance: regularly assess suppliers to ensure they are meeting the established food variety criteria and adjust future contracts based on performance

Tools:
- Tender documentation templates: include clauses on food variety and special diets
- Scoring matrices: create matrices to evaluate suppliers based on their ability to offer a diverse selection of foods
- Monitoring systems: use digital platforms to track supplier performance and menu offerings in real time

Connection with other actions:
- 3.1 Integration of sustainability criteria into food procurement tenders

Possible outputs:
- A more diverse and inclusive range of food options across campus, catering to various dietary needs
- Improved supplier compliance with food variety requirements, leading to healthier and more sustainable menus
- Increased student satisfaction due to more appealing and less repetitive meal choices

2.2 Mapping the actors and investigating the phases within food procurement in public canteens

UniBA

Tag: Offering and Procurement, ~~Training and Engagement, Spaces and services, Surplus and waste~~

Goal:
Diversify the food offer in university canteens by drawing inspiration from the food procurement and service management in school canteens.

Key actors:
- local food procurement system stakeholders (e.g. food suppliers, school managers, nutritionists, parents committee, etc.);
- researchers to carry on the action.7.3.

Users:
- **Students;**
- **University faculty**.

Expected results: Best practices that could be integrated in the food policy model for the university campuses.
Process: Map the network of actors involved in the food procurement in school canteens (e.g. food suppliers, school managers, nutritionists, parents committee, , etc.), and investigate the possible phases: from awarding the tender, through formulating the menu, and up to monitoring and evaluating the quality of the canteen service. This will be done by involving a company (i.e. a case study) operating in the public food procurement in primary and secondary schools.
Tools: Surveys, social network analysis, technical and scientific documents.
Connection to other actions:
- **7.3 Assessing users satisfaction in university food touchpoints** (canteens, bars and restaurants): 2.2 action will be preparatory to the action 7.3 as it will allow to define the possible best practices to be proposed to students/consumers that are the end beneficiaries of implanting actions

Possible outputs: "manifesto" of best practices that could be integrated in the food policy model for the university campuses.

2.3 Establishing a continuous feedback system for food offering variety

(Polimi DIG)

Tag: Offering and Procurement, Training and Engagement, Spaces and services, ~~Surplus and waste.~~

Goal: create a feedback system that actively involves students and staff to evaluate and improve the variety of food offerings on campus, ensuring that menus reflect the preferences and needs of the community.

Key Actors:
- University's procurement office
- University Communication Department/office

Users:
- **Students;**
- **University staff;**
- **University faculty**;
- **Food Suppliers.**

Expected results:
- Increased satisfaction with food services due to more responsive and diverse food offerings;
- Better alignment between food services and the dietary preferences or needs of students and staff
- Continuous improvement in the quality and variety of food options, as feedback will be used to adjust offerings regularly
- Enhanced engagement between the university, food suppliers, and the campus community

Process:
- Develop feedback channels: create multiple channels for collecting feedback, such as a dedicated website, mobile app, or periodic online and physical surveys/questionnaires. These should focus on gathering insights about food preferences, satisfaction, and suggestions for improvement
- Data collection and analysis: continuously collect and analyze the feedback data to identify gaps in the variety of food offerings (e.g., missing dietary options, dissatisfaction with menu repetition)
- Organize focus groups: set up periodic focus groups with student and staff representatives to discuss the feedback, explore new ideas, and co-create solutions with food service providers
- Implement changes: collaborate with suppliers to adjust the food offerings based on the feedback and ensure timely updates to the menus

Tools:
- Digital platforms: a website, mobile app, or digital survey tools for collecting feedback
- Data analytics tools: software for analyzing feedback and identifying trends in food preferences and variety gaps
- Meeting tools: scheduling and facilitation tools for organizing focus groups and feedback sessions.

Connection with other actions:
- **7.4** Establishment of a permanent listening forum

Possible output:
- *Improved responsiveness of food services, leading to menus that better reflect the preferences of the campus community*
- *Regular updates to food offerings based on user feedback, ensuring a fresh and varied selection*

2.4 Organizing training sessions for suppliers to promote food variety

(Polimi DIG)

Tag: ~~Offering and Procurement~~, Training and Engagement~~, Spaces and services, Surplus and waste~~

Goal:
Educate food suppliers on the importance and benefits of offering a diverse range of food products, helping them understand best practices for increasing the variety of their offerings to better meet the needs of the university community

Key Actors:
- University's procurement office or department is the responsible for organizing and delivering the training sessions.

Users:
- **Students;**
- **university staff;**
- **university faculty:** indirectly benefit from the improved nutritional quality of food available on campus
- **Suppliers:** Gain knowledge about nutritional guidelines and best practices, improving their product offerings

Expected results:
- Suppliers will offer a broader and more diverse range of food options, including catering to special dietary needs (e.g., vegetarian, vegan, gluten-free) and providing varied, healthy, and culturally inclusive menus
- Enhanced collaboration between suppliers and the university, aligning food offerings with the institution's health and sustainability objectives
- Improved student and staff satisfaction due to increased variety and quality in campus food services

Process:
- Develop training content: collaborate with food industry experts and nutritionists to create training modules that focus on the benefits of a varied diet, strategies for diversifying food offerings, and best practices for catering to special diets
- Conduct training sessions: organize regular training sessions for suppliers, which could be held in-person or online, covering topics such as nutritional diversity, seasonal ingredients, and how to incorporate local and sustainable products into their offerings
- Follow-up and feedback: after each session, gather feedback from suppliers to improve future training. Provide ongoing support to help suppliers implement the knowledge gained in their offerings
- Monitor supplier progress: track suppliers' progress in incorporating a wider variety of food products and adjust training content as necessary based on supplier performance and campus needs

Tools:
- Training materials: presentation decks, guides, and best practice documents created by nutritionists and food industry experts
- Digital platforms: tools for delivering online training sessions and for continuous communication with suppliers
- Feedback surveys: post-training evaluations to assess supplier engagement and effectiveness of the sessions

Connection with other actions:
- **6.2** Promoting food literacy, healthy eating, and sustainability education
- **1.2** Organizing training sessions for suppliers on nutritional guidelines

Possible output:

- *Suppliers consistently offering a more varied selection of foods that align with nutritional guidelines and the diverse needs of students and staff*
- *Enhanced supplier knowledge and skills, resulting in more innovative and inclusive food offerings across all campus services*
- *Continuous improvement in the diversity and quality of campus food services, contributing to the health and well-being of the university community*

2.5 Monitoring and assessing supplier commitment to food offering variety

(Polimi DIG)

Tag: Offering and Procurement, Training and Engagement, ~~Spaces and services, Surplus and waste~~

Goal: establish a continuous monitoring system to assess the commitment of suppliers to providing a diverse range of food offerings that meet the dietary needs and preferences of the university community

Key Actors:
- University's procurement office or department is responsible for establishing and managing the monitoring and assessment processes.

Users:
- **Students;**
- **university staff:** benefit from consistently high-quality, healthy, and sustainable food options, enhancing their dining experience and overall well-being.
- **University:** gains actionable insights to monitor supplier contracts, ensuring alignment with tenders' specifications.

Expected results:
- Ensure that suppliers consistently provide a wide variety of food options, including those that cater to special diets (e.g., vegetarian, vegan, gluten-free)
- Improve supplier accountability and transparency by regularly evaluating their adherence to food variety standards
- Foster long-term partnerships with suppliers who demonstrate strong commitment to offering diverse, healthy, and sustainable food options

Process:
- Define key performance indicators (KPIs): establish KPIs specifically related to food variety (e.g., number of diverse options offered, variety of special diet accommodations, frequency of menu changes)
- Data collection and reporting: implement tools for collecting real-time data on the variety of food offered by suppliers, such as menu analysis and customer feedback. Require suppliers to submit periodic reports detailing their food offerings and variety
- Regular audits and inspections: conduct regular audits and on-site inspections to ensure compliance with the variety requirements. compare supplier performance against the set KPIs
- Feedback and improvement: provide regular feedback to suppliers based on the data collected and audit findings, helping them make necessary adjustments to meet food variety expectations

Tools:
- Digital platforms: tools for real-time data collection and supplier reporting on menu variety and diversity of offerings
- KPI scorecards: use scorecards to evaluate supplier performance based on food variety criteria
- Audit checklists: Checklists to ensure all variety standards are being met during on-site inspections

Connection with other actions:
- **3.2** Implementation of monitoring systems to evaluate the quality and sustainability of food purchased
- **5.3** Monitoring the quantity and impacts of surplus food recovered
- **1.3** Monitoring and assessing supplier performance against nutritional guidelines.

Possible output:
- A comprehensive assessment of supplier performance in offering diverse food options, influencing future contract decisions
- Continuous improvement in the variety of food offerings on campus, aligned with student and staff preferences
- Stronger partnerships with suppliers who are committed to maintaining high standards in food variety, leading to increased customer satisfaction and a more inclusive campus food environment

3. Food Offering Sustainability

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Description

University campuses, as public purchasers, significantly influence markets through their procurement choices, shaping production, purchasing decisions, and consumption patterns (Rejeb et al., 2023). Recognizing this impact, the shift towards sustainable university procurement has gained momentum to align with European Sustainability Objectives (Kunzlik, 2013). Central to this transition is the EU's Green Public Procurement (GPP), a strategy that emphasizes sustainable food offerings in university settings, where large-scale service meets a diverse user base. Moving away from the traditional value-for-money paradigm, GPP prioritizes environmental and social considerations (Revez et al., 2023), fostering connections with local and organic agricultural supply chains. This approach has dual benefits: it promotes local agriculture, reducing carbon emissions from long-distance transportation, while also positively impacting university users' health (Lindström et al., 2020). Universities, serving thousands of meals daily, have unparalleled potential to influence sustainable, equitable, and healthier food systems through responsible procurement policies (Doherty et al., 2011). By prioritizing locally sourced, sustainably produced, and fair-trade goods, universities support small and medium-sized businesses, strengthen local economies, and advocate for fair wages and ethical labor conditions across supply chains. Moreover, ethical procurement ensures that affordable, healthy food is accessible to all students, particularly those from low-income backgrounds, reinforcing universities' roles in fostering social equity and inclusive food systems.

Background

University on-campus food services, including cafeterias, canteens, restaurants, catering services, and vending machines, operate under diverse supply models depending on the entity managing them. When outsourced to private entities, regulating food procurement through specific criteria becomes more complex. However, university "Food Points" increasingly demand local, Geographical Indication, and organic products. Emphasizing short food supply chains (SFSCs) and Alternative Food Networks (AFNs) ensures economic, environmental, and social sustainability.

Rules and regulations

- **Green Public Procurement (GPP)** is defined by the **European Commission** as "a process whereby public authorities seek to procure goods, services, and works with reduced environmental impact throughout their life cycle, compared to goods, services, and works with the same primary function that would otherwise be procured" (EC, 2008:4). Among the ten priority sectors identified by the EC for GPP, the "food and catering sector" is included. Although GPP is not mandatory for Member States, food procurement policies and specific measures have been widely adopted across Europe as part of a strategy to promote more sustainable food consumption models and resource-efficient economies.
- In **Italy**, GPP was introduced in 2008 with the ***Piano d'Azione Nazionale GPP* (GPP National Action Plan)**. This plan established *Criteri Ambientali Minimi* (CAM, Minimum Environmental Criteria) for various categories of products and services procured by public administrations, including food procurement and mass catering services. The CAM were formally adopted through the legislative decree of July 25, 2011, and later updated by the decree of March 10, 2020. The latter mandates that the technical specifications and contractual clauses outlined in the CAM must be applied for the full value of tender contracts, addressing the environmental impacts across the entire lifecycle of mass catering services - from production to waste disposal. These guidelines encourage the adoption of socio-environmental improvements at every stage of the process. By adhering

to these criteria and implementing additional quality standards, universities can play a pivotal role in addressing the socio-economic and environmental externalities associated with the current food system. In doing so, they can position themselves as pioneers in driving innovation and sustainability.

- **Directive 2014/23/EU** on the award of concession contracts;
- **Directive 2014/24/EU** on public procurement;
- **Directive 2014/25/EU** on procurement by entities operating in the water, energy, transport and postal services sectors.
- In the context of food public procurement, GPP is a key component of the of **Europe Strategy 2020** and a winning approach to reach **The Farm to Fork** objective of transitioning to a more sustainable food system, the core of the **European Green Deal**.
- **GPP** aims at improving a sustainable food production and consumption by leveraging the weight of public authorities' purchases in a Circular Economy perspective, as outlined in the **Communication (COM -2008- 400) "Public procurement for a better environment"**. At the European level, the GPP Advisory Group is the pool of experts responsible for giving guidelines and advice for developing and implementing National GPP Policies by Member States, which remain voluntary. The core of the EU GPP policies is represented by a set of EU GPP Criteria that Member States should evaluate and incorporate into their Public Procurement Systems. In Italy, the GPP was introduced in 2008 with the **GPP National Action Plan**. It establishes the 'Minimum Environmental Criteria' (CAM) for various categories of products, services and works purchased or entrusted by the public administration, integrating environmental sustainability into public procurement processes. This ensures that public sector purchases adhere to specific ecological standards. The **Ministerial Decree 10 March 2020** on Minimum Environmental Criteria for the Canteen Service and Food Supply addresses key aspects are covered such as Sustainable Production, Waste Reduction, Energy Efficiency, Packaging, Transportations, and Nutritional Quality, and guides the adoption of the CAM in that sector.

Areas of opportunity

- Facilitating access to high-quality and sustainable food offering for university population
- Involvement of university population and local agricultural entrepreneurs in a participatory approach
- Opening a potential market segment to local farmers and facilitating their collaboration with tendering companies
- Creation of spaces of direct interaction to educate university population to sustainability eating habits

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3.1 Integration of sustainability criteria into food procurement tenders
(Polimi DIG)

Tag: Offering and Procurement, ~~Training and Engagement, Spaces and services, Surplus and waste~~

Goal:
Incorporating sustainability criteria into university food tendering, ensuring that food suppliers and food service providers prioritize socio-environmental responsibility and contribute to the overall university's sustainability goals.

Key Actors:
- University's procurement office or department

Users:
- **Students;**
- **university staff**: gain access to more sustainable food products in line with the university's sustainability goals

Expected results:
- Procurement of food products that align with sustainability goals such as local sourcing, organic sourcing, and minimal packaging;
- Reduction of environmental footprint along the whole university food supply chain;
- Strengthened relationships with suppliers who prioritize sustainable practices;

Process: updating university food procurement tenders to include specific sustainability criteria and minimum thresholds. They may cover areas like the use of organic, locally sourced, or fair-trade products, the reduction of single-use plastics, and practices that minimize carbon emissions in the supply chain, in line with current legislation. Suppliers bidding for contracts will be required to demonstrate their compliance with these standards and current legislation. During the tender evaluation, suppliers will be assessed on their sustainability performance. Regular monitoring will be implemented to ensure that suppliers maintain the agreed-upon standards throughout the contract period.

Tools:
- Tender evaluation criteria
- AI and predictive analytics tools
- Monitoring systems
- Reporting tools

Connection with other actions:
- 1.1. Inclusion of nutritional parameters in procurement tenders
- 2.3. Including clauses for food variety in procurement tenders
- 7.1. Comprehensive food environment assessment

Possible outputs:
- Detailed procurement contracts
- Increased suppliers compliance with sustainability audits and performance evaluation

3.2 Implementation of monitoring systems to evaluate the quality and sustainability of food purchased

(Polimi DIG)

Tag: Offering and Procurement, ~~Training and Engagement, Spaces and services, Surplus and waste~~

Goal:
Ensuring continuous assessment and improvement of food quality and sustainability in the supply chain by implementing comprehensive monitoring systems. The aim is to promote transparency, enhance accountability, and support sustainable practices that align with health, environmental, and ethical standards.

Key Actors:
- University's procurement office;
- dining/catering services providers;
- food suppliers;
- university staff;
- students.

Users:
- **Students;**
- **university staff**: gain access to more sustainable and healthier food products
- **Universities**: enhance their reputation in terms of socio-environmental responsibility

Expected results:
- Enhanced transparency and accountability in the food supply chains
- Improved compliance with sustainability standards and certifications
- Reduction of environmental impacts (e.g. carbon footprint, water and energy usage, and waste)

Process: defining the key metrics to be used to assess both food quality and sustainability. These could include indicators such as food freshness, nutritional content, carbon footprint, water usage, and ethical sourcing practices. Once the metrics are defined, systems need to be set up to collect data at different points in the supply chain. This involves gathering information from various sources including, for instance, reports from suppliers and feedback from consumers, and consequently conduct regular audits and reviews. These audits can help ensure that the suppliers and all parties involved in the supply chain are adhering to the defined standards.

Tools:
- Data analytics platforms
- Auditing tools
- Sustainability reporting software

Connection with other actions:
- 1.3. Monitoring and assessment suppliers performance against nutritional guidelines
- 2.5. Monitoring and assessing supplier commitment to food offering variety
- 5.3. Monitoring the quantity and impact of surplus food recovered

Possible Output:
- Comprehensive report detailing supplier performance and areas of improvement
- Enhanced supplier relationships due to clearer expectations and accountability systems
- Alerts and notifications for non-compliance of deviations from acceptable quality and sustainability thresholds

3.3 Collaborative Food Services offering sustainable, local and fresh food

(Polimi Design, UniPR)

Tag: ~~Offering and Procurement~~, Training and Engagement, Spaces and services, ~~Surplus and waste~~

Goal: Explore collaborative food services within the university ecosystem, promoting active students and university staff participation and co-management and the involvement of local producers, belonging to short food supply chains (SSCs) and alternative food networks (AFNs) as providers and coproducers of a sustainable offering of raw and low processed food. This action aims to support fresh, local, and sustainable food delivery, transformation and consumption while fostering disintermediation, a sense of community ownership, and shared responsibility in food distribution and accessibility.

Key Actors:
- **University's procurement office;**
- **dining/catering services providers;**
- **food suppliers;**
- **university staff;**
- **student;**
- **Local farmers, AFNs, SSCs**

Users:
- University staff;
- Students.

Expected results:
- facilitate the access to high-quality, fresh, organic and sustainable food, through disintermediation and collaborative service models (e.g.: purchasing groups, coproduced distribution services, bio-corners for direct sales, and so on);
- stimulating a sense of participation and strengthening community feeling getting access to healthy and sustainable food;
- Increase the amount of food delivered with the university ecosystem from local producers, AFNs and SSCs;
- Strengthened relationships with suppliers who prioritize sustainable practices;

Process:
- Identifying the needs and expectations of the university community for collaborative food delivery services as well as spatial focal points;
- Mapping local producers, AFNs and SSCs;
- Co-designing solutions with stakeholders, including students, staff, universities' social centres and food safety experts, chefs and local producers;
- Setting up a set of internal and temporary food services co-managed by users (for selling, group purchasing, distribution, delivery, meal preparation, ...);
- Training sessions;
- Piloting and testing the services and collecting feedback.

Connection with other actions:
- 3.1 Integration of sustainability criteria into food procurement tenders
- 4.1 Hybridize traditional spaces for food consumption (bars, restaurants, canteens)
- 4.2 Enhancing unconventional spaces for food consumption
- 4.3 Self-production

Tools:
- participatory approach
- focus groups/survey
- codesign processes and tools
- rapid prototyping
- testing of pilot services

Possible outputs: *organization of a Solidarity Purchasing Group that involve farmers belonging to AFN feasible for university population, creation of collection and pick-up points inside university campus, University Bio-Corners offering local and sustainable food; A student-run food co-op selling fresh, sustainable products; Tools for collaborative food delivery; Structured meal-prep collaborations within the campus canteens; Skills development programs for students and staff in food safety and preparation.*

4. Space & Services for Food Consumption and self-production

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Description

University campuses need to address a range of essential requirements related to food consumption, including the act of eating food in a social manner involving preparation, choice, ordering, and the use of verbal and nonverbal communication (Volli, 2021). Humans interact within a spatial dimension, which may affect preferences and attitudes towards its arrangement (Costa, 2010). To do so, encouraging healthy behaviours within the food system is possible by establishing places and services that effectively serve this goal. This category of actions should encompass a variety of initiatives, such as enhancing existing spaces, creating new ones, broadening understanding and consciousness about food consumption through firsthand experiences, fostering self-production places to grow produce, and offering on-site activities.

Background

Space and service for Food consumption within university campuses are manly dining areas, such as cafes, restaurants, and bars. Moreover, the campus boasts a wide range of informal spaces where people consume food, including classrooms, corridors, greenery, and terraces.

Rules and regulations

In Italy, the regulation of food consumption spaces is governed by several laws and guidelines. Firstly, **Regulation (EC) No 852/2004** of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs sets out the general principles for ensuring the safety and quality of foodstuffs. In Italy, this regulation has been implemented through **D.L. 193/2007**, which establishes penalties for non-compliance with HACCP (Hazard Analysis and Critical Control Points) procedures. The ASL (Local Health Authority) is responsible for enforcing these penalties. In addition, the Italian Ministry of Health has issued **guidelines for the management of food consumption spaces in schools, hospitals, and other public institutions**, aimed at preventing and reducing food waste. These guidelines are directed at entities that manage catering services, including schools, companies, hospitals, social services, and community canters. Furthermore, **local regulations on hygiene and building codes** must also be respected when it comes to spaces used for consuming food. Finally, it is essential to provide **HACCP** training to personnel working in these spaces to ensure that they can implement proper food safety procedures.

Areas of opportunity

- equipped spaces for food consumption other than canteens
- personalized needs may affect the service and spaces for food consumption
- adaptation to extreme weather conditions
- informal area for food consumption - grassroots initiatives

References

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4.1 Hybridize traditional spaces for food consumption and self-production
(bars, restaurants, canteens)
(Polimi Design)

Tag: ~~Offering and Procurement,~~ Training and Engagement, Spaces and services, ~~Surplus and waste~~

Goal:
Diversifying the functions to improve the level of sociality and the awareness towards food consumption.

Actors:
- University technical departments;
- campus logistics and management teams;
- university communication department;
- University Faculty (optional).

Users:
- **Students;**
- **University Staff;**
- **University Faculty;**
- **local community members.**

Expected results: new services, formats and spatial layout to improve the existing places within the campus

Process: mapping the existent food consumption space, engaging the users of the space by collecting the needs and desires, mapping the users' pathways, , translating them into design layouts, prototyping the solutions, testing the results, collecting feedback, improving the space/service for the final output

Tools: co-design tools, technical surveys

Connection with other actions:
- **2.2** Including clauses for food variety in procurement tenders
- **2.3** Establishing a continuous feedback system for food offering variety
- **2.5** Monitoring and assessing supplier commitment to food offering variety

Possible outputs: communication panels about sources/nutritional value/seasonality of food, vertical walls for farming

4.2 Enhancing unconventional spaces for food consumption

(Polimi Design)

Tag: ~~Offering and Procurement, Training and Engagement,~~ Spaces and services, ~~Surplus and waste~~

Goal:
Providing new equipped spaces for informal food consumption, promoting comfort and healthy environment for the community, enreaching university realm with ephemeral and temporary solution which can hack the existing space to be adapted to places for food consumptions.

Actors:
- University technical departments;
- campus logistics and management teams;
- University Faculty (optional);
- Local Farmers, AFNs, SSCs

Users:
- **students**;
- **University staff;**
- **University Faculty;**
- **canteens staff;**
- **local community.**

Expected results: new services, formats and layout able to boost university realm with ephemeral and temporary solution hacking the existing space.

Process: mapping the unconventional spaces used by the community for food consumption within the campus, collecting needs and desires, translating them into design layouts, defining the intervention area(s), prototyping the solutions, testing the results, collecting feedback, improving the space/service for the final output.

Tools: technical surveys, co-design

Connection with other actions:
- **3.1.** Creation of Solidarity Purchasing Groups among the University population
- **3.4.** University Bio-Corners offering local and sustainable food

Possible outputs: portable lunch kit for a day place for food consumption, dishes washing area etc.

4.3 Self-production

(Polimi Design, UNIPR)

Tag: ~~Offering and Procurement, Training and Engagement,~~ Spaces and services~~, Surplus and waste~~

Goal: Set up cultivation areas within the university campus to engage both the academic and local communities. This project aims to promote self-production, raise awareness of sustainable and organic agriculture, improve social interactions, and strengthen connections between the university and the surrounding neighborhood.

Actors:
- University technical departments;
- campus logistics and management teams;
- University Faculty (optional);
- Local Farmers, AFNs, SSCs

Users:
- University staff;
- University Faculty;
- University staff;
- local community.

Expected Results:
- Increase self-production and awareness of seasonal, local produce.
- Foster social interactions between the university and community, creating new opportunities for exchange and learning.
- Encourage collaboration between the agricultural sector and the university population.
- Educate and raise awareness about sustainable, organic farming practices.

Process:
1. **Mapping Suitable Areas**: Identify spaces within the campus where cultivation and garden boxes can be set up.
2. **Engaging the Community**: Open a call for participation directed at students, university staff, and local families.
3. **Collecting Needs and Designing Solutions**: Gather participants' needs and preferences, then define and translate these into design layouts.
4. **Prototyping and Testing**: Build and test prototypes of the spaces, gather feedback, and refine the solutions accordingly.
5. **Training and Education**: Organize workshops and training sessions with experts and local farmers to educate participants on sustainable practices.

Tools:
Co-design tools, and surveys to collect feedback and refine the project.

Connection with other actions:
- **3.4.** University Bio-Corners offering local and sustainable food
- **5.1** Inclusion of surplus food recovery and redistribution criteria in food procurement tenders

Possible Outputs:
- *Creation of cultivation areas using traditional or alternative farming methods (hydroponics, aeroponics, vertical farming) to get community gardens and/or single allotments*
- *Equipment storage areas and designated cultivation zones within the campus dedicated to both food production and community engagement.*

5. Surplus food and food waste management

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Description

Surplus food management and food waste reduction have become significant issues in universities, reflecting the broader push toward sustainability in education and research institutions worldwide. Within these institutions, **recovery and redistributing surplus food** generated from food services and, in this way, limiting the total amount of food waste, meanwhile rising awareness in the university community about these crucial issues, require paying particular attention to causes, drivers and related impacts shaping these problems (Leal Filho et al., 2023). In universities, this includes a combination of **forecasting demand in cafeterias, optimizing portion control, redistributing surplus food to charities, and composting organic waste**. These efforts aim to reduce environmental impacts, promote social responsibility by providing food to the neediest, and enhance the efficiency of resource use.

Background

According to Deliberador et al. (2021), food waste on university campuses primarily originates from two sources: the **cooking and preparation processes** in dining halls, and **consumer behavior**. The latter can be influenced by various factors, including personal attributes - e.g. age and gender - and socio-economic characteristics such as, among others, e.g. education, religion, family wealth, origin, meal costs, and awareness (Qian et al., 2022; Zhang et al., 2021). To mitigate food waste, universities can adopt circular strategies, such as surplus food recovery and redistribution, to promote a more sustainable approach to food resource management and address socio-environmental concerns.

Rules and regulations

As mentioned above (see section 4.3), the ***Criteri Ambientali Minimi* (CAM, Minimum Environmental Criteria)**, introduced by the Italian Legislative Decree of March 10, 2020, requires food service providers—such as catering companies and university canteens—to manage food surpluses and minimize waste. This mandate calls for the development of synergistic strategies through collaboration with key stakeholders, the revision of outdated practices, and updates to public procurement processes.

In this context, the ***Legge Gadda* (Law No. 166/2016)** plays a crucial role by facilitating surplus food donations. It reduces bureaucratic barriers and provides incentives for institutions, including universities, to donate excess food to non-profit organizations. This legislation encourages the recovery and redistribution of food surpluses from university canteens, cafeterias, and events, helping universities to both combat food waste and address food insecurity (Ferrara, 2018).

Areas of opportunity

- Optimizing food service operations
- Enhancing awareness and behavioral change
- Expanding food redistribution networks
- Adopting circular economy practices

References

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5.1 Inclusion of surplus food recovery and redistribution criteria in food procurement tenders

(Polimi DIG)

Tag: Offering and Procurement, ~~Training and Engagement, Spaces and services~~, Surplus and waste

Goal:
Integrating surplus food recovery and redistribution requirements into public tenders for university food services, ensuring that service providers actively contribute to reducing food waste and promoting sustainability.

Key Actors:
- University's administration or procurement offices

Users:
- Dining/catering services providers;
- Food suppliers;
- University staff;
- University Faculty;
- Students;
- local community.

Expected results:
- Increased participation of suppliers that prioritize food waste reduction and surplus redistribution;
- Establishment of clearly stated standard for managing surplus food and food waste in university campuses;
- Reduction of the overall amount of food waste generated by university food services;

Process: revising public tender documents to include specific criteria related to surplus food recovery and redistribution. These criteria will require bidders to demonstrate their strategies for minimizing food waste, donating surplus food to local charities, or collaborating with local food recovery networks. During the tender evaluation, vendors will be assessed based on their ability to meet these sustainability requirements. Once contracts are awarded, regular monitoring and reporting will be conducted to ensure compliance with the established criteria.

Tools:
- AI and predictive analytics tools
- Reporting tools
- Monitoring systems

Connection with other actions:
- **3.3** Integration of sustainability criteria into food procurement tenders
- **7.1** Comprehensive Food Environment Assessment

Possible outputs:
- *Detailed procurement contracts*
- *Guidelines for managing surplus food*
- *Partnerships with local food recovery organizations*
- *Increased awareness and engagement in sustainability initiatives within the university community*

5.2 Establishing collaboration with companies and start-ups to adopt innovative technologies and practices for surplus food managements

(Polimi DIG)

Tag: ~~Offering and Procurement, Training and Engagement, Spaces and services~~, Surplus and waste

Goal:
Leveraging partnerships with companies and start-ups in order to implement innovative technologies and practices that enhance surplus food management in dining services, reducing waste, and improving food services sustainability.

Key Actors:
- University's administration or procurement offices
- partnering companies and/or start-ups

Users:
- **University staff;**
- **University Faculty;**
- **Students;**
- **local community**

Expected results:
- Adoption of cutting-edge technologies and/or practices to track and manage surplus food and reduce food waste
- Reduction of environmental impacts through better resource utilization
- strengthened partnerships between the university and emerging **and/or consolidated** businesses

Process: identifying companies and start-ups with expertise in food technology and initiating partnerships to collaborate on implementing solutions tailored to the unique needs of university food services. This may involve introducing smart inventory management systems, food-sharing platforms, or AI-driven solutions for predicting demand and reducing waste. The adoption and integration of these technologies could be optimized through regular feedback and communication with companies, start-ups involved, as well as final recipients.

Tools:
- Mobile apps or digital tools
- Inventory management systems

Connection with other actions:
- 2.2. Mapping the actors and investigating the phases within food procurement in public canteens
- 7.4 Permament Co-Design platform for university food policy and services innovation

Possible Output:
- *Development of food-sharing platforms or mobile apps*
- *Reports on the effectiveness of the technologies adopted*

5.3 Monitoring the quantity and impacts of surplus food recovered

(Polimi DIG)

Tag: ~~Offering and Procurement, Training and Engagement, Spaces and services~~, Surplus and waste

Goal: ensuring effective tracking and assessment of the quantity of surplus food recovered and evaluate the socio-economic and environmental impacts of its redistribution.

Key Actors:
- University staff;
- Students;
- Dining/catering services/ food suppliers.

Users:
- University Staff;
- Students;
- local community;
- third sector organizations.

Expected results:
- Collection of accurate data on the amount of food recovered and redistributed
- Quantification of the environmental benefits (e.g. carbon and water footprint)
- Analysis of the social impact (no. of individuals or households benefiting)

Process: collecting data on the quantity of surplus food recovered from e.g. catering, canteens and bars by using digital tracking systems. Key performance indicators (KPIs) measure the social, economic, and environmental impacts, such as e.g. carbon footprint, water footprint, and no. of recipients served . Regular evaluations ensure the process aligns with goals, and reports are generated for stakeholders to assess performance and improvements.

Tools:
- Mobile apps or digital tools
- Inventory management systems
- Reporting software

Connection with other actions:
- 7.1. Comprehensive Food Environment Assessment
- 7.4 Permament Co-Design platform for university food policy and services innovation

Possible Output:
- *Policy recommendations*
- *Awareness campaign materials*

5.4 Reduction of food waste

(UNINA)

Tag: ~~Offering and Procurement, Training and Engagement, Spaces and services~~, Surplus and waste

Goal: active involvement of students and staff allows for the promotion and monitoring of waste reduction projects.

Expected results: implementation of effective waste reduction strategies that lead to a measurable decrease in food waste generated by canteen operations.

Process: students can provide feedback on appropriate portion sizes, food preferences, and practices that reduce uneaten food.

Tools: technical surveys

> ***Possible outputs:*** *implementation of initiatives such as composting or collaboration with catering facilities to donate excess food.*

6. Training & Awareness for Healthy/Sustainable Eating Habits

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Description

The concept of sustainability has spread across universities, improving internal practices and contributing to local policies (Massaglia et al., 2022). Academic education is essential in training future leaders in government, industry, and academia, shaping the future (Niu, Jiang, and Li, 2010). Universities have the responsibility to educate citizens on sustainability issues, regardless of their field (Lewis, 2014). Integrating sustainability strengthens innovation and the role of universities in co-producing knowledge and tools for social transformations (Trencher et al., 2014), contributing to the Sustainable Development Goals of the 2030 Agenda. With this in mind, the concept of "green universities" is spreading globally, aiming to improve sustainability perception within institutions and develop informed skills for future policy decisions (Massaglia et al., 2022). Food-related issues are especially important, as production and consumption patterns impact sustainability, climate change, and resource preservation (Springmann et al., 2018).

This category of actions should include a series of initiatives, such as a survey among students to understand the knowledge of healthy and sustainable food lifestyles followed, awareness of the importance for physical well-being and more, the impact of eating habits on climate change and sustainable food systems.

Background

Universities play a crucial role in promoting sustainability (social, economic, etc.). The integration of sustainability within academic contexts strengthens society and enhances innovation, both inside and outside the institution. This process fosters continuous knowledge exchange between universities, local communities, and the private sector, positioning universities as central actors in the co-design and co-production of tools and knowledge necessary for social transformations toward a sustainable future.

Rules and regulations

The role of education in promoting sustainable development has evolved significantly since the Brundtland Report of 1987, which defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This established a vision that balances economic growth, social equity, and environmental protection. In the 1990s, Education for Sustainable Development (ESD) gained traction through international initiatives. The 1992 Earth Summit in Rio de Janeiro emphasized the importance of education, leading to the creation of Agenda 21, a global action plan for sustainable development. This plan dedicated an entire chapter to education, highlighting its essential role in addressing environmental issues, promoting awareness, ethical values, and behaviors consistent with sustainable development, and ensuring active public participation.

With the dawn of the new millennium, sustainable development gained further relevance through global initiatives. The United Nations Decade of Education for Sustainable Development (2005-2014) promoted the integration of ESD at all educational levels, increasing global awareness. The Global Action Programme (GAP) (2015-2019) reinforced this commitment by integrating ESD into educational policies.

In 2015, the adoption of the Sustainable Development Goals (SDGs) by the United Nations marked a significant turning point. SDG 4 focuses on quality education and includes Target 4.7, which aims to ensure that by 2030 all students acquire the knowledge and skills necessary to promote sustainable development, including human rights, gender equality, and global citizenship. In Italy, a memorandum of understanding signed on July 26, 2023, between the Ministry of Education and the Italian Alliance for Sustainable Development (ASviS) aims to promote a culture of sustainable development in schools. The initiative seeks to educate new generations about the 2030 Agenda, disseminating knowledge about the SDGs through educational activities and seminars.

Areas of opportunity

- Healthy/Sustainable Eating Habits Education
- Courses or teaching modules on sustainability and sustainable food systems
- Community Engagement

6.1 Analysing the integration of sustainable food systems in educational programmes

(UniCT)

Tag: ~~Offering and Procurement,~~ Training and Engagement, ~~Spaces and services, Surplus and waste~~

Goal: Verify whether and how sustainable food systems are promoted in the university environment, with particular attention to its integration in educational programmes and extracurricular activities.

Key Actors:

- **University Administration:** Responsible for integrating sustainability into university policies, supporting academic programs and extracurricular activities that promote awareness and ensure alignment with the Sustainable Development Goals (SDGs).
- **University faculty:** Play a crucial role in integrating sustainability into academic programs and research, promoting innovation and involving students in practical and interdisciplinary projects**.**
- **Sustainability Office/Committee:** Responsible for managing and coordinating sustainability initiatives within the university, including events, workshops, and awareness campaigns, as well as collaborating with internal departments and external partners to promote sustainability.

Users:

- **Students:** The primary users of this initiative, who actively participate in courses and programs related to sustainability, acquiring knowledge and skills to address the challenges of sustainable development and promote healthy eating habits.
- **Local Stakeholders:** These are local organizations, such as businesses and institutions, who collaborate with universities on sustainability initiatives.
- **Local Community:** Includes members of the community, such as local producers, residents, and associations, who actively participate in university initiatives, contributing to the spread of sustainability and the adoption of sustainable practices in daily life.
- **University Administration:** Utilizes evaluation results to enhance program offerings and better integrate sustainability concepts.
-

Expected results: Evaluate the level of integration of sustainable food systems across various disciplinary fields, identifying best practices adopted and pinpointing areas for improvement in promotion, both in curricular programs and extracurricular activities.

Process: Mapping of teaching modules and extracurricular activities that include concepts related to food sustainability.

Tools: Quantitative document analysis involving the review and analysis of study programs, teaching modules, and extracurricular activities to quantify the number of courses and initiatives that include references to food sustainability.

Connection with other actions:

- **6.2 Promoting Food Literacy, Healthy Eating, and Sustainability Education**
- **7.2 Exploring students' perceptions of sustainable eating habits**

Possible outputs: A report that provides a detailed mapping of the integration of sustainable food systems in study programs, recommendations for improving integration in courses and educational activities, and proposals for introducing new modules or study paths dedicated to sustainable food systems.

6.2 Promoting Food Literacy, Healthy Eating, and Sustainability Education

(UniMI, UniNa)

Tag: ~~Offering and Procurement,~~ Training and Engagement, Spaces and services~~, Surplus and waste~~

Goal: To raise awareness about the importance of healthy and sustainable eating, training campus members with practical skills for meal preparation and planning, increasing awareness of food choices. Educating on the importance of reducing the consumption of ultra-processed foods and diets based on animal-derived proteins and foster a culture of health, wellness, and environmental stewardship within the campus community, promoting a balanced diet rich in plant-based foods and encouraging the choice of organic, seasonal, and locally sourced products.

Key Actors:
- University educational program coordinators;
- Sustainability experts;
- Students.

Users:
- Students;
- University faculty;
- University Staff;
- Local community.

Expected results: improved stakeholders' awareness of the benefits of a healthy and nutritious diet. Increased participation in food literacy workshops and events, enhanced knowledge of nutrition, environmental impact of food choices, and conscious consumption among participants, and positive changes in dietary habits that also reduce the campus's ecological footprint, promoting behaviour practices with a lower environmental impact, prioritizing Italian, organic, and local foods.

Process: Implementing these programs begins with developing a curriculum focused on nutrition, meal planning, sustainable food practices, and conscious consumption. Encouraging stakeholders towards healthier and more sustainable diets through Food Nudging, targeted strategies such as strategic placement, increased visibility, and expanded informational content related to healthy foods, will be a key component. Collaboration with nutritionists, chefs, and sustainability experts will be essential for delivering engaging workshops that highlight the link between dietary choices and environmental impact. To promote these programs effectively, universities can utilize various campus communication channels. Collecting feedback will be crucial to evaluate the programs' effectiveness and guide subsequent changes.

Tools: Educational materials (brochures, online resources focusing on both health and sustainability), feedback, and evaluation tools (post-workshop surveys) can be employed; technical surveys, empirical analysis.

Connection with other actions:
- **1.2** Organizing training sessions for suppliers for nutritional guidelines;
- **2.4** Organizing training sessions for suppliers to promote food variety;
- **6.1** Analysing the integration of sustainable food systems in educational programmes.
- 7.2 Exploring students' perceptions of sustainable eating habits

Possible outputs: classes, workshops, seminars, events to promote healthy and mindful eating habits, open-access educational materials (MOOC etc.).

7. Assessment, Codesign and Feedback

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Description

Collective meal settings can represent crucial areas for interventions aimed at promoting healthier and more sustainable dietary practices (Thorsen, 2010), this is because evidence indicates that the social and physical characteristics of food environments, including the organizational and logistical structures of food supply systems, have a significant impact on what and how people eat (Westhoek et al., 2016). In the broader context of collective catering, a particularly important role is played by school catering. The main proposal of school catering is twofold: educational and nutritional. A balanced diet is essential to promote a culture of prevention and improve health. Public catering in schools daily delivers a high number of meals which, if managed rationally, would effectively steer the urban food system towards a path of sustainability (Wahlen et al., 2012). Creating sustainable canteens also means educating students, teachers, and parents to reduce the environmental impact of these canteens, for example, by preventing and limiting food waste (Derqui et al., 2018).

Background

Generation Z is demonstrating a growing attention to the consumption of sustainable foods, fueled by an increasingly widespread awareness of the environmental and social impact of food choices. Directly involving young people and university canteen staff in sustainable initiatives not only promotes the adoption of more responsible eating habits but also strengthens their commitment to a sustainable lifestyle.

Rules and regulations

There are no specific rules or regulations regarding the involvement of university canteen staff and students in promoting sustainable public procurement in university canteens.

Areas of opportunity

- Actively involve students and staff in the decision-making process regarding canteen management.
- Educate students and staff on the importance of adopting healthy food habits.
- Implement effective strategies to reduce food waste.

References

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7.1 Comprehensive Food Environment Assessments

(UniMI)

Tag: ~~Offering and Procurement,~~ Training and Engagement, ~~Spaces and services, Surplus and waste~~

Goal:
The primary goals of this initiative include identifying specific areas where **healthy food options are lacking**, **assessing the satisfaction of students and staff** with current food offerings, **providing data-driven recommendations**, and eventually **develop an eco-rating system/score** to communicate the environmental impact of food products sold on campus. By achieving these goals, universities can better understand the dietary needs of their diverse populations and provide data to make informed choices.

Key Actors:
- University administration;
- dining services providers;
- sustainability committee;
- University faculty (research teams);
- vendors;
- food suppliers.

Users:
- Students;
- University faculty;
- University staff;
- university policymakers.

Expected results: The development of a comprehensive report detailing the current state of the food environment, the identification of specific gaps in healthy food availability, and actionable recommendations for policy changes and develop framework to produce eco-rating system/score for the university.

Process: The process begins by developing assessment criteria based on established food environment frameworks, conduct surveys and focus groups to gather qualitative and quantitative data, analyse the data to identify trends and gaps, and prepare a comprehensive report with findings and recommendations.

Tools: Survey platforms such as Google Forms or Survey-Sparrow for data collection, MS Excel for analysing survey results and EIA tools like SimaPro, OpenLCA.

Connection with other actions:
- **3.1** Integration of sustainability criteria into food procurement tenders.
- **5.3** Monitoring the quantity and impacts of surplus food recovered.
- **7.3** Assessing user satisfaction in university food touchpoints.

Possible outputs: The possible outputs of this initiative will include a detailed food environment assessment report, a presentation summarizing findings for university stakeholders, development of eco rating system methodology and actionable recommendations aimed at enhancing food offerings on campus.

7.2 Exploring students' perceptions of sustainable eating habits
(UniCT)

Tag: ~~Offering and Procurement,~~ Training and Engagement, ~~Spaces and services, Surplus and waste~~

Goal: Explore students' perceptions regarding sustainable food systems (included healthy/sustainable eating habits) by investigating their level of awareness on this topic and assessing whether they feel adequately prepared by the university on this subject.

Key actors:
- **University Administration**: Responsible for integrating sustainability into university policies, supporting academic programs and extracurricular activities that promote awareness and ensure alignment with the Sustainable Development Goals (SDGs).
- **University Faculty: Professors -** They are responsible for integrating sustainability into academic programs, raising students' awareness of environmental issues, and promoting active learning through teaching activities and projects.
- **Sustainability Office/Committee:** Responsible for managing and coordinating sustainability initiatives within the university, including events, workshops, and awareness campaigns, as well as collaborating with internal departments and external partners to promote sustainability.

Users:
- **Students:** The primary users of this initiative, who actively participate in courses and programs related to sustainability, acquiring knowledge and skills to address the challenges of sustainable development and promote healthy eating habits.
- **Local Stakeholders:** These are local organizations, such as businesses and institutions, who collaborate with universities on sustainability initiatives.
- **Local Community:** Includes members of the community, such as local producers, residents, and associations, who actively participate in university initiatives, contributing to the spread of sustainability and the adoption of sustainable practices in daily life.
- **University Administration:** Utilizes evaluation results to enhance program offerings and better integrate sustainability concepts.

Expected results: Evaluate the level of awareness among students regarding healthy/sustainable eating habits issues, identify their opinions on the quality and effectiveness of the training received, and detect best practices and perceived gaps in the education, as well as areas where they would like more information or support.

Process: Administering questionnaires and conducting interviews to collect data on students' opinions and experiences regarding education on food sustainability.

Tools: Use of questionnaires administered online through the university's digital platforms and other communication channels

Connection with other actions:
- **6.1** Analysing the integration of sustainable food systems in educational programmes
- **6.2** Promoting Food Literacy, Healthy Eating, and Sustainability Education

Possible outputs: Proposals for initiatives that can increase students' awareness and engagement in sustainable eating habits.

7.3 Permanent Co-Design platform for university food policy and services innovation

(Polimi Design, UniNa)

Tag: ~~Offering and Procurement,~~ Training and Engagement, Spaces and services, ~~Surplus and waste~~

Goal:
To actively involve students, faculty and staff in the co-design and adaptation of the food policy guidelines and actions, fostering active listening processes, direct engagement in the redesign of existing services and the creation of new ones tailored to the needs and diversity of university campuses; provide recommendations and guidelines to the university administration to improve food policies so that they effectively meet the evolving user needs and sustainability requirements.

Key actors:
- **Students;**
- **university staff;**
- **university faculty;**
- **Sustainability offices/commettee;**
- **food policy staff.**

Users:
- Students;
- University faculty;
- University staff.

Expected results:
- Increased sense of ownership and engagement among students and staff in food system governance;
- Improved food environments across campuses promoting sustainability and well-being thanks to a tailored approach and the active engagement of university students and staff;
- Implementation of effective strategies and actions in a continuous improvement approach;

Process: development of a codesign platform combining different approaches from active listening tools to codesign and active participation processes. Selection of a set of food services as testing actions, activation of the tools, collection of data, refinement of the results and recommendations for implementing or tailoring the solution to the context.

Tools: technical surveys, questionnaire to measure student satisfaction and investigate areas for improvement, codesign processes and tools

Connection with other actions:
- **2.3** Establishing a continuous feedback system for food offering variety
- **5.3** Monitoring the quantity and impacts of surplus food recovered
- **5.4** Reduction of food waste
- **7.2** Exploring students' perceptions of sustainable eating habits
- **7.3** Assessing users satisfaction in university food touchpoints (canteens, bars and restaurants)

Possible outputs: create a structured channel for the continuous collection of suggestions, ideas and feedback from students, canteen staff and university administrators; develop a series of tools for codesign e redesign of existing and new services; tools and recommendation for the adaptation and implementation of the food policy guidelines.