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Overview and analysis of sustainable product procurement criteria in the EU food sector

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Contents

Abstract

The European Union (EU) food system faces various converging crises, including health, environmental, societal, and economic challenges such as climate change, nature degradation, and increasing inequalities. Public procurement, accounting for 14% of the EU GDP, holds potential in shaping food systems towards sustainability and promoting population health. Recognising its transformative potential, the Farm to Fork Strategy under the European Green Deal pushes to determine criteria for sustainable food procurement to boost sustainable farming systems.

This report provides an **overview of existing sustainable public procurement** (SPP) criteria, tools, and guidelines related to environmental, social (including health and nutrition), and economic dimensions of food, food services, and vending machines in the EU.

The study adopts a comprehensive approach by considering the entire life cycle of food products and services. It gathers information through desk research, market analysis, and interviews to thoroughly understand the current state of sustainable public procurement. The goal is to develop a framework for analysis that will highlight the most critical areas for improvement, or hotspots.

The findings of the analysis are instrumental in setting comprehensive, integrative criteria for public procurement, which can contribute to fostering a sustainable food system in the EU, addressing interlinkages among supply chains, consumption patterns, ecosystems, and population health.

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1 Introduction

The **EU food system** provides food to about 450 M people and contributes to its economy and employment. At the same time, it is facing a series of converging crises in the areas of health, environment, the society and the economy including a changing climate, nature degradation, changes in demand and diets, increasing inequalities, shortage of skilled labour, and increasing population. A precondition for long-term food security is an EU food system that is sustainable and that does not compromise food systems and food security elsewhere.

Food procurement is highlighted as a promising policy for shaping food systems towards increasing sustainable consumption and population health, as well as food production. **Public procurement** represents a substantial part of public investment, currently being estimated at 14% of the GDP (excluding defence and utilities). Specifically for the food and food services sector the percentage is lower, namely being around 6%. According to a recent study (Lermant et al., 2024) a yearly public expenditure of approximately 50 billion euros on food can be estimated with regards to food and food services. This figure compares with an overall EU apparent consumption of food (Eurostat data) of around 800 billion euros.

Nonetheless, public procurement for food and catering services could be an influential market-based policy instrument. Public procurement could be used by public authorities to enable efficiency, growth and value for money, but also, importantly, to steer the transition towards sustainability across the environmental, social (including nutritional), and economic dimensions. Scientific literature also recognized the "transformative potential of public procurement in shaping food systems by improving the availability and affordability of nutritious and healthy food" (Swensson et al., 2021). The ability of public procurement to address specific co-benefits between environmental and human health is acknowledged by scientists, policy-makers and stakeholders (EPHA, 2019).

As part of the **European Green Deal** (European Commission, 2019), the European Commission adopted the **Farm to Fork Strategy** for a fair, healthy and environmentally-friendly food system" in May 2020 to address comprehensively the challenges of sustainable food systems (European Commission, 2020). In this respect, the Strategy also recognises **the positive role that public food procurement** can play in supporting a food systems transition. In the Farm to Fork Strategy, the Commission announced that, to improve the availability and price of sustainable food and to promote healthy and sustainable diets in institutional catering, it will determine the best way of setting criteria for sustainable food procurement. This will help cities, regions and public authorities to play their part by sourcing sustainable food for schools, hospitals and other public institutions and it will also boost sustainable farming systems, such as organic farming, as defined by EU regulation 2018/848 (European Commission, 2018).

Public procurement is a cornerstone of EU product policy, as outlined by the **EU Procurement Directives** and several voluntary policy instruments. These Communications and Directives are accompanied by technical guidance to aid public authorities in applying specific criteria. The Commission introduced **Green public procurement (GPP)** criteria for food, catering services and vending machines in 2019 (European Commission, 2019). These voluntary criteria cover mainly:

- the environmental aspects of food production and consumption,
- the promoting the purchase of organic food products,
- more environmentally responsible marine and aquaculture products,
- an increased offer of plant-based menus,

- more environmentally responsible vegetable fats,
- better food and beverage waste prevention,
- products produced following higher animal welfare standards.

Nutritional criteria, as such, are not included as part of the GPP. The **Commission Notice on Buying Social** has facilitated socially responsible public procurement by providing a guide for including social aspects in public procurement (European Commission, 2021a). This notice helps to engage public authorities in socially responsible public procurement by buying ethical products and services, and by using public tenders to create job opportunities, decent work, social and professional inclusion and better working conditions for disabled and disadvantaged people. This notice is however transversal to all sectors and does include indications for tackling the social hotspots of the food system.

As recognised by the Farm to Fork Strategy, the food system is characterized by strong interrelations between supply chains, consumption patterns, ecosystems, population health, and planetary boundaries. A transition to a sustainable food system requires a **shift in perspective** and a recognition of the interlinkages among the different elements. To enable the positive role that public procurement can play, there is a need to develop useful and efficient criteria that tenderers should use to introduce **sustainability into their procurement of food, catering services and vending machines**. This concerns the **environmental, social (including health) and economic** dimensions of sustainability. These criteria can then serve as a basis for sustainable food procurement in schools and other public institutions.

An integrative and comprehensive approach is needed for analysing the state of the art in **sustainable public procurement (SPP)**. Starting from a commissioned external study (Lermant et al., 2024) **existing criteria** were collected related to sustainable public procurement, tools, guidelines and good practices established by international organisations, the European Union, Member States (MSs) and regional or local authorities relating to the environmental, social (including health) and economic dimensions of procurement of food, catering services and vending machines. Desk research has been complemented by market analysis and the output of surveys and targeted interviews. Throughout the work, a system perspective has been adopted, based on an interdisciplinary approach.

The **present report aims at analysing systematically existing procurement criteria,** based on the collection of provisions implemented across Europe. The objective is to determine the extent to which the existing criteria cover the different dimensions of sustainability, as well as the key area of intervention (or hotspots) that can steer the transition towards sustainability within the supply chain. This implies developing an assessment framework for the systematic analysis, which is currently not available in the literature.

The present report is structured as follows. After a short overview of public procurement general concepts (Chapter 2), the key areas for action to steer the transition to sustainability are identified (Chapter 3). The methodology for the analysis of existing criteria is defined in Chapter 4. This methodology includes the definition of a novel sustainability 'assessment framework', mapping the existing public procurement criteria to the identified food system hotspots. On this basis, the identified sustainability criteria are analysed according to the main sustainability dimension covered, i.e. environmental, social (including nutrition), and economic (Chapter 5). Relevant cross cutting elements are presented in Chapter 6, while Chapter 7 concludes, summarising the main findings from the report.

2 Public procurement: general concepts

Every year, over 250 000 public authorities in the EU spend around 14% of GDP (around €2 trillion per year) on the purchase of goods, services and works[1]. The sheer **volume** and market power of these public purchases can shape production and consumption trends, stimulate innovation and create or enlarge market sectors. In fact, public procurement has the potential to create demand for specific products with given characteristics. This power could be effectively harnessed to help induce a significant transformation in the European market to steer the **transition towards sustainability**.

More specifically, for the case of the food and drinks sector, the size of the European market can be estimated around 800 billion Euro per year (Lermant et al., 2024), with 56% of this value concentrated in 3 food groups alone, meat, dairy and beverages (including alcoholic beverages but excluding tea and coffee), which are responsible for substantial environmental (see section 1) and health impacts (Willet et al., 2019).

An analysis of the calls for tenders on the Tenders Electronic Daily (TED) platform reveals that in 2022 European Public Authorities placed on the market through TED contracts for food and drinks worth 17 billion Euro. The true value of the total amount of food and beverages purchases by European Public Authorities can be estimated as roughly 3 times that amount (Lermant et al., 2024), so we are talking about around 50 billion Euro per year. Compared with an overall market of 800 billion, this represents around 6% of the total market which, although not dominating, is still enough to have an influence in the overall market.

An additional remark is that only a small proportion of the Public Procurement tenders (less than 25%) include criteria of an environmental nature (mainly organic or other kind of environmental label) (Lermant et al., 2024), which hints that there is ample space for improvement here. Regarding other sustainability dimensions, the same study found out that a high number of public procurement procedures include criteria covering some aspects of nutrition and animal welfare (around 90%). However, a systematic, robust and comprehensive estimate could not be carried out. Accordingly, the number of public procurement procedures that include some reference to international social sustainability certifications like, e.g., Fair Trade, hoovers around 40%. Therefore, also in these additional aspects of sustainability there seems to be ample space for improvement.

Diving now on the specificities of the mechanism, positive **sustainable public procurement** impacts are expected to be the following:

1. The creation or development of new markets, by purchasing specific products,
2. Innovation stimulation and creation of new technologies or processes,
3. Shaping production and consumption trends.

The extent to which these **positive effects** materialise depends critically on the volume of demanded new sustainable products and solutions. In the case of **voluntary programs**, this will be mostly dependent on the uptake of SPP. In turn, the uptake will depend on awareness, knowledge and burden for Public Authorities'. Increasing sustainability requirements might lead to higher

[1] https://single-market-economy.ec.europa.eu/single-market/public-procurement_en

administrative requirements, including an increase in human resources (HR) cost related to verification and legal challenges or challenges related to market availability and higher prices.

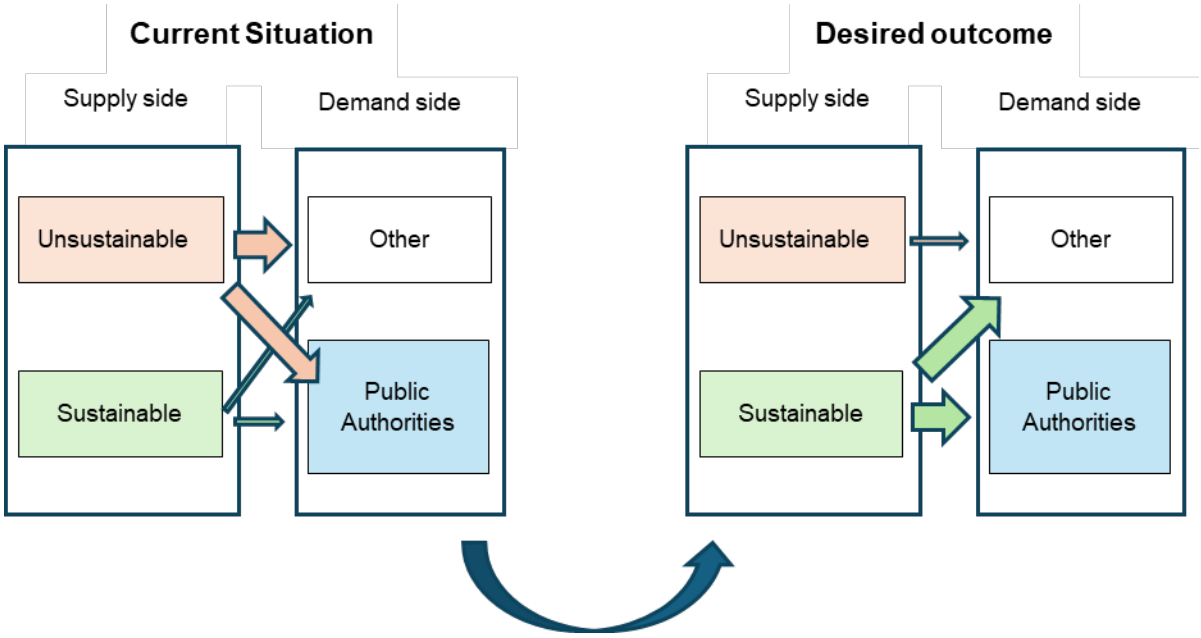
In the case of **mandatory measures**, the overall volume of demanded sustainable solutions will depend on whether the requirements are set in terms of mandatory Selection Criteria, Technical Specifications and Contract Performance Clauses (all of which would entail exclusion of non-complying tenders), or Award Criteria (which would imply no exclusion, only a competitive disadvantage– see definitions ahead for further explanation on this). In either situation, the volume of demanded sustainable solutions can reasonably be expected to be much larger than that in the voluntary case.

The expected **causal pathway** of implementing sustainable public procurement policy of food can be outlined as follows. By outlining sustainable procurement criteria, public authorities can require tenderers to provide food that is produced sustainably or ensuring that menus are planned in a way that supports the shift to a healthy and sustainable diets. Criteria can cover a variety of sustainability issues for the food sector, as outlined in the following sections of this report.

Following the implementation of the criteria for sustainable public procurement, public authorities can have a more robust framework on how and which sustainability requirements to introduce in contracts to procure, and thus offer to their users, more sustainable food. This would, in turn, allow consumers to consume healthier diets from sustainable sources, and the food business operators to increase the sustainability of their products and operations. Consequently, this would lead to increased sustainability of food products and operations, more social equality of the workers of service providers, as well as increased transparency and opportunities for education on sustainable food systems. With a focus on nutrition and diets, sustainable public procurement is expected to promote plant-based products with associated social and environmental benefits.

On top of the effect of shaping the market and creating demand, a **multiplication effect** is also expected (Figure 1). Sustainable public procurement creates demand for products and services that are more sustainable than the market standard. This new demand will be met by suppliers by creating and placing on the market alternatives that are more sustainable than the norm. These alternatives, becoming available in the market, can be chosen by all consumers at large, not only public authorities. This increased demand will then additionally stimulate the supply of sustainable alternatives, thus creating a virtuous cycle. Another consequence of this effect is that sustainable products become more affordable due to competition effects; the price difference between standard products and sustainable products decreases gradually.

Figure 1. Public Procurement potential to influence the market.



Source: own elaboration.

Overall, SPP would contribute to establishing a favorable and transparent food environment, facilitating sustainable and healthy choices, as well as strengthening the resilience of the EU food system through the transition to sustainability.

At the moment, two main voluntary policy instruments are in place to harvest the market changing potential of public procurement, namely **EU Green Public Procurement (GPP)** and **Social Public Procurement (SPP)**.

The **EU GPP** scheme focus on **environmental aspects** of public procurement only and is probably the most well-developed procurement voluntary scheme that is currently in place. Criteria have been developed for numerous product groups, including Food and Catering. A training toolkit, tutorials and best practice case studies are available for several different product groups. National action plans have been found for 23 EU MSs.

Green Public procurement is defined (from COM(2008)400) as: "...a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured..."

The potential **benefits** of the EU GPP scheme (as stated in COM(2008)400) are:

- to shape production and consumption trends
- to create or enlarge markets for environmentally friendly products and services
- to provide incentives for companies to develop environmental technologies
- to benefit the environment as well as the overall economy, creating opportunities for emerging "green" economies
- to stimulate innovation in eco-technologies

— to affect the whole supply chain.

The **objectives** of the EU GPP scheme are:

— to reduce the environmental impact caused by public sector consumption

— to stimulate innovation in environmental technologies, products and services.

Concerning **social public procurement**, in 2021 the Commission published a "Buying Social" guide on including social considerations in public procurement (European Commission, 2021a). Social procurement is therefore a more recent feature of this policy, and it does not currently have the same framework as EU GPP. The “Buying Social” provides guidelines and best practices to how public authorities can include social clauses in their contracts, or through reserved contracts or small lots for specific services from social enterprises.

The potential **benefits** of social procurement are:

– to achieve positive social outcomes in public procurement contract,

– to promote employment opportunities (such as up and reskilling of the workforce), decent work, social inclusion, gender equality and non-discrimination, accessibility, design for all, ethical trade, and seek to achieve wider compliance with social standards.

The **EU Green Public Procurement** and **Social public Procurement** existing voluntary schemes are taken as the starting points for the present analysis.

2.1 Regulatory basis

The main legal instruments that govern public procurement in the EU are the **public procurement directives**: Directive 2014/24/EU and Directive 2014/25/EU.

These directives establish the **public procurement principles**, namely (recitals, art.18 and others):

— Free movement of goods and services, freedom of establishment

— Non-discrimination and equal treatment (it follows directly from the need to ensure free movement of goods and services)

— Transparency

— Proportionality

— Mutual recognition

The directives also establish the link to the **Subject Matter of the Contract principle**. The link to the subject matter (LtSM) requirement is a core consideration for Public Procurement. According to Directive 2014/24/EU most public procurement criteria (Technical Specifications, Award Criteria and Contract Performance Clauses) must be linked to the subject-matter of the contract (recitals, art.42, art.67, art.70 and others). In Directive 2014/24/EU this is expressed as meaning that criteria can relate to any stage of the life-cycle, including those which are not obvious in the final product/service (e.g., production of food from organic agriculture or electricity from renewable sources), but not to general corporate policy (recital (97), Article 42, Article 67, Annex VII).

Verification issues are also covered in the Directives:

— Every criterion used in a public procurement process must be objectively quantifiable and verifiable. This does not mean that it will necessarily be verified, but only that it needs to be verifiable, *i.e.* the Contracting Authority does not have the obligation to verify the compliance of the procured products but must have the possibility to do so if desired. This is intended to be a way to implement the principles of equal treatment and transparency.

— Also, the Contracting Authority must accept any form of 'appropriate' proof of compliance with the requirements set. That is, the Contracting Authority must determine, on a case-by-case basis, from a technical perspective, whether the proof supplied by the bidder can be considered appropriate. This is another reason why references to specific standards, labels or certifications, when used for verification purposes, must be accompanied by the specific words "*or equivalent*".

The Directives also cover **the use of labels**. Labels are a possible method of operators demonstrating their compliance/performance against PP criteria. They are much appreciated by procurers given the *simplification of the verification procedure* that they entail. It is possible under Art. 43 of Directive 2014/24/EU to 'require' a specific label, provided:

— the label requirements only concern criteria which are linked to the subject-matter of the contract;

— the label requirements comply with the procurement principles;

— If a label also sets out requirements not linked to the subject-matter of the contract, contracting authorities shall not require the label as such but may define the technical specification by reference to those of the detailed specifications of that label that are linked to the subject-matter of the contract. The label can then be used as a mean of verification but other means of verification, like test reports or technical dossiers, would have to be accepted as well.

— There is an obligation to accept labels which have equivalent requirements and, if the operator has been unable to obtain the label within the relevant time limits due to factors which are not attributable to it, to accept other (non third-party) evidence, like test reports or technical dossiers.

On top of the procurement directives, **EU Public Procurement is also covered in other legal instruments**, namely the Government Procurement Agreement (GPA), which is a plurilateral agreement within the framework of the World Trade Organization (WTO). This a binding international treaty that precludes the use of protectionist practices in public procurement procedures of the signatories, establishing rules requiring that open, transparent and non-discriminatory conditions of competition are ensured in government procurement.

2.2 Key definitions

For Public Procurement, different types of criteria exist (Figure 2).

Selection Criteria (SC) determine which operators are eligible to have a contract awarded to them. They refer to the tenderer, *i.e.*, the company tendering for the contract, and not to the product being procured. These may relate to:

— Suitability to pursue the professional activity;

— Economic and financial standing;

— Technical and professional ability;

- Supply chain management and tracking systems;

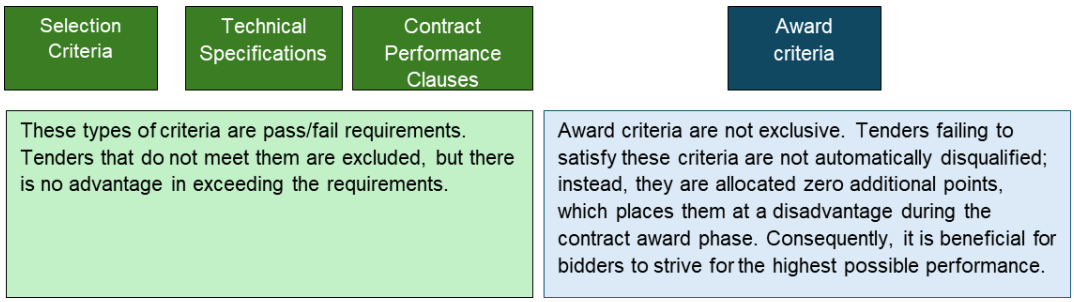
- Environmental management systems (*e.g.*, EMAS, ISO 14001), mainly for services or works contracts;
- Experience and educational and professional qualifications of staff, mainly for services or works contracts.

Technical Specifications (TS) are mandatory minimum requirements that must be met by all tenders. Offers not complying with the technical specifications must be rejected. Technical specifications are not scored for award purposes; they are strictly pass/fail requirements.

Based on **Award Criteria (AC)**, at the award stage, the contracting authority evaluates the quality of the tenders and compares costs. Everything that is evaluated and scored for award purposes is an award criterion. Award criteria can be used to stimulate additional sustainability performance without being mandatory and, therefore, without foreclosing the market for products not reaching the proposed level of performance.

Contract Performance Clauses (CPC) are used to specify how a contract must be carried out. The economic operator may not be requested to prove compliance with the contract performance clauses during the procurement procedure. Contract performance clauses are not scored for award purposes. Compliance with contract performance clauses should be monitored during the execution of the contract, therefore after it has been awarded. It may be linked to penalties or bonuses under the contract in order to ensure compliance. According to Art. 70 of Directive 2014/24/EU, contract clauses "may include economic, innovation-related, environmental, social or employment-related considerations." For example - in a food catering contract clause might require the service provider to reduce food waste against benchmarks set at the start of the contract, in addition to using more sustainable products.

Figure 2. Types of criteria used in Public Procurement.



Source: own elaboration.

Furthermore, the directives establish the possibility to use the concept of **Most Economically Advantageous Tender (MEAT)** in order to award the contract. Contracts can be awarded on the basis of MEAT, which includes a cost element and a wide range of other factors that may influence the value of a tender from the point of view of the contracting authority, including sustainability aspects.

3 Key areas for action: Sustainability hotspots of the EU food system

A system perspective is key to foster sustainability transitions[2]. There is increasing scientific evidence of the environmental and social impacts linked to food production and consumption (Willet et al., 2019). Public procurement provisions can address areas of concern in the food system, or 'hotspots', to foster sustainability (see Box 1).

Box 1. Hotspot definition.

> The term hotspots in this analysis refers to the areas of concern/ of interest in the food system which would require action in order to ensure sustainability from an environmental, social, nutritional and economic perspective, and that can be addressed by public procurement provisions.

Environmental impacts of the entire supply chain of food products (including beverages) consumed in the EU (i.e., considering from the extraction of raw materials to the management at the end of life, including trade) **have increased around 20% since 2010** (Sala et al., 2023; Sala & Sanyé-Mengual, 2023). This is partly explained by population growth (around 1%) and is mainly due to an increase in consumption per capita of food products. Livestock products (meat and dairy) dominate the environmental footprint of EU food consumption, representing around 66% of the overall impacts. Global food systems account for a third of total GHG emissions (Crippa et al., 2021). Food waste generation in Europe is a considerable challenge, with an estimated 58 million tonnes of food being wasted each year.

In the context of public procurement, the focus is primarily on food waste within food services and consumption levels, although there is no distinction between waste generated in public or private settings (Eurostat, 2023a). Food waste also embodies significant environmental, economic and social impacts. Recent estimates link the phenomenon of food waste in Europe to 16% of total GHG emissions (Sala et al., 2023).

The **social impacts** embedded in food production and global supply chains need to be analysed to ensure a truly sustainable transition of food systems. Social impacts of food production relate to labour related issues, such as workers' rights, health and safety, salary, absence of forced or child labour. Other social issues include indigenous peoples' rights, literacy level of the population, corruption and health expenditure in the specific origin country of the commodity under analysis. In a recent macro-scale assessment of social risk associated with the EU food consumption, Mancini et al. (2023) show how possible trade-offs can emerge between sustainability dimensions, as the hotspots for social impacts lie with rice production and other plant-based products, especially those grown extra-EU countries such as tropical fruit.

Population health is an essential component of sustainability, as it directly impacts the well-being of individuals and communities. The consequences of **unhealthy diets** in the EU are far-reaching impacting individuals, healthcare systems, and economies. These impacts include increased prevalence of non-communicable diseases (NCDs), higher strain on healthcare systems and

[2] For a recent analysis of existing sustainability efforts and policies in the food systems in the EU and worldwide, see Barbero Vignola et al., (2024).

expenditure, more social disparities, and detrimental environmental impact. Consequently, integrating health considerations into public procurement processes is vital for fostering a more sustainable future. Unhealthy dietary patterns, compounded by income inequality, are major contributors to non-communicable diseases (NCDs) such as obesity, cardiovascular diseases, diabetes, and certain types of cancers (FAO, 2023; Willett et al., 2019). Obesity in particular, is a major contributor to mortality and disability in Europe and costs the EU 70 billion EUR annually (European Commission, 2023b). In 2023, 54% of EU adults had overweight or obesity, with 18% suffering from obesity, while approximately one in three primary school-aged children in Europe has overweight or obesity (WHO, 2022). Moreover, food poverty is on the rise in Europe, with 8.3% of the EU population unable to afford a meal with meat, fish, or a vegetarian equivalent every second day in 2022 (Eurostat, 2023b).

The integration of dietary guidelines in public procurement processes is a powerful policy tool to improve population health by aligning diets with dietary recommendations and promoting healthier food choices (WHO, 2021). Limiting the intake of unhealthy, high-calorie, energy-dense foods in these settings can help decrease obesity rates and reduce the prevalence of non-communicable diseases related to diet and obesity, such as cardiovascular diseases, hypertension, and diabetes. Similarly, action is needed on the consumption of salt, saturated fats, and free sugars, which could have a positive impact on the rates of these diseases (WHO, 2021).

Prioritising healthy foods and limiting the availability of unhealthy options in public institutions can contribute to a healthier food environment and raise awareness about the importance of healthy eating (WHO, 2021). This increased awareness can positively influence dietary habits outside the canteen, leading to long-term healthier dietary patterns in the population. Additionally, the higher demand for healthy foods in public institutions can encourage a healthier food system overall, benefiting both public and private sectors. In this sense, public procurement of food can contribute to reducing health and nutrition inequalities (WHO, 2021). School environments in particular constitute a small-scale food system, where consumer choices, food preparation and serving and education intertwine. Within schools, adequate public procurement practices coupled with food literacy actions can shape the long term dietary habits of future generations (Derqui et al., 2018; Hargreaves et al., 2022).

Public procurement policy interventions have the potential to influence consumer choices and foster sustainable consumption (Tregear et al., 2022; Cerutti et al., 2018). Finally, the environmental footprint of public meals is contingent upon factors such as the type of food (animal or plant-based), the efficiency of food production, meal preparation methods, and the energy efficiency of kitchen appliances (Cerutti et al., 2018; Mistretta et al., 2019). In summary, integrating nutritional criteria in public procurement across the EU is a powerful strategy to influence the food environment and encourage healthier eating habits among the population. Along with its crucial role in supporting environmental sustainability and promoting economic growth in the healthy food sector, it also has the potential to lead to significant public health benefits, reduce health inequalities, and improve overall public health issues, resulting in economic savings and an enhanced quality of life across the EU for everyone.

3.1 Integrating all sustainability dimensions for a true transition to sustainability

In the last decade, the European Commission has primarily focused on **green public procurement (GPP).** In relation to the food system, GPP criteria have been defined for "food, catering services and vending machines" (Boyano et al., 2019).

In the context of the European Green Deal, the European Commission has published the Farm to Fork Strategy setting priority actions promoting the **transition towards a sustainable food system by integrating all sustainability dimensions**. To address these concerns, the European Commission has emphasized the importance of transitioning towards more plant-based diets and reducing the consumption of animal-derived products. For example, both the EU Farm to Fork Strategy and Europe's Beating Cancer Plan highlight the need of promoting healthier and more sustainable diets. However, current food consumption patterns in the EU are far from meeting dietary recommendations (Eurostat, 2022).

Sustainable public procurement (SPP) is a process by which public authorities seek to achieve the appropriate balance between the three pillars of sustainable development - economic, social and environmental - when procuring goods, services or works at all stages of the project. **Nutrition** is an important component of the social pillar of sustainability, as it directly impacts population health. By integrating all three dimensions of sustainable development in food procurement, public authorities can try to better understand and balance the trade-offs inherent to food system transformation (UNEP, 2021). Smith et al. (2016) assert that consistent definitions for green and sustainable public sector food procurement (GPP and SPP) should be refined to support governments at all levels in improving sustainability and public health nutrition.

Scientific literature has pointed to the "transformative potential of public procurement in shaping food systems by improving the availability and affordability of nutritious and healthy food" (Swensson et al., 2021). Studies (European Environment Agency, 2023) and stakeholders (EPHA, 2019, ICLEI, 2022) alike have recognized the **ability of public procurement in addressing co-benefits between environmental and human health.** From a policy making perspective, it is evident how a conceptual shift from green (environmental only) food procurement to sustainable public procurement is necessary to deliver the "transformative potential" of this policy (Swensson et al., 2021). Lastly, it is important to embed public food procurement in the wider food system policy mix (European Environment Agency, 2023), understanding what its role is together with other policy actions (Lindström et al., 2022; Schebesta, 2018).

To support a systemic vision of food production and consumption, **Life Cycle Thinking (LCT) and Life Cycle Assessment (LCA)** have recently emerged in support to policy implementation at various levels (Sala et al., 2021b). LCT and LCA analyse production systems in their entire life cycle and are therefore well suited to capture interdependencies and connections. The goal of such comprehensive approach is to **optimize resource efficiency and reduce environmental and social impacts.** LCT and LCA can support in accounting for trade-offs (both across environmental impacts, and sustainability dimensions) and prioritizing actions, by providing support across the policy cycle, from policy implementation to policy evaluation. In particular, they can support the implementation of SPP at different levels, for example by setting and prioritizing actions, helping procurers and PAs to make routine purchasing decisions more sustainably, up to finally evaluating the impacts of a policy (European Commission, 2021c).

The focus on environmental aspects related to food, without considering social or nutritional ones, can undermine the application of a **system approach** able to capture trade-offs of criteria implementation (Sanyé Mengual et al., 2024) and fully addressing sustainability. Finally, criteria application remains voluntary from MSs, leading to an uneven application in public contracts (Rosell, 2021; Grandia & Kruyen, 2020). There is a notable absence of a comprehensive sustainability framework encompassing environmental, social, and economic aspects in relation to public procurement. Present provisions are often inadequate or non-binding, relying on the voluntary commitment of stakeholders.

4 Methodology for collection and analysis of the criteria

4.1 Definition of the assessment framework

The JRC developed a **comprehensive assessment framework** to analyse the existing provisions concerning public procurement of food in Europe with regard to sustainability.

This framework is used to map the existing criteria to the different **sustainability dimensions** they cover, and namely **environmental, social (including nutrition) and economic**.

The framework is based on literature sources and covers **relevant aspects for food system sustainability**. It covers general and legal aspects and all sustainability dimensions including environmental, socio-economic, nutritional and animal welfare. Life Cycle Thinking and Life Cycle Assessment constitute the backbone of the framework for the environmental and social part.

The framework, available in Annex 1, starts from addressing General and Legal aspects of the criteria.

- **General aspects** are meant to understand whether the criteria are new or adapted from existing EU GPP criteria (Boyano et al., 2019) and what type of good or service they are applicable to (food, food services, vending machines). These also cover the administrative level at which the criteria are implemented (municipal, regional, national) and the geographical reference (country, city). This part also tries to systematize the general objective of the criteria and whether specific definitions are associated with their implementation.
- The **legal context** of the criteria includes whether the criteria are mandatory or voluntary, at what stage of the tender process they are applied and what the verification procedure is. This section also indicates any monitoring and evaluation systems put in place to ascertain the effectiveness of criteria.

The framework is articulated further to elaborate in detail on the **coverage of sustainability dimensions.** These are presented in table 1.

4.1.1 Main elements of the framework

The main objective of the framework is to **systematize aspects of interest of the food system** that public procurement should address within the environmental, social and economic dimensions. **The coverage of sustainability dimensions** is articulated as follows

- environmental,
- social: including nutritional, animal welfare, and other social aspects,
- economic.

An overview is presented in Table 1. The full details are reported in Annex 1.

Table 1. Elements of the framework by sustainability dimensions

Environmental	Social	Economic
Based on Life Cycle Assessment impact categories Climate Change, Acidification, Ecotoxicity, Photochemical Ozone Formation, Ozone depletion, Eutrophication, Resource Use, Water Use, Land Use. *Others* Biodiversity, Waste generation, Circularity, Deforestation, Soil health, Biotic resource depletion, Overfishing, Energy use, Plastic pollution, and Microplastics.	*Nutritional* Nutrients: Salt, fat, free sugars, potassium, dietary fibre. Food groups: Whole grains, fruits and vegetables, legumes, nuts/seeds, red meat, processed meat, fish, dairy products, water, sweeteners, sugar-sweetened beverages, alcohol. Other: special diets. *Others* Fundamental rights (ILO conventions) compliance, Consumer health and safety, transparency, stakeholder involvement. Animal welfare.	Fair income for producers, impacts on third countries, territorial economic impacts.

Source: own elaboration.

The **environmental hotspots** of the food systems are based on LCA approach, including the various stages of the supply chain and environmental impacts, by identifying the relevant impact categories in alignment with the EU recommended Environmental Footprint (EF) methods (European Commission, 2021b). These impact categories are: Climate Change, Acidification, Ecotoxicity, Photochemical Ozone Formation, Ozone depletion, Eutrophication, Resource Use, Water Use, Land Use (see Table 1).

In addition, to ensure a comprehensive approach, additional environmental impacts to those currently covered by EF (and non-LCA) were also included in the framework, and compiled from various sources (see Table 1, 'Others'). These non-LCA environmental hotspots include overfishing and depletion of biotic resources (Sala et al., 2021a), plastic pollution and microplastics (Lehel & Murphy, 2021), biodiversity (Crenna et al., 2019), among others. Soil health is also indicated as a specific potential hotspot, even though it should be noted that it is also in part covered by the Land Use impact category within the EF. Energy use and waste production are singled out based on the Better Regulation Toolbox (European Commission, 2021c), though it should be noted that they are in part also accounted for in LCA.

The **social hotspots** cover health and nutritional aspects, aspects related to the organization and dynamics of the food supply chain, labour conditions, and animal welfare.

For the **nutritional dimension**, the framework assessment includes the primary nutritional and dietary factors related to population health in the EU. Briefly, most European populations exhibit higher consumption of saturated fatty acids (SFA), salt, and free sugars, while dietary fibre and potassium intakes fall below current dietary recommendations. When comparing food group intakes to Food Based Dietary Guidelines (FBDGs) in the EU, consumption of fruit, vegetables, legumes, whole grains, nuts, and seeds, as well as dairy products and fish, is lower, and red and processed meat, sugar-sweetened beverages, and alcohol intake is higher than recommended. Therefore, the criteria implemented by MSs for these nutrients and food groups in public catering services were

evaluated, alongside examining whether they specifically reference national FBDGs and whether plant-based options (due to the significance of plant-based diets in both human and population health) are available. The JRC nutrition experts selected 18 criteria, outlined within the dedicated section of Table 1, to streamline data extraction and analysis and considering the scientific evidence on the significance of nutrients and food groups in population health.

Further **social hotspots** of the food system consider a variety of issues and were compiled from different sources[3]. The aspects included in this part of the framework address compliance with fundamental rights such as human rights and gender equity, aspects related to the consumer (e.g., health and safety), the community (e.g. cultural heritage) and the supply chain (e.g., ethical trade). The relevance of such aspects was compared with the information contained in the "Buying social" guide of the European Commission (2021a). Compliance with International Labour Organization (ILO) conventions is also included. It is worth noting that this can be considered at two levels of analysis for the social part, one in respect to the work done by farmers/other workers in food production and supply and the other concerning the actual food service workers.

For **animal welfare**, the framework considers the type of animals included in the criteria and the animal husbandry system considered. Harmonized EU level rules for animal welfare exist for calves, cattle, laying hens, broilers, pigs, and other animals. The EU definition of animal welfare is based on an international one, which establishes five basic freedoms for animals to have a good life (1. Hunger, malnutrition, thirst; 2. Fear and distress, 3. Heat stress and physical discomfort, 4. Pain, injury and disease, 5. To express normal patterns of behaviour)[4]. Additionally, the framework pinpoints the stage in which the criteria could have an impact, namely at farm level, during transport, and during slaughtering and stunning. All these phases are currently regulated by EU legislation.

The **economic dimension** of the framework includes aspects covering distribution of value added along the supply chain, fair price, cost of production, innovation, competition and market dialogue. These are based on the Buying social guide of the European Commission (2021a) and on De Oliveira & De Souza (2023). Further elements were also taken from the Better Regulation toolbox (European Commission, 2021c), such as impacts on third countries, SMEs, and territorial impacts.

4.1.1.1 Life Cycle Thinking

The analysis presented in this report covers public procurement of food, food services, prepared meals, and vending machines. The broad scope applied in this report entails that **many life cycle stages** are potentially affected by the introduction of criteria. These can concern:

— the direct procurement of food,

[3] These include the results of a systematic literature review on sustainable public food procurement (Casonato et al., forthcoming publication), De Oliveira & de Souza (2023) who in particular provide a useful review of relevant impact categories for public procurement). To tailor the framework to the food supply chain, additional web searches were conducted to retrieve social sustainability assessments for food products. Desiderio et al. (2022) and Mancini et al. (2023) turned out to be relevant useful sources, although the indicated social hotspots overlap. The overall goal is to ensure that the selected criteria in the proposal cover the social impacts of the EU food system. For this, the list of social impacts included in the Better Regulation toolbox was also considered (European Commission, 2021c).

[4] https://www.woah.org/en/what-we-do/animal-health-and-welfare/animal-welfare/

— the procurement of food services (i.e. procurement of food, utensils, labour, meal preparation and service, waste management),

— the procurement of prepared meals,

— vending machines.

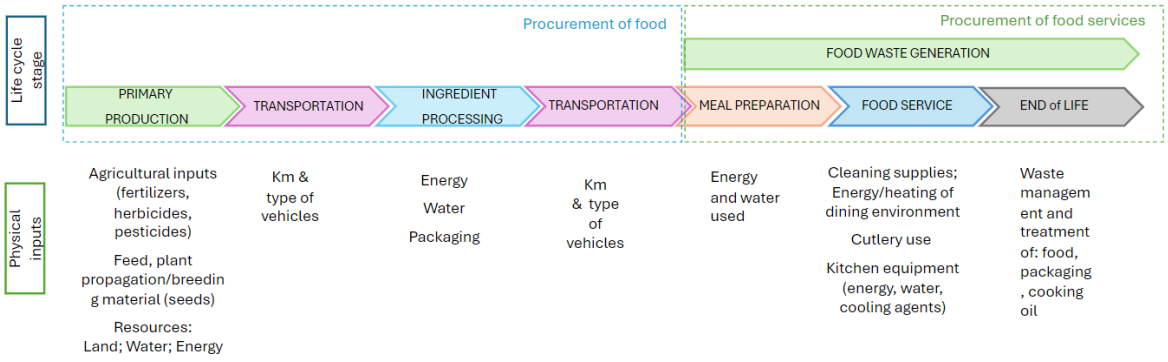
Few of the criteria analysed also concerned the procurement of water and water dispensers.

Criteria thus can refer to food, food services (including kitchen equipment), prepared meals, vending machines and water dispensers, therefore covering diverse supply chain organizations and life cycle stages. In turn, food services can also take many forms, from centralized kitchens which work on a semi-industrial scale or single kitchens in different sites.

From a Life Cycle Thinking perspective, the food and food service procurement criteria affect multiple life cycles, from primary production (including feed production) to the waste management stage, as shown in Figure 3. Criteria for vending machines concern usually the type of food which is sold in the vending machines, the energy efficiency of the machine itself or sustainability of packaging and cups used.

For the purpose of this report's analysis, **the procurement of food** includes the impacts associated with primary production, transportation, ingredients processing (when relevant). **Food services** include meal preparation, the operation of the food service (requiring energy, cleaning, water use) and waste treatment. Food waste occurs along the supply chain, but procurement criteria tackle only preparation and at times consumer waste.

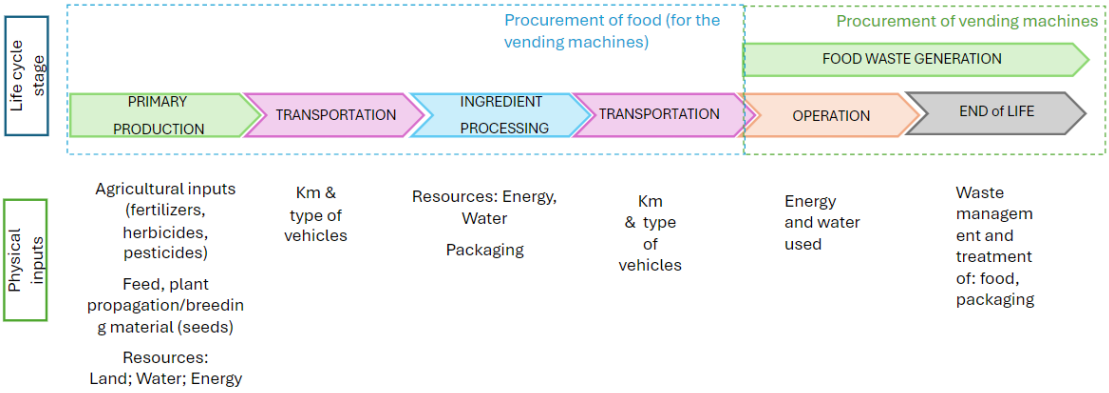
Figure 3. Life cycle stages of food and food service procurement.



Source: own elaboration.

The procurement criteria for **the vending machines** are focused on the type of food they contain and in a few cases on the operation of the vending machines (Figure 4).

Figure 4. Life cycle stages included in the procurement of vending machines.



Source: own elaboration.

Water dispensers were included in the criteria analysis through a case study from Cyprus, specifically referring to their compliance with the Commission's Eco-Management and Audit Scheme (EMAS). Drinking water was also the object of a few criteria, which usually specified how access to free, quality drinking water was to be prioritized (AT, IE).

4.1.2 Limitations of the approach

First, it should be noted that the analysis of the coverage of sustainability dimensions is **aimed at addressing the direct links** between the existing procurement criteria and the listed sustainability aspects (which include hotspots). At the same time, indirect effects are included, but a systematic analysis of all the possible indirect causal relationships between criteria and hotspots is beyond the scope of our work. An example of this approach could be the introduction of a criterion on increased purchase of organic products, which has a potential direct effect on reducing pesticides use and the associated environmental impacts (e.g., toxicity, biodiversity). Other aspects resulting from indirect effects (e.g., potential indirect effect of organic farming on farmer's income) will be mentioned in the introductory considerations but are not considered when compiling the framework. The different sections of the framework have been filled in on a qualitative basis (yes/no) or with open text answers only for the direct effects. This approach has been taken to allow for a systematic and objective analysis of the link between criteria and sustainability elements.

Second, it can be argued that certain **social hotspots** (i.e. workers' rights within Europe, transparency and traceability) included in the assessment framework cannot be properly assessed through the lens of public procurement. Understanding which other policies are in place covering those hotspots could constitute a useful complementary exercise to this analysis. For example, aspects such as fairness of employment conditions, even though relevant for food supply chains, might not be verifiable from a public authority in charge of food purchases and not checked through the application of single criteria, but rather be regulated at a national or EU level.

4.2 Data sources and analyses

The **data collection** was largely based on the outcome of a contracted study (Lermant et al., 2024), which included desk research and a targeted stakeholder consultation. This data collection resulted in the compilation of a catalogue of existing criteria for sustainable food procurement

across EU MSs. The JRC complemented the findings of the study by additional ad hoc in-house research, to conduct the systematic assessment with the necessary level of detail. The JRC did not perform an in-house systematic search for existing criteria, and the geographical coverage of EU MS provisions for sustainable public procurement presented in this report is not meant as an exhaustive listing.

Each criterion was first **assigned a general theme** according to the subject matter to ease the analysis. In many cases, the criteria were formulated to cover multiple aspects of sustainability (i.e. those indicated in 4.1), and multiple themes were assigned. This step was useful to have a general idea of the topics covered by the criteria. The **framework then was filled in** with the required information. The hotspots analysis followed a purely qualitative and literature-based approach, meaning that a sustainability hotspot was considered as "covered", when there is scientific evidence that generally the subject matter of the criteria would have certain impacts. It is not meant to ascertain whether those impacts would be negative or positive and what would be the overall effect of food systems' sustainability.

5 Analysis of existing criteria related to sustainable public procurement

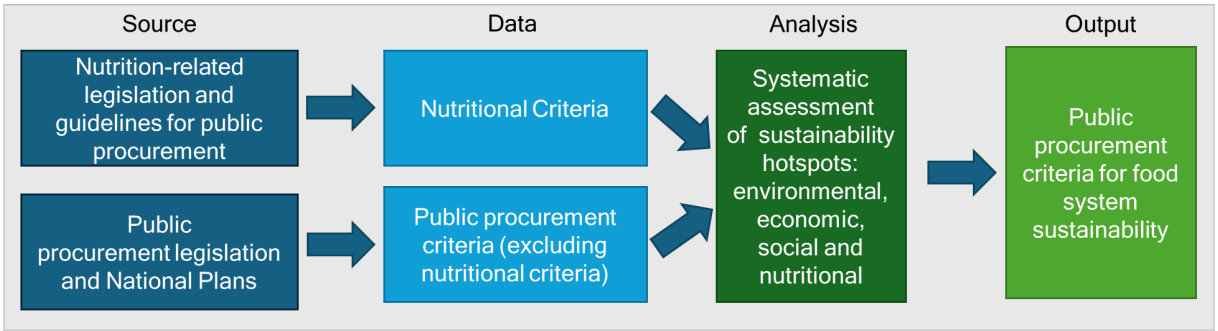
The analysis presented in this report aims to understand how public procurement policy in Europe can affect the sustainability hotspots (See Section 3). The evaluation framework introduced in Section 4 was instrumental in understanding how the analysed criteria cover food system sustainability dimensions.

Figure 5 illustrates the analytical process, which started from **two distinct sets of sources**:

1) **public procurement provisions (legislations and guidelines) stemming from GPP** provisions, which cover predominantly the environmental dimension of sustainability, without specifically addressing nutritional aspects which were outside their scope and;
2) **legislation or guidelines that relate to nutritional aspects of public food procurement.**

The criteria were then comprehensively assessed through the framework, highlighting how existing provisions are addressing sustainability hotspots. The criteria were then comprehensively assessed through the framework, highlighting how existing provisions are addressing sustainability hotspots.

Figure 5. Analysis of food public procurement sources.



Source: own elaboration.

The following sections will show a general overview of the data used for the analysis (Section 5.1) and the results of the assessment, divided by sustainability dimension (Section 5.2). To structure the presentation of the results, criteria have been allocated to one sustainability dimension; cross cutting elements are covered in Section 6.

The analysis is structured according to the **following key questions**:

- What is the current **focus** of criteria? (i.e., number of criteria, extent, by aspect being addressed?)
- How are the **hotspots** covered?
- What is the level of **granularity** of these criteria? (e.g., general vs specific thresholds)
- Do the provided indications have a **mandatory** or **voluntary** character?
- At which **geographical level** do they apply (e.g. national, regional, municipal)?

5.1 Public procurement in the EU Member States : an overview

This section provides a short overview of the overview of existing criteria in EU MSs, before exploring deeper in assessing how sustainability dimensions are covered. This first analysis shows which MSs were considered and the different sources of public procurement provisions. As anticipated in Figure 5, the sources for the analysis were different, and this allowed for a more comprehensive view of the initiatives tackling sustainable food procurement in Europe. Section 5.1.1 presents the overview of existing procurement criteria concerning environmental, and social dimensions (excluding nutrition) while Section 5.1.2 is focused on nutritional provisions in food public procurement.

5.1.1 Overview of existing procurement criteria concerning environmental, and social dimensions (excluding nutrition)

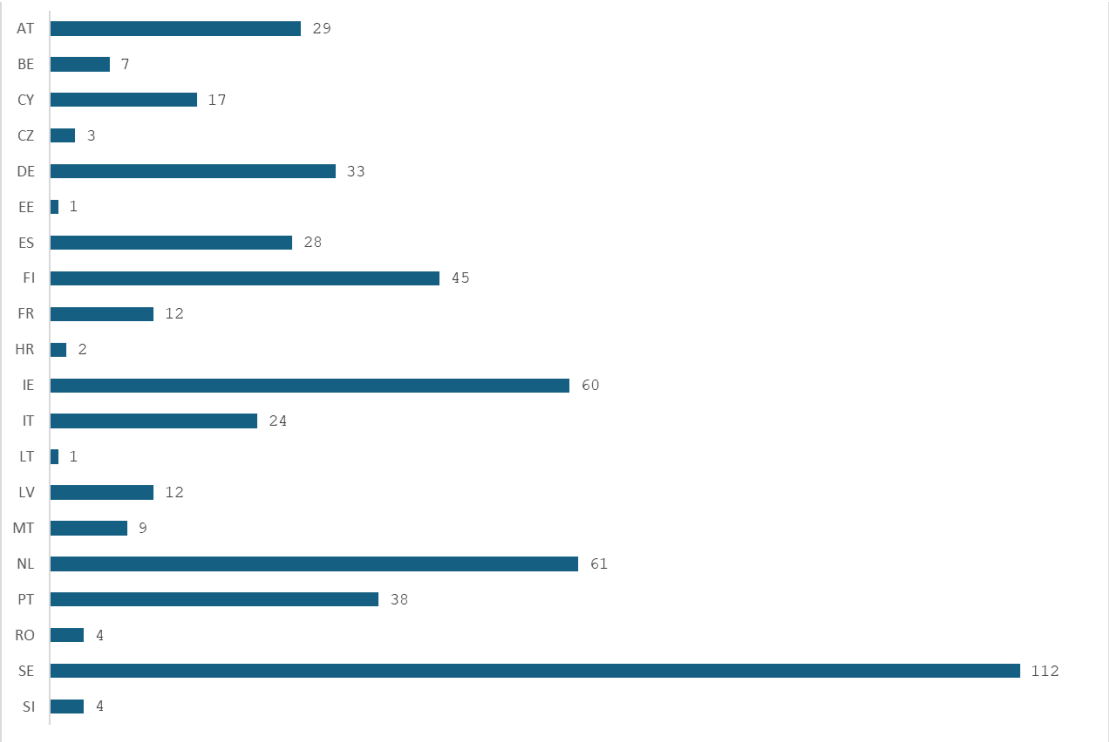
The analysis of the procurement provisions across MSs collected a total of about 500 different criteria stemming from GPP provisions. These criteria were specifically extracted from national legislation, with only punctual examples from subnational GPP implementation (such as, for example, regional level regulation in Belgium and a case study for Cyprus).

5.1.1.1 Geographical overview

Public procurement criteria could be extracted for 20 EU MSs. It should be noted that **the number of criteria per country is not necessarily correlated to actual implementation of sustainable/green procurement, nor to the related actual overall impact of this policy.**

When looking at their geographical distribution (Figure 6), it emerges how there are few MSs with a large number of criteria (SE, NL, IE, FI). This can also be connected to how the procurement criteria are proposed in these countries: i.e. through a web tool or platform that provides public administrations and procurers with numerous options to choose from, covering multiple sustainability aspects. The approach is thus providing a general indication in the legislation to apply sustainable/green procurement criteria in tenders, without specifying which criteria to choose. In these cases, the legislator invites public administrations to base their criteria choices on market dialogue and availability of supply.

Figure 6. Number and geographical distribution of environmental and social criteria (excluded nutritional).



Source: own elaboration.

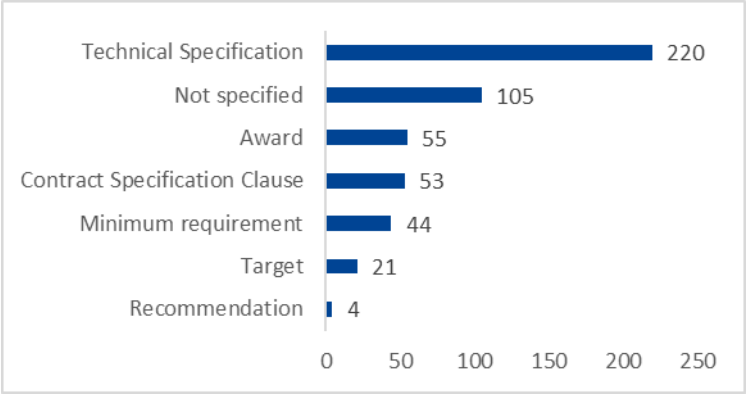
For seven MSs (EL, BG, LU, HU, SK, DK, PL) information is currently not reported[5].

5.1.1.2 Type of criteria

Most of the criteria analysed were technical specifications, followed by award criteria, contract clauses and selection criteria/minimum requirements. It is notable that some provisions included in the analysis are framed as targets or recommendations, usually referring to overarching policy objectives (such as food waste targets) or by recommending certain best practices or principles without a binding contractual value (e.g. "food should be as seasonal as possible"). In Figure 7, "not specified" refers to criteria which were not assigned to one of the categories due to time constraints, as it would have required a thorough analysis of the original legislation.

[5] From a stakeholder interview (European Commission, 2024), it was gathered that Poland does not have a specific policy for green/sustainable public procurement.

Figure 7. Type of criteria emerging from the analysis.



Source: own elaboration.

The criteria were found to be mostly qualitative (78%) while the quantitative criteria/targets incorporated thresholds to be reached. The thresholds are expressed in various ways, and in some cases (such as AT/FR) progressive increments are indicated, to be reached within a fixed timeline, often in accordance with broader policy targets, such as on food waste prevention or organic products. The thresholds can be expressed as percentage of mass, volume or economic value (see Box 2). The thresholds refer to the amount of food with certain characteristics that have to be procured according to the contract.

Box 2. Example of different effects of the inclusion of a quantitative threshold (extracted from Lermant et al., 2024).

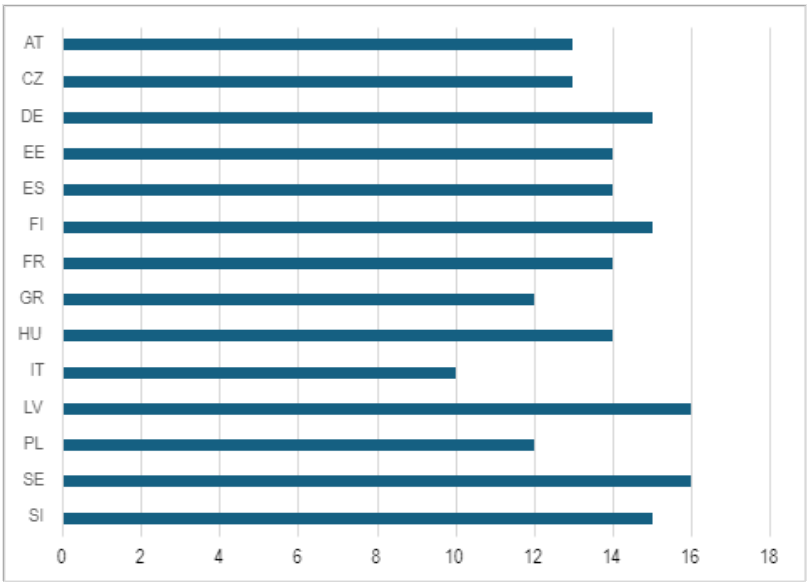
It should be noted that the choice of the type of threshold and the reference unit (based on monetary value or weight) can lead to different results.

This can be examplified by comparing different organic products purchased by a public authority, one with a lower price/kg with one with a higher price/kg. A monetary value based threshold tends to favour the substitution of more expensive products, like meat based ones. Depending on the reference unit adopted when setting the threshold, the final quantity of purchased products and related possible environmental impacts will change.

5.1.2 Overview of existing nutritional provisions in food public procurement

Based on Lermant et al. (2024), **14 EU countries** were identified with nutrition-related criteria for public food procurement. For all identified countries, these criteria apply at a national level. The number of JRC nutritional criteria addressed per country is shown in Figure 8. The countries with the most nutritional criteria are Latvia and Sweden.

Figure 8. Nutritional criteria coverage by MS.



Source: own elaboration.

Table 2 shows the number of countries with specific criteria for each setting, while Table 2 reports the age range and/or educational cycle: “School children" is the most common setting across many countries, while only one refers specifically to people in clinics and medical institutions.

Table 2. Countries with nutritional criteria by settings.

Setting	Number of Countries	Countries
All population*	3	AT, FR, HU
Education setting		
Kindergarten children	5	AT, EE, LV, IT, SI
School children	12	AT, CZ, DE, EE, ES, FI, GR, IT, LV, PL, SE, SI
Higher vocational and other education settings	1	CZ
Adults (companies)	1	DE
Older adults in care facilities	2	DE, FI
Clinics and medical institutions	1	DE, LV
Leisure time centres	1	SE

*Any public catering structure (e.g. educational, administration, health).

Source: own elaboration.

When examining the basis for nutritional criteria, eight countries have established nutritional criteria for public procurement through legislation. In four countries, nutritional criteria for public procurement exist in the form of guidelines, while one country has a pending legislative plan yet to be implemented. Another country has a combination of legislation and guidelines, depending on the setting (Table 3).

Table 3. Target setting and provision type by country.

Countries	Target setting/population	Provision type
AT	Kindergarten children (age range not mentioned) School children (school children and adolescents) All population (procurement of food and catering services; communal catering in commercial kitchens, e.g. administration, health, nursing and educational institutions as well as catering for regularly recurring events. Provision by external services)	Guidelines (kindergarten and school children): Recommendation of minimum requirements from Ministerial taskforce Legislation (All population): Austrian Action Plan for Sustainable Public Procurement, binding for federal public procurers
CZ	School children (age range not included): Preschool, Primary, Secondary, Higher vocational and other education settings Higher vocational and other education settings	Legislation: Decree No. 282/2016 Coll. Decree on requirements for food eligible for advertising and offered for sale and sold in schools and educational facilities
DE	School children (primary level 6 to under 10 years; secondary level 10 to under 19 years) Adults: Clinics, medical institutions (51 to 65 years), and companies (19 to 65 years) Older adults in care facilities (65 years and above)	Guidelines: Federal Ministry of Food and Agriculture issues Quality Standards upon commissioning the German Nutrition Society (DGE)
EE	Kindergarten children: from 1 to 7 years, don't apply to babies <12 months old School children: from 7 to 19 years	Legislation: No 12 of the Minister for Social Affairs of 17 April 2012 Amendment to Regulation No 8 of the Minister for Social Affairs of 15 January 2008 'Health protection requirements for catering in pre-school and school'
ES	School children: early childhood education (2nd cycle, 3-6 years), primary, special education, secondary education	Plan in preparation (Legislation): Draft Royal Decree establishing rules for the development of Articles 40 and 41 of Law 17/2011 on Food Safety and Nutrition & Program 16 of the national official control plan of the food chain 2021-2025
FI	School children (age range not provided) Older adults in care facilities	Guidelines, from the national nutritional council: Recommendations for school meals Food recommendations for older adults
FR	All population: Any public catering structure (e.g. professional, educational, prison, military, holiday or care)	Guidelines: Nutrition recommendation study group on mass catering and nutrition markets GEM-RCN Version 2.0 – JULY 2015
EL	School children: canteens of elementary, junior-high and high-schools (for school restaurants,	Legislation: Hygienic rules for school canteens, cafeterias and restaurants and determination of available products for public and private primary

Countries	Target setting/population	Provision type
	adherence to national FBDGs is mentioned, without further criteria)	and secondary education (Ministry of Health decree Υ1γ/ Γ.Π/οικ 81025/27.8.2013)
HU	All population: all catering settings	Legislation: Decree No 30/1999 of the Minister for Human Resources on nutrition standards for mass caterers
IT	School children (kindergarten, preschool, primary and secondary school)	Legislation: National Guidelines for school catering.
LV	Kindergarten children: 1-2, 3-6 years School children: 7-18 years Clinics and medical institutions	Legislation: Issued pursuant to Article 19(3)(1) of the Law on the supervision of the food chain
PL	School children	Legislation: Regulation of the Minister of Health regarding the foodstuff to be sold to children and youth in education system facilities and the requirements to be met by the foodstuff served on a mass scale to children and youth in those facilities.
SE	School children: compulsory schools, upper-secondary schools. (from 6 years.) Leisure time centres	Guidelines (The national guidelines for school meals provide overall guidance, support and suggestions on how to work to create food enjoyment and promote sustainable eating habits. The advice is based on a comprehensive evaluation of the scientific evidence and on the Swedish Food Agency's dietary guidelines. The advice also includes additional support for mealtime education and reduced environmental impact.)
SI	Kindergarten children: 1-3 years School children: 4-18 years	Guidelines: Healthy eating guidelines in educational institutions from institute of health protection

Source: own elaboration.

5.2 Coverage of sustainability dimensions in existing public procurement provisions

The criteria analysed in the scope of GPP, which amounted to more than 500 single criteria, were classified looking at the sustainability dimensions they refer to (Figure 9). The analysis of the criteria under the lens of sustainability helps in understanding both what is already being done by MSs and what could be possible developments to enhance food system sustainability through public procurement.

Figure 9. Sustainability dimension covered in existing environmental and social criteria.

Source: own elaboration.

As can be seen in Figure 9, almost half of the criteria collected target specifically environmental sustainability, which is expected as green procurement uptake has already been recorded in Europe since the early 2010s (Testa et al., 2012, Neto & Gama Caldas, 2018). At the same time, MSs are **clearly already introducing procurement provisions that incorporate more aspects than those originally included in the EU GPP criteria** (Boyano et al., 2019).

The analysis shows that procurement criteria cover other dimensions of sustainability, such as **socio-economic aspects, and animal welfare.**

The analysis has shown how **criteria cover multiple dimensions at the same time**, and thus discriminating between the different sustainability dimensions can be challenging. Interestingly, 14% of the identified criteria concern specifically animal welfare. A few MSs (AT/FI/SE/NL) in particular propose specific criteria for this aspect, which will be analysed in Section 5.3.2.2.

Lastly, a small percentage of the procurement criteria (7%) analysed cover nutritional, health or dietary requirements (these are labelled as cross cutting in Figure 9). These were found in the public procurement provisions and not in the nutritional related public procurement sources, which are analysed in Section 5.3.2.3. These nutritional, health and dietary aspects concern vending machines, food environments, restricted substances such as alcohol and coffee.

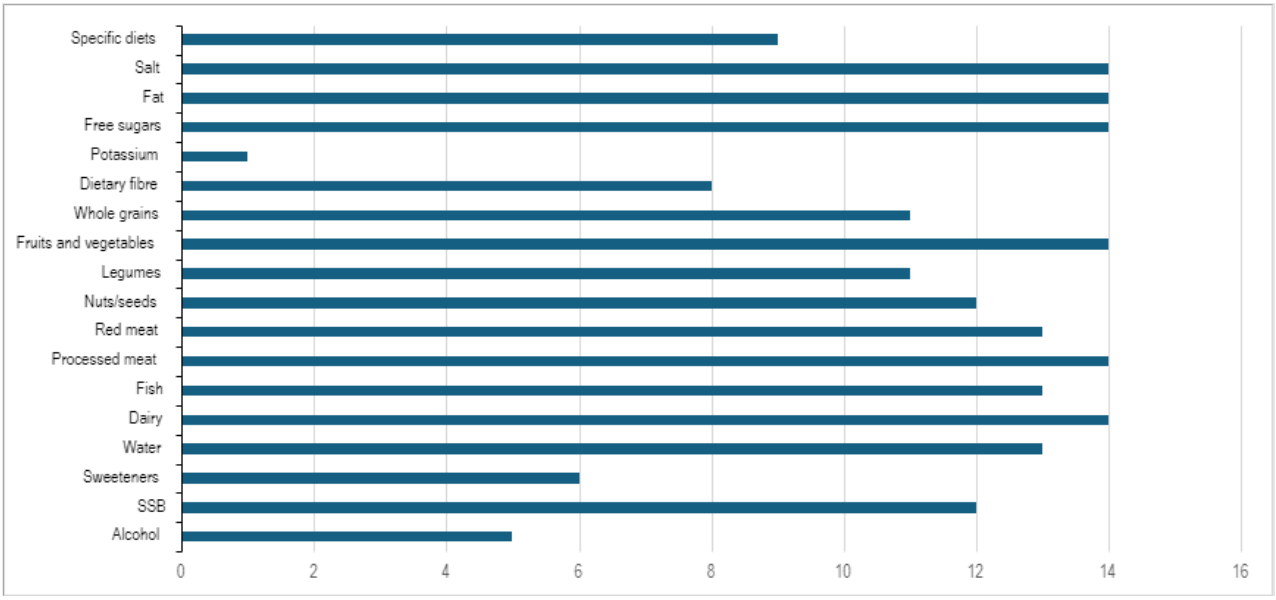
Existing GPP criteria at EU level do not explicitly include nutrition. However, it is worth mentioning how MSs are including this aspect in their environmental or social public procurement provisions. For example, criteria dealing with dietary requirements, health, bans on specific food groups in vending machines and indications on food processing have been categorized as related to nutrition. Plant based diets and menu planning, in particular, can fall under this category, and are analysed further as a cross-cutting issue, touching on multiple sustainability dimensions.

The criteria analysed cover many different sustainability aspects and cover all life cycle stages, ranging from food production practices to consumption and waste management. Primary production, including farming and fisheries are particularly addressed by procurement criteria.

Specifically for nutrition, a total of 18 nutritional aspects were examined in 14 EU countries, including 5 nutrients and 11 food groups. Salt, fat, free sugars, fruits and vegetables, meat and

dairy products are the most commonly addressed nutritional criteria in public food procurement across countries, while potassium intake is considered by just one country (Figure 10).

Figure 10. Number of countries among those analysed with each JRC-assessed nutritional criteria.



Source: own elaboration.

We found that adherence to national Food-Based Dietary Guidelines (FBDGs) is not used as a criterion for public contracts in most countries, however, nutritional criteria like meal frequencies and quantities from different nutrients and food groups are either guided by these recommendations or directly derive from them.

Specific considerations for those who follow a special diet due to cultural, ethical, or religious reasons are included as criteria for public food procurement in most countries. Vegetarian diets are the most commonly mentioned, but countries tend to have quite different approaches. In some countries, a vegetarian option is always available daily or weekly at lunch (AT, DE, FI, SE). Further details can be found in Annex 3, Table 1.

This report's analysis found few criteria targeting the socio-economic dimension, mainly focussing on supporting primary producers through quality schemes and ensuring fair remuneration. Few other examples include innovation, Life Cycle Costing, and continuous improvement. MSs usually propose punctual criteria aligned with their other policy objectives, including criteria incentivizing local production which are supported by nine MSs.

Quality product purchasing, aiding product differentiation and cultural heritage preservation, is mentioned by various national legislations. However, quality products often need price premiums, and further research is needed on their inclusion in public tenders.

Procurement of local products is not allowed under EU directives due to the principle of non-discrimination and equal treatment. The report highlights the need for a common definition of local products and links locality to broader strategies like France's *Projets Alimentaires Territoriaux* and Italy's Biodistricts.

Table 4 provides a non-exhaustive summary of the aspects covered by the procurement provisions analysed. Annex 2 collects also more detailed examples of the criteria applied by the different MSs.

Table 4. Topics covered by the procurement criteria.

Dimension	Primary production	Transport	Processing	Food service management	Consumption	Waste
Environmental	Production methods, including organic agriculture, integrated production, agricultural practices which promote/conserve biodiversity Promoting sustainable management practices for specific "high risk" commodities (soy, palm oil) Fisheries and aquaculture management Reduce energy and water use in primary production	Distance and mode of transportation between production and food services	EMAS, Ecolabel use for cleaning products Energy and water efficiency in commercial kitchen equipment Follow eco-design principles for kitchen equipment Noise pollution Promoting energy saving staff behaviours	Reusability/reparability/circularity of utensils and other food service materials	Increase the diversity of crops consumed (genetic biodiversity) Waste reduction strategies utensils	Waste treatment options for packaging Waste collection and treatment for used oil Waste reduction (through less packaging)
Social	Promoting Fair trade products Encouraging consumption of products produced in compliance with ILO conventions on forced/child labour Ensure compliance with national and international law on conservation		Social protection and inclusion of catering staff Social inclusion of vulnerable groups Training/upskilling for staff in food waste/environmental aspects Worker safety		Increase food safety beyond baseline EU rules Inclusivity towards diverse cultures/religions/ allergies Menu planning Accessibility/transparency towards consumers	

Dimension	**Primary production**	**Transport**	**Processing**	**Food service management**	**Consumption**	**Waste**
Nutrition			Cooking methods		Amounts of nutrients and food groups used in the menu planning	Food waste reduction
Animal welfare	Animal welfare, for specific animals and phases of the rearing Organic production for livestock rearing (higher animal welfare) Restricted antibiotic use	Training for drivers of livestock transport Animal welfare during transportation				
Economic	Support to Family farms Support local and regional production Fair price and remuneration for producers Purchase of quality scheme products (PDO/PGI*)			Push for innovative ideas	Fair price for consumers	
Cross cutting issues	Food waste, plant-based diets and improved menu planning, monitoring, traceability in the supply chain					

**PDO: Protected Designation of Origin; PGI: Protected Geographical Indication*

Source: own elaboration.

5.3 Assessment of sustainability dimensions covered in public procurement criteria

Primary production, including agriculture, fisheries and aquaculture is extensively targeted by criteria introducing requirements on specific production methods to be followed by food suppliers for public institutions. One of the few available evaluations of implementation of green procurement (Testa et al., 2012) indicated the purchase of organic products as the most successful initiative. Some criteria give more specific guidance on **agricultural practices**, complementing the organic product requirements. Integrated pest management practices, water use, energy use in greenhouses, fertilizers, and practices enhancing biodiversity or halting deforestation are also mentioned in certain MSs.

Transportation-related criteria mainly focus on vehicle or fuel types to reduce emissions, while food services criteria cover food procurement compliance, energy and water efficiency, environmental management through EMAS, and EU Ecolabel use. Novel elements include training cooking staff for **energy-saving behaviours, eco-designed** kitchen equipment, and promoting **reparability**, **circularity, and reusability** of food service equipment, including cutlery.

In existing EU GPP criteria, **social provisions** are only partially addressed through the proposed "Fair and ethical trade" award criteria. This analysis shows how MSs are proposing a broader understanding of social criteria than those proposed by the Commission, spanning more life cycle stages, including primary production, food services and consumption.

5.3.1 Environmental hotspots considered by the analysed criteria

Based on the qualitative analysis anticipated in Section 4, **climate change, biodiversity, eutrophication, water use, land use, soil health and waste generation** turn out to be the hotspots most covered by the existing provisions. The coverage of these environmental impacts is related to the fact that the great majority of criteria found focus on agricultural production and especially organic production, which can affect biodiversity, soil health, and land use. Water use is targeted both by criteria for food production and water use in kitchens. Waste is addressed by circularity and waste management criteria.

Changes in primary production are often introduced through the analysed criteria, mainly with **organic production**, integrated management or other forms of land management. Organic farming can result in lower GHG emissions (climate change), enhanced soil and water quality, and lower energy use per land area. Organic farming has a large positive effect on biodiversity, although the extent varies with the organism group and crop. Organic farming can reduce ecotoxicity due to restrictions on pesticide use (European Commission, 2023). These benefits are sometimes debated due to the lower yields of organic agriculture (Boschiero et al., 2023). Procurement of palm oil or soy products managed according to specific management practices, often certified through **specific certification schemes** (Roundtable on Sustainable Palm Oil - RSPO, Roundtable on Sustainable Soy - RTRS) can improve sustainability in areas such as soil, biodiversity, land-use change, and organic carbon stocks by schemes like RSPO and RTRS. Other certifications can be also connected with primary production practices, such as **fair trade certifications**. They might have environmental impacts as they ensure compliance with social and environmental standards, contributing to positive impacts on climate change, biodiversity, and ecotoxicity, and often include measures to prevent deforestation and hazardous pesticide use.

This analysis examines how novel criteria included by MSs in their provisions might include elements that are particularly relevant to production system in their territories. For example, Nordic countries require food produced in greenhouse to use renewable energy, thus possibly decreasing the GHG emissions

The criteria regarding **fish and aquaculture products** target especially biotic resource depletion and, in some cases, also water quality and eutrophication with requirements on fishery management practices. Stock sizes, fertility rate, origin of production are variables often included by procurement criteria. Nevertheless, an important aspect to consider regarding aquaculture is the use of wild fish as feed (Farmery et al., 2017), which however requires enhanced traceability in the supply chain which could be hard to enforce through public procurement.

Several criteria tackle **waste generation and resource efficiency** by cutting the use of single use plastics and enhancing circularity. Waste prevention is prioritized, followed by material recovery/recycling and energy recovery, with generally positive outcomes and significant climate change benefits, as well as improved resource efficiency (e.g. metals, fossils). Energy and water efficiency criteria for kitchen appliances such as ovens, hobs, dishwashers, and refrigerators. While reducing energy use impacts climate change and ozone depletion, minimizing water use in food services has a minor overall impact on SPP since 70% of global freshwater is used in primary production (irrigation and livestock), with kitchen activities accounting for a fraction (Garcia-Herrero et al., 2023).

A **diet based on more plant-based products** would have a positive effect for climate change (Cerutti et al., 2018; Tregear et al., 2022; Springmann et al., 2018), ozone depletion, particulate matter (Balasubramanian et al., 2021), eutrophication (Xue & Landis, 2010), ecotoxicity (Nordborg et al., 2017), and biotic resources. Trade-offs have been identified for a few impact categories such as water use and food waste. The impact of plant-based diets on water use strictly depends on the type of products (including, irrigation method and geographical area considered) that substitute animal-based products, especially in the use of nuts (García-Herrero et al., 2023). Transportation provisions aim to reduce fuel consumption and air pollutant emissions from food transport. Transport generally contributes a small portion of GHG emissions in a product's life-cycle, except for air-transported, highly perishable products, but it is unclear to what extent these might be actually purchased for public institutions.

Purchasing locally produced food is often recommended to reduce GHG emissions from food procurement, but the overall impact of transportation is minimal compared to the type of food consumed, except for highly perishable items transported by air or those requiring long refrigeration. Finally, in terms of social sustainability, local food systems contribute to rural development, community cohesion and can have role in food system resilience (Stein & Santini, 2022). This is further addressed in the socioeconomic part of the analysis.

As explained in Boyano et al. (2019), criteria focusing on the **reduction in use of chemical products** and consumable goods also often recommend the use of products bearing the EU Ecolabel. Requirements to avoid overdosing (e.g. kitchen roll, kitchen paper and dispensers) can have a positive impact on waste generation. Furthermore, a more accurate consumption of cleaning agents and hand soaps can have a positive impact also on eutrophication and ecotoxicity (Chirani et al., 2021).

Biodiversity can be potentially impacted not only by provisions related to agricultural production, but also by criteria promoting diverse diets, which can influence demand for diverse species thus enhancing agrobiodiversity (Hunter et al., 2019).

5.3.2 Social hotspots considered by analysed criteria

The **social hotspots** in the food system were analysed according to the framework explained in Section 4.

5.3.2.1 Socioeconomic aspects

The main identified areas of concern, or hotspots, for sustainable public procurement include **working conditions for agricultural workers**, to a lesser extent for food service workers, who are covered by EU and national labour laws. Criteria mandating compliance with the ILO conventions, or generally increasing the welfare of farmers and other agricultural workers, including Fair Trade certifications were more numerous in this analysis. In many cases, the criteria focussing on agricultural workers were associated to the purchase of exotic products, such as coffee, cocoa, tea or exotic fruit from countries outside Europe, where working conditions might be less regulated than in Europe. Seasonal and migrant worker exploitation is particularly present in Europe's agricultural sector, especially for fruit and vegetable production (EPRS, 2021). This issue is well known due to reports from journalists and civil society organization, but lacks systematic inquiry from researchers. There is therefore a lack of knowledge on the entity of the issue in Europe.

However, a recent report commissioned by the European Parliament Research Service provides an overview of the implementation of the **social clauses** in the EU public procurement directive (socially responsible public procurement) and signals how these clauses are voluntary in their application, both in nature is the "mandatory horizontal social clause" which calls on MSs to comply with applicable environmental, social and labour laws (obligations established by EU law, national law, collective agreements and the eight specified core ILO conventions) (Caimi & Sansonetti, 2023). This report indicates that "data about the volume and value of socially responsible public procurement (SRPP) in the EU does not exist [...] Only anecdotal evidence exists based on some studies that have collected good practices and the views expressed by practitioners and stakeholders involved".

The social clause applies across sectors; the extent to which it is applied in the food and food service sector is unclear. In the food and catering sectors, the use of reserved contracts is common, with the goal of supporting social enterprises and the employment of people with disabilities or other groups with barriers to labour market participation, but no provision has been found in this analysis.

Social protection and inclusion of workers however expands beyond the primary food production and includes also food services, where training of staff, worker safety and the contracting of social enterprises can also be deployed to include social aspects in public food procurement. In this analysis, food service workers were less considered compared with agricultural workers. Tregear et al. (2022) in a recent study highlight the role of food service staff in the deployment of sustainable food procurement. Simon et al. (2022) also point out how food service workers can be often underpaid and be prevalently female, highlighting a **gender imbalance** in this sector. In the European Union, a Council Directive was proposed to ensure adequate minimum wages and effective bargaining across MSs, which might also affect food services (European Council and European Parliament, 2022), but analysing its uptake in different MSs is outside the scope of this work. Lastly, literature on food system workers is quite scarce, further research is needed in this field

Other socioeconomic aspects are **fair and ethical trade criteria**. They primarily target exotic products like coffee, tea, cocoa, exotic fruits, and are introduced by six MSs. However, exploitation is

an issue of European supply chains as well. Italy's public procurement legislation includes a criterion for verifying agricultural supply chain working conditions (Repubblica Italiana - Ministero dell'Ambiente e della Sicurezza Energetica, 2020).

Other countries such as Sweden or France also include “socially sustainable” products, but these may not refer explicitly to the Fair-trade label or movement in the formulation of the criteria. Sweden for example specifically mentions compliance with basic International Labour Organization conventions concerning worker social protection and working conditions.

Sweden, Netherlands, Finland are among the MSs providing these criteria to be included in public contracts. The Netherlands proposes the application of the Social Return on Investment methodology, which as described by Mariani et al. (2024). It “provides an evaluation method for understanding, measuring and reporting on change, and the value created by an organisation or activity. It examines the social, economic and environmental impacts arising from the organisation’s work, and attributes a value based on common accounting and investment appraisal methods, in order to estimate its financial value”.

In many cases, the verification of these criteria is established by the application of recognized labels such as the Fair-trade label or just generally recognized as third party certifications established by a multi-stakeholder organization.

From a consumer perspective, Spain and Germany promote the inclusion of criteria dealing with accessibility, inclusivity and communication related to food. Inclusivity is exemplified through mentioning that menus offered in public settings should be sensitive to cultural and religious sensitivities of a potentially multicultural customer base. Attention to people with allergies and dietary restrictions is also mentioned, along with clear **communication and transparency of menus to consumers** and parents in case of school children. All these aspects are mentioned as voluntary in the documents examined and their enforcement is unclear; however, they denote the expansion of the understanding of social sustainability beyond the fair-trade criteria.

Requirements banning the use of specific chemicals, GMOs or food additives can be linked to consumer health and safety. Organic agriculture requirements could potentially also affect consumer health and safety, mostly based on the assumption that organic products, such as fruits and vegetables, usually have lower levels of agrochemical residues thus possibly having less toxicity impacts on humans (EFSA, 2018).

The assessment of the **economic hotspots** proved to be particularly difficult due to the highly case-dependant nature of the possible economic performance of the criteria. Messages can be derived for **fair remuneration for all primary producers**, which can be affected by fair trade criteria, as well as local and short supply chains. In Finland the only case was found where fair pricing for producers was applicable to all food products, regardless of origin. **Effects on third countries** were associated with the implementation of fair-trade criteria, or certifications on palm oil and imported soy. **Territorial impacts** were considered in relation to local food procurement criteria proposed by MSs, as the specific aim of local food provisioning is to support the development of local supply chains and improve the socio-economic conditions of farmers.

5.3.2.2 Animal welfare

For the purposes of the present analysis, animal welfare is considered as a social hotspot. The 2019 EU GPP criteria address animal welfare solely for egg products, incentivizing the use eggs and egg

products coming from cage-free laying hens, justified by the low uptake of animal welfare criteria at the time (Boyano et al., 2019).

The present analysis of MSs Criteria on animal welfare indicates that animal welfare is taken into consideration beyond egg products, especially by a subset of MSs (FI, AT, SE, IE, IT, DE, ES).

Primary production and transport are the life cycle stages mostly affected by the animal welfare criteria. Different phases of the livestock rearing system are also affected by the analysed criteria, including feed, housing and transport. Controlling the feed for antibiotic use is also widely mentioned in the criteria assessed (Section 4). Animal welfare is also covered by criteria encouraging the purchase of organic animal products, as organic regulation envisions a higher level of animal welfare compared to conventional.

These examples show how the **scope of animal welfare is expanded in procurement criteria**. However, it needs to be assessed to what extent these criteria are more ambitious than existing EU wide animal welfare legislation, as there could be an overlap. Relevant trends include increasing attention to monitoring of production practices, traceability, especially for feed, and the involvement of other stakeholders from the supply chain, like truck drivers. Animal welfare criteria were also analysed in terms of their coverage of the 5 freedoms constituting animal welfare as developed by the World Organisation for Animal Health in 1965 (WOAH, 1965). This analysis found out that these were comprehensively covered, especially in terms of absence of pain and disease (anaesthesia and stunning during slaughter) and freedom to express specific behavioural patterns (such as having access to roughage and outdoor pasture).

Transparency, traceability and monitoring are often associated with animal welfare. Animal welfare or quality labelling are often mentioned as the method for criteria verification. However, the animal welfare labelling schemes from different MSs might differ in requirements and therefore lead to different outcomes.

5.3.2.3 Nutritional analysis

The commissioned work identified 14 EU countries with nutrition-related criteria for public food procurement. From these countries, information on 18 nutritional criteria, including nutrients and food groups, were extracted and are detailed below.

5.3.2.3.1 Analysis of nutrient criteria

This section presents a summary of the key findings on the coverage of the five nutrient criteria of interest across the 14 EU countries with food public procurement criteria identified (Lermant et al., 2024), and the key findings are summarized in Table 5.

Table 5. Summary of key findings on the analyses of nutrient criteria in 14 EU countries.

Nutrient	Countries with data available	Thresholds provided	Other important points	Proposed criteria at food product level (2 examples)	Key message
Salt	14 countries (12 for salt and 2	7 countries 2-6 g/d, depending	Iodised salt Some countries calculated grams of	Bread: max 1.2-1.8 g salt/100g	Use salt sparingly Many countries provide maximum limits, which vary by age

Nutrient	Countries with data available	Thresholds provided	Other important points	Proposed criteria at food product level (2 examples)	Key message
	for sodium)	on age/setting	salt/lunch based on ~30% of RDI	Unsalted nuts and seeds	Use iodised salt Avoid the use of flavour enhancers (e.g. broth, glutamate)
Fat	14 countries	7 countries; e.g. max of total fat 30% of total E, <10% total E from SFA Varies by type of fat and age group	Criteria for low fat diet/foods: 5 countries Criteria by type of fat: 7 countries Low fat food preparation methods: 6 countries OILS: 12 countries. High quality vegetable oils for cooking, usually rapeseed oil is preferred	Dairy products (7 countries, e.g. milk & yogurt (max 5 g/100ml), cheese (max 30g/100g) Cereals (including bread, 5 countries, e.g. 10g /100g)	Fat is used consciously The amount of SFA should be limited Many countries provide maximum limits, which vary by type of fat and by age High quality vegetable oils for cooking, usually rapeseed oil is preferred
Free sugars	14 countries	Most mentioned: <10% energy intake	Fruit juices without added sugar, can be offered occasionally Naturally occurring sugar no need to be avoided	-	<10% energy intake from free sugars Added sugars should be limited, promoting unsweetened or low-sugar options Fruit juices without added sugar, can be offered occasionally
Potassium	1 country	-	-	-	1600-3300 mg/d in children from 1 to 19 years old
Dietary fibre	8 countries	Minimum 7 to 35 g/day, depending on age	Increase fibre-rich food intake (fruits, vegetables, potatoes, cereals, legumes) and replace low-fibre grains with whole grains	Bread (min 5-6 g fibre/100g)	Increase fibre-rich food intake (fruits, vegetables, potatoes, cereals, legumes) and replace low-fibre grains with whole grains Minimum 7 to 35 g/day, depending on age

Source: own elaboration.

Salt

Several countries have implemented specific measures to ensure that salt consumption is limited in public catering. Half of the countries (DE, ES, FI, FR, IT, SE, SI) have adopted the use of iodised salt as a key policy point. Additionally, five countries - CZ, FI, GR, LV, PL - have established maximum limits for certain foods, with bread and unsalted nuts and seeds being the most mentioned.

Moreover, ES and LV advise against using broth concentrates and other flavour enhancers. Finally, seven countries (DE, EE, FI, HU, LV, SE, SI) have set daily or lunchtime limits on salt or sodium consumption, generally ranging from a maximum of 2g/d in infants to 6g/d in adults and older adults; however, some countries like Hungary, allowed higher amounts. Please see Annex 3, Table 2 for further details.

Fat

All countries examined include criteria on fat intake for public food procurement, and in general, they mention to limit its consumption, particularly the consumption of saturated fat. In six countries (AT, DE, FI, FR, GR, HU), a low-fat diet or a consumption of low-fat foods is further specified. Half of the countries (AT, CZ, DE, ES, FI, FR, HU, PL, SI) address fat consumption separately depending on the type of fat. In terms of oils, 12 countries mention preferred oils, with high quality vegetable oils, especially rapeseed oil, being the most common preference.

Dairy products and cereals (including bread, rice, among other cereals rich in wheat) are the most frequently mentioned food categories with maximum fat content. Half of the countries (AT, CZ, DE, FI, FR, IT, and SI) provide information on the maximum amounts of total fat in school meals, with five of these countries (AT, CZ, DE, FI, FR) specifying amounts in grams per day, two (IT, SI) in percentage from total energy and one (SE) providing both. These amounts vary by age groups and between countries, ranging for example between 20%-40% of daily energy intake from total fat depending on the age group or country. For more detailed information for each country, please see Annex 3, Table 3.

Four countries (FI, FR, SE, SI) provide criteria on saturated fat (SFA) amounts, with Finland, Sweden and Slovenia mentioning <10% of daily energy intake and France specifying <12%. Three countries (FR, SE, SI) have criteria on trans fat (TFA); France recommends <2% of total energy, Sweden to keep it as low as possible, and Slovenia mentions <1%. Monounsaturated fat (MUFA) criteria are given by Estonia and Slovenia (>10% of daily energy intake), while polyunsaturated fat (PUFA) criteria are given by Estonia (~7.5% of daily energy intake), Finland (5-10%), Sweden (5-10%), and Slovenia (~7%).

Free sugars

Free sugars content is another criterion addressed by all examined countries in public food procurement. The focus is on limiting added sugars, promoting unsweetened or low-sugar options, and encouraging healthier alternatives like fresh fruits, vegetables, and dairy products. Some countries provide specific thresholds on maximum sugar intake per meal or per day (<10% energy intake: EE, HU, SI), or maximum of 11g to 65 grams/day depending on age. Moreover, some countries emphasize that fruit juices without added sugar, which still contain high amounts of free sugars, can be offered occasionally, but water should be the primary choice for hydration (Annex 3, Table 4). Sugar-sweetened beverages, which are usually rich in free sugars, are discussed in a separate section below.

Potassium

Only Estonia had criteria on potassium intake, ranging from 1600-3300 mg/d in children from 1 to 19 years old (Annex 3, Table 5).

Dietary fibre

Eight out of the fourteen countries include criteria for fibre intake in public food procurement. Four (FI, FR, GR, SE) specify increasing the consumption of fibre-rich foods such as fruits, vegetables,

potatoes, cereals, and legumes, and replacing low-fibre grains with whole grains. Some countries provide minimum daily or per meal fibre intake for various age groups, ranging from a minimum of 7 grams to 35 grams per day. Lastly, FI and LV specify minimum fibre content in specific foods, with bread being the most mentioned food item. In these countries, bread should contain between 5 and 6 grams of fibre per 100 grams of product (Annex 3, Table 6).

5.3.2.3.2 Analysis of food group criteria

A summary of the crucial findings on the coverage of the selected 11 food groups across the 14 European Union countries identified is shown in this section. The most important concepts are summarized in Annex 3.

Table 6. Summary of key findings on the analyses of food group criteria in 14 EU countries.

Food groups	Countries with data available	Thresholds provided	Other important points	Key message
Fruits and vegetables	14 countries	Aim for 5 portions/day (FBDGs)	Prioritize fresh, minimally processed fruits and veggies daily No added sugars or excess salt Use nutrient-preserving cooking methods	Prioritize fresh, minimally processed fruits and veggies daily No added sugars or excess salt Use nutrient-preserving cooking methods
Whole grain	10 countries	N/A	Include whole grains daily, replace low-fibre/refined grains with whole grains	Include whole grains daily, replace low-fibre/refined grains with whole grains
Legumes	10 countries	Diverse criteria formats across countries	Regularly include fresh/frozen legumes (no added salt/sugar), as an animal protein alternative	Regularly include fresh/frozen legumes (no added salt/sugar), as an animal protein alternative Diverse criteria formats across countries
Nuts/seeds	12 countries	10-30 grams/d	Unsalted/unsweetened nuts/seeds	Unsalted/unsweetened nuts/seeds Range of mentioned intake: 10-30 grams/d
Meat	13 countries red meat 14 countries processed meat.	Diverse criteria formats across countries	Follow FBDGs for red meat limits Prioritize lean, low-fat meat, between 15-30% max fat Prefer unprocessed/low-processed options	Follow FBDGs for red meat limits Prioritize lean, low-fat meat, between 15-30% max fat Prefer unprocessed/low-processed options

Food groups	Countries with data available	Thresholds provided	Other important points	Key message
				Most countries combine red/processed meat criteria
Fish	13 countries	1-3 fish meals/week, incl. fatty fish	Prefer unprocessed/minimally processed options Kids under 3: limit wild predatory fish, avoid high-mercury fish	1-3 fish meals/week, incl. fatty fish Prefer unprocessed/minimally processed options Kids under 3: limit wild predatory fish, avoid high-mercury fish
Dairy products	14 countries	Diverse criteria formats across countries	Overall, low-fat/semi-skimmed dairy. Unsweetened/low-sugar dairy products Higher dairy for vegetarians 2 countries mention vitamin D-enriched dairy.	Overall, low-fat/semi-skimmed dairy. Unsweetened/low-sugar dairy products Higher dairy intake for vegetarians 2 countries mention vitamin D-enriched dairy.
Water	13 countries	N/A	Free water access as primary beverage throughout the day Tap water is encouraged Restrictions on sugary and flavoured beverages are common	Free water access as primary beverage throughout the day Tap water is encouraged Restrictions on sugary and flavoured beverages are common
Sweeteners	7 countries	Not applicable	Limit/avoid sugar/sweeteners in foods and drinks, especially for young children/schools Importance of not getting accustomed to sweet flavours from an early age.	Restrictions or bans on the inclusion of sugars and alternative sweeteners, such as honey, in foods and beverages Importance of not getting accustomed to sweet flavours from an early age
Sugar sweetened beverages	13 countries	Diverse criteria: - No added sugar allowed	Overall, no sugar, sweeteners, caffeine, or stimulants in drinks Naturally occurring sugar no need not be avoided	Overall, no sugar, sweeteners, caffeine, or stimulants in drinks Some countries allow some small amounts of added sugars

Food groups	Countries with data available	Thresholds provided	Other important points	Key message
		- Max ~5g of sugar per 100ml - Max: 10% E from free sugars		
Alcoholic drinks	5 countries	N/A	Most countries lack alcohol guidelines, focusing on school settings where alcohol is assumed to be prohibited In other settings, alcohol availability is discouraged France advises moderate alcohol consumption with drink-specific maximums.	Most countries lack alcohol-related criteria, focusing on school settings where alcohol is assumed to be prohibited In other settings, alcohol availability is discouraged France advises moderate alcohol consumption with drink-specific maximums.

Source: own elaboration.

Whole grains

This food group include all foods for which the entire seed of a plant, including the bran, germ, and endosperm is present. Most of the examined European countries (AT, DE, EE, ES, FI, FR, GR, HU, LV, SE) include wholegrain intake criteria in public food procurement. Overall, they specify that whole grain options should be included daily, and low-fibre grains/refined grains should be replaced with whole grains. Most countries provide amounts in the form of specific portions or grams per day/week of cereals, emphasizing the minimum amount of whole grains required; however, there is variation in the criteria across different countries (Annex 3, Table 7).

Fruits & Vegetables

All countries emphasize the importance of consuming fresh fruits and vegetables daily, prioritizing minimally processed options without added sugars or excess salt, and that the sugar naturally present in fruits and vegetables should not be avoided. They specify minimum intake of raw vegetables and fresh fruits, usually per day or per catering period. Criteria for quantities differ based on age groups and dietary needs, but generally, countries follow the FBDGs, mentioning five portions of fruits and vegetables per day (Annex 3, Table 8).

Legumes

Most countries address legume intake in public food procurement, highlighting the regular inclusion of legumes in the menus and prioritizing fresh or frozen options without added salt or sugar. On some occasions, legumes are proposed as an alternative to animal protein. The criteria for intake of legumes vary by age and country, and while some countries do not have separate criteria for legumes, they mention proposed intakes for multiple food groups together (e.g., a minimum intake for meat, legumes, or fish), some of which should be covered by legumes. Other countries provide

criteria in terms of minimum servings per number of catering days, or by grams/day or week, which may vary by age group or physical activity levels (Annex 3, Table 9).

Nuts and seeds

Twelve out of the fourteen countries have criteria for nuts and seeds in public food procurement. Seven countries (AT, CZ, DE, ES, FI, GR, LV) encourage the consumption of nuts and oilseeds without added sugar and salt, and Germany proposes more nuts and seeds for vegetarians. Moreover, Germany and Finland are the only countries with specific daily or weekly intakes for nuts and seeds consumption, which are 70-100 grams per 7 catering days for adults in German clinics and 15-30 grams/day for Finnish school children, respectively (Annex 3, Table 10).

Meat

In most countries, criteria for red and processed meat for public food procurement are not separated; however, Greece has criteria for processed meat only, stating that cold cuts (pre-cooked or cured meat products) should not be included in sandwiches and pizzas; this is likely due to the fact that the legislation covers canteens only, where such products are to be expected. AT, DE, ES, FI, HU, SE, and SI specify to limit red meat intake. Some countries mention prioritizing the consumption of whole pieces or slices of lean meat, and that the fat content in meat should not exceed 15% or 30%, depending on the country. Low-processed meat products are preferred over highly processed options. Sweden specifically mentions serving vegetarian, egg, fish, or poultry options more frequently or in larger portions to replace red and processed meat. Overall, the criteria are given in portions per week or per catering days (Annex 3, Table 11).

Fish

Almost all countries provide criteria on fish intake for public food procurement. Criteria are usually given in times per week, with most proposing 1-3 fish meals per week and the regular inclusion of fatty fish. Unprocessed or minimally processed options like fresh or frozen fish are preferred. Additional criteria for children under 3 include limiting the consumption of wild predatory fish and avoiding fish with high mercury content (Annex 3, Table 12).

Dairy products

All countries have criteria concerning dairy product intake, with most emphasizing low-fat or semi-skimmed dairy options and unsweetened or low added sugar products. Milk, cheese, and fermented dairy products are the most frequently mentioned. However, there are some variations in these criteria: Germany proposes a maximum fat content in milk of 3.8%, while Hungary and Slovenia suggests milk with a fat content between 2.8% and 3.6% for children around 1-3 years of age. Nonetheless, both Hungary and Slovenia suggest switching to semi-skimmed milk and low-fat dairy products after 3 and 2 years of age, respectively.

Some countries propose specific amounts per meal or per day, while others include not only dairy products but also dishes and dairy-based desserts in their criteria. In the case of vegetarian diets, countries such as the Czech Republic and Germany propose higher amounts of dairy products. Finally, Finland and Sweden emphasize using dairy products fortified with vitamin D (Annex 3, Table 13).

Water

Most countries have criteria for water intake for public food procurement, and emphasize that water, preferably tap water, should be easily and freely accessible throughout the day as the

primary beverage option in schools and other settings. Germany is the only country that mentions a specific amount of water in full catering for elderly in nursing homes and adults in clinics (at least 9 litres per week) (Annex 3, Table 14).

Sweeteners

Half of the countries (CZ, DE, EL, LV, PL, SE, SI) refer to the use of sweeteners in food and drinks in public procurement. The focus is on limiting or avoiding the use of sweeteners in food preparation, particularly for young children and in schools, as well as discouraging the addition of sweeteners to drinks and pre-prepared foods (Annex 3, Table 15).

Sugar-sweetened beverages

All countries except Austria mandate or provide guidance on the consumption of soft drinks and beverages. The general message is that drinks with added sugar, sweeteners or other stimulants should not be served or made available (Annex 3, Table 16).

Alcohol

Most countries do not include criteria on alcohol consumption, likely because they focus on foods and drinks in schools, where it is assumed that alcohol consumption is prohibited. However, Czech Republic and Germany specifically state that alcoholic beverages are not allowed in school settings. Regarding other settings, Germany and Hungary mention that alcohol should not be available in public catering services, with Germany citing potential interactions with medication in clinics and the elderly population. Finally, France states that alcoholic beverages should be consumed in moderation, with recommendations on maximum amounts depending on the specific alcoholic drink (Annex 3, Table 17).

Vending machines

Several MSs have established criteria for foods and beverages sold in vending machines, particularly in school settings. These criteria are consistent with those applied to other food offerings in public catering services, although there is a greater focus on limiting the fat, sugar or salt content in soft drinks and snacks, which are the primary items sold through vending machines. Due to time constraints, the analysis of these criteria is ongoing.

5.3.2.3.3 Identified gaps and needs in procurement criteria

Only five countries have implemented nutritional criteria for **children in kindergartens**, despite the critical importance of a healthy diet for infants' growth, development, immune system support, and establishment of lifelong eating habits.

Germany stands out as the only country with specific nutritional criteria for **patients in clinics**, where a nutritious meal is essential for recovery. It should also be noted that nutrition criteria tailored to specific health conditions or diseases, such as those applied in hospitals and other health-care facilities, are outside the scope of this work and were not researched. Additionally, Germany is the only country proposing quality standards for catering, regardless of whether it is publicly procured or not; and covering healthy adults, specifically company catering for working adults. Moreover, Germany and Finland are the only countries with nutritional criteria for older adults in care facilities. However, it is important to note that three countries have implemented criteria for any public catering structure, which would also apply to the mentioned cases.

Core concepts, such as reduced salt usage, were covered by all countries; however, the way the criteria are approached varies. Moreover, some criteria are generic, such as using salt sparingly, which can be challenging for caterers to implement. To facilitate practical implementation, public procurement **nutrition criteria should offer** easily understandable, clear, **quantifiable guidelines,** specifying, for instance, the number of servings or grams of specific food or ingredients to be consumed within a specific timeframe, such as daily or weekly.

Finally, we observed that **overall nutrient or food group criteria are specified per day in most countries rather than per meal** (e.g. per lunch), which is significant as it also covers meals consumed outside the scope of publicly procured food and many individuals using public canteens primarily consume meals up to lunchtime or including the afternoon snack.

6 Cross-cutting sustainability aspects in public procurement

Some criteria, which intrinsically cover or are addressed by multiple aspects of sustainability, emerged from the analysis. These include, for example, criteria promoting plant-based diets (Section 6.1) and food waste reduction (Section 6.2), as well as general aspects related to transparency and traceability within the food supply chain (Section 6.3), and verification and monitoring (Section 6.4).

6.1 Supporting the dietary shift

The importance of reducing animal products in European diets is increasingly recognised by scientists, policymakers and stakeholders. A number of European FBDGs recommend reducing meat intake and increasing the consumption of plant foods such as wholegrains, fruits, vegetables, nuts, and legumes (Lermant. et al., 2024). Animal production, including meat and dairy, is responsible for the majority of environmental impacts associated with primary production of all food products, with animal-based products accounting for approximately 70% of the environmental impacts of EU food consumption (Sala et al., 2023). Meat, in particular, is the largest contributor to the total environmental impact of all food and impact categories (mainly eutrophication, acidification, global warming and ecotoxicity). Recent studies have shown that reducing meat consumption or shifting from animal protein sources in the **menu planning is the most effective measure to minimise the overall environmental impacts of the food system** (Tregear et al., 2022; Cerutti et al., 2018; Casonato et al., 2024)**.**

A shift towards a plant-based diet is therefore key for a more sustainable food system, as it not only benefits the environment but also promotes **better health outcomes** (Willett et al., 2019). Shifting towards a **healthy plant-based diet** would imply a higher consumption of whole grain products, legumes, nuts and fruits and vegetables and a substantial reduction in animal and confectionary products (WHO, 2021). This dietary transition can lead to numerous health benefits, such as lowering the risk of chronic diseases, like obesity, cardiovascular diseases, diabetes, and certain types of cancer. Lower health care costs would also be a consequence of transitioning to a plant-based diet in the EU, as there would be a reduction in disease-related expenses for both individuals and the public healthcare system.

From a **nutritional perspective**, transitioning to a more plant-based diet is a gradual process that requires careful attention to key nutrients, particularly for individuals adhering to strict animal-free diets like veganism. Plant-based diets, including vegetarian and vegan options, are typically low in haem iron and vitamin B12. Vegan diets may also be deficient in calcium, vitamin D, and iodine. Therefore, individuals following a vegan diet should remain vigilant about potential micronutrient deficiencies (WHO, 2021).

Furthermore, it is crucial to recognize that not all plant-based foods are inherently healthy. Processed items like refined grains, sugar-sweetened beverages, and plant-based alternative of animal origin products can be high in saturated fats, salt, and free sugars. Therefore, to maintain a balanced and nutritious plant-based diet, opting for minimally processed foods is recommended (WHO, 2021).

From an **economic perspective**, this dietary shift is likely to have a positive impact in total expenditure in the public food sector. Recent studies (Eustachio Colombo et al. 2019, Stern et al., 2023) have underlined how increasing the percentage of plant-based products in menus can also lead to a reduction in total cost per meal, which can also be an incentive for budgets-strapped

public administrations without compromising workers' benefits A shift from meat proteins towards more plant-based options will likely have a positive impact in the budget as well as in the consumer's health. Possible synergies with animal welfare criteria could also occur due to a reduction in animal product consumption, but more research is needed to confirm the interaction. The EU GPP criteria already introduced a criterion on plant-based diets but were not very normative in the way it introduced the technical specification (Figure 11).

Figure 11. Technical specification on plant-based menus from EU GPP criteria.

TS2. Plant-based menus

Menus offered must include choices with the goal of increasing the consumption of pulses, vegetables, fruits, wholegrains and nuts whilst having the same recommended nutrient intake for the clients, including [*to be selected*].

- X[1)] vegetarian or plant-based day(s)/per week
- X[1)] vegetarian or plant-based dishes to be offered daily or Z[1)] days per week.
- "dish of the day" to be a vegetarian or plant-based dish
- Y[1)] grams of plant-based sourced proteins or pulses per [*week or day*].A bulking up (V[1)] %) of meat dishes with beans, grains or vegetables.

Verification:
The tenderer must provide the menu planning with the alternatives that promote the consumption of pulse, vegetables and fruits clearly specified, in accordance with the established requirements.

Source: Boyano et al. (2019).

The plant-based menus criterion applies only to food services and not to food procurement in general. It should be noted that public administrations that procure only food and manage food services directly should then apply the same principle of reducing meat consumption and encouraging a dietary shift through careful menu planning.

Some MSs have been introducing the general theme of plant-based diets in public procurement. In some cases, through criteria (AT, DE, PT, LV, NL, IE), in others as part of broader strategies (FR, DK) and through the introduction of Food Based Dietary Guidelines.

The framing of the dietary change is varied and can be formulated in different ways, for example:

— share of different food groups in the diet,

— reduction or ban of some products,

— the promotion of some products,

— the mandatory frequency of a certain type of meal or product.

Table 7. Overview of MSs Provisions on dietary shift through public procurement

Country	Content	Type of Provision (Source)
AT	In the commercial kitchens of the public sector is at least daily to offer a vegetarian or vegan main course is seasonal and regional and at least one main ingredient is organic/ecological production ("climate plate")	National Action Plan on public procurement
DK	Denmark has published the first national action plan for plant-based foods. This plan encourages increased public purchasing of plant-based food products. In addition, under the plan, the state and municipalities have signed a new agreement on food purchasing, which agreement, which sets out more stringent requirements for organic and plant-based food products in kitchens and offers free courses to reinforce the skills of the employees.	Action Plan on Plant-Based foods
FR	1. In 2018, the EGalim has set up an experiment of one vegetarian menu per week in public canteens. 2. In April 2021, as part of the French Climate Law, the French Parliament voted in favour of a having mandatory meat-free menu in all canteens at least once a week thus making the previous provision permanent.	1. EGalim law 2. Climate and resilience law
DE	This strategy aims to increase the use of plant-based alternatives in catering. The aim is to make a plant-based diet with a high proportion of unprocessed fruit and vegetables as well as fibre-rich cereal products, pulses and nuts more easily accessible. At the same time, the reduction in the consumption of animal-based foods to a sustainable and health-promoting level is to be supported. *No frequency or quantites are mentioned.*	Path to the German government's nutrition strategy
LV	The government has focused on menu design to provide vegetarian options and more nutritionally balanced menus in public facilities.	NA
NL	Minimum requirement (Basic): The tenderer must describe what he will serve in the standard menu for conference lunches (banqueting folder). There must be a vegetarian option and a vegan (100% vegetable) option. If using an ordering system, the option without animal proteins (the vegan option) must be presented first in the ordering system. The other options with the least amount of animal protein follow first and the most amount of animal protein last. Minimum requirement (Advanced): The tenderer must describe what he will serve in the standard menu for conference lunches (banqueting folder). The standard menu may only contain vegetarian and vegan (100% vegetable) options. Non-vegan/vegetarian options must be offered by the tenderer on request. Award criteria: The lower the animal protein content in the standard menu, the higher this will be rated	Public Procurement Criteria (MVItool)
PT	The current law establishes the mandatory presence of a vegetarian meal option in the menus of public canteens (canteens and mess rooms managed by sovereignty bodies, as well as services and Public Administrative bodies, central, regional, and local, and mess rooms). An exemption is possible if there is no demand to limit food waste. Note: Here the law precises that vegetarian meal means a meal that does not contain any animal-based products.	Law #11-2017

Country	Content	Type of Provision (Source)
SW	At least one plant-based meal should be offered in public kitchens and catering. For schools specifically, at least one dish needs to be plant-based and the school shall provide a separate salad buffet with at least five different components.	NA

Source: own elaboration.

Other countries (ES, IT, BE) propose vague phrasing of healthy diets in procurement criteria or introduce specific criteria for food groups or bans on certain substances.

Further research – implementation of plant based diets

This analysis can be expanded to research what kind of tools/guidelines can be used in support to planning procurement not only of single products but of whole diets and menus. Balancing environmental and nutritional requirements in diets for different target groups (school children, hospital patients, and university students) requires a more detailed approach. Furthermore, in certain situations, trade-offs with food waste production can occur if the shift is not following an incremental approach. From an economic perspective, scientific literature based on case studies has shown that delivering more environmentally and nutritionally balanced menus does not occur at the increased costs for public administrations and customers.

The analysis also points to the limitations of applying only a product approach, whereas implementing a menu/diet approach is necessary to ensure that trade-offs between sustainability dimensions are limited. Transitioning to a different diet will also need to be complemented with education and widespread behaviour change. Therefore the whole food system – including the stakeholders involved- should be approached when moving towards sustainability. Developing tools and providing training to all actors involved in public procurement (procurement lawyers, cooks, food service managers) is also fundamental for an effective implementation of such provisions.

6.2 Food waste

Food waste can also be considered a cross-cutting element across all sustainability dimensions, having significant environmental, social, and economic impacts. It is also crucial from a nutritional perspective, as sensitive collectives – such as school students – could waste highly relevant nutritional items (e.g. veggies) unless food waste prevention actions are considered. 9 MSs have introduced food waste as an important area for action in public procurement policies, in some cases through sectorial targets rather than procurement criteria, as other policies exist on the topic (De Laurentiis et al., 2023). Food waste monitoring is sometimes explicitly required through criteria, as already suggested by the EU GPP provisions. Monitoring is the first step in food waste reduction. The requirement to establish an **action plan for food waste reduction** is also mentioned by various countries, often referring to the broader food waste reduction policy (e.g.: AT, IE). Introducing food waste monitoring and reduction through procurement provisions could also deliver on multiple policy objectives, including the European Commission's proposal on EU food waste reduction targets (European Commission, 2023a).

Food waste was also found in the analysis of nutritional provisions applicable in public procurement settings, mainly addressing monitoring and evaluation issues. Germany, Spain, Finland, and Sweden were the MSs introducing such provisions. The primary focus of the criteria is on measuring and recording food waste by for example checking the returned dishes, with the resulting data being utilized to enhance menu planning, preparation, and presentation. Further details can be found in Annex 3, Table 18.

Trade-offs can occur when simultaneously intervening on nutritional and dietary components of food procurement and food waste (Qi et al., 2022; Trewern et al., 2022). Fruits and vegetables are often the foods which are wasted the most, especially in schools catering settings (Garcia-Herrero et al., 2019, 2021).

Table 8. Overview of public procurement criteria provisions on food waste.

Country	Content	Verification	Type of provision	Part of Food waste strategy
AT	The contractor shall implement at least five measures from a specified checklist to avoid food waste.	NA	Target	
BE	Reduce canteen waste by 40%	NA	Target	X
DE	In the agreement, the undersigned associations declare their willingness to reduce food waste by 30 % by 2025 and by 50 % by 2030. The agreement covers the whole of the sector, including staff canteens, hotels, hospitals, retirement homes and schools.	NA	Target	X
FR	Reduction of food-waste by 50% compared to 2015 by 2025	NA	Target	X
FR	Mandatory diagnosis on food waste and action plan	NA	TS	
IT	Food waste must be monitored and the reasons on the basis of which any food surpluses are generated must be analysed. Correction actions must be implemented.	Mention of cooperation with charitable organization for redistrubution of surplus (according to law 166/2016)	Target	
ES	Elements will be introduced aimed at minimizing waste and food waste, as well as its selective collection and the lowest impact environmental throughout the life cycle of the product or service	Training for staff and development of an action plan	Unclear	
IE	From 2025, 100% of new contract arrangements related to canteen or food services to include measures that are targeted at addressing food waste, with a specific focus on food waste prevention, taking into account Ireland's commitment to reduce food waste by 50% by 2030, and food waste segregation	Training for staff and development of an action plan	Target	X
	The tenderer must have written procedures describing its practices to prevent the generation of food waste, including [exclude any that are not relevant based on the nature of the service]: [list of actions]		TS	

Country	Content	Verification	Type of provision	Part of Food waste strategy
	The contractor will redistribute excess food by: • contacting local charities or other organisations that collect excess food products and distribute them locally; • implementing the procedures for the collection of food products that the organisation establishes; • monitoring and maintaining the cold chain of cooked products set by the organisation. This must be carried out in accordance with the FSAI's Food Donation Guidance. The contractor must keep records of the redistribution of food.		CPC	
	In addition to the specific measures targeting food waste, the contractor must implement a plan for reducing the generation of waste in accordance with the waste hierarchy of Waste Framework Directive 2008/98/EC. The plan must at least include: A) Developing a waste inventory: this means surveying all areas and processes to identify types and sources of on-site waste generation; and B) Reducing waste in the procurement of food, beverages, disposable and consumable goods This means: • Efficient ordering and storage: order perishable products frequently in the quantities required8 • Storing perishable products in appropriate conditions (e.g. correctly adjusted refrigeration units) • Ordering non-perishable products in bulk, when possible and storage space permits • Selecting the appropriate packaging (format, protection, preservation, serving portions, etc.) • Selecting recyclable packaging where possible provided the packaging guarantees food safety and hygiene. Recyclable packaging includes compostable packaging • Returning packaging for reuse when possible C) Reducing waste in the catering service. This means:		TS	

Country	Content	Verification	Type of provision	Part of Food waste strategy
	• Avoiding items with unnecessary or excessive secondary packaging • Putting condiments and food servings in refillable/reusable containers, where food waste prevention, food hygiene, consumer safety and public health considerations allow their use • Returning packaging for reuse when possible			
NL	After contracting, the tenderer must carry out two pilots in consultation with the client: 1. periodically measuring and analysing the waste percentage in banqueting (e.g. how many pieces of unconsumed food/drink are thrown away from which products?); 2. periodically measuring and analysing discarded products in the kitchen; or ensure that the above two points are measured and improved on as standard.	NA	Minimum Requirement	
	The contractor must provide a report with the results of the pilots as regards the measuring and analysing of waste in banqueting and in the kitchen, including a plan for improvement, or periodically report on the standard measurement and improvement system.	NA	CPC	
PT	Use of methods and strategies to avoid food waste; Vending machines do not include products of perishables in less than three days	NA	TS	

Source: authors' elaboration from Lermant et al. (2024).

6.3 Transparency, traceability and stakeholder involvement

This analysis has shown how **transparency, traceability, and stakeholder involvement** along the food supply chains are key aspects in public procurement.

Transparency is characterized by the open disclosure from producers and suppliers of specific characteristics of food products or services, which can be communicated through labels or certifications on products or services themselves. From the analysis of existing SPP criteria, transparency emerges both as a verification system for these products or services, as well as a requirement to communicate clearly with staff members (DE) or the final consumers (ES). In many cases, MSs provide a list of eligible labels and certifications for procurers to verify compliance with the sustainability standards. Further research could focus on establishing which labels are mostly used and the specific production requirements, and how they act in pushing towards the accomplishment of criteria.

Traceability refers to the ability to track food products from their origin to the latest point of placing on the market, with specific requirements for suppliers to provide information on raw materials (e.g.: for animal products, to be able to state that the feed is GMO free), composition and provenance of meals or origin of specific ingredients.

Both traceability and transparency are aspects of supply chain management that rely on the collaboration and information sharing among different stakeholders, showing how this aspect is key to deliver sustainability objectives.

Moreover, the quality and nutritional value of catering menus can be promoted by encouraging transparency and traceability in the food supply chain. By providing clear information on the ingredients, sourcing, and production methods of food products, catering services can better support the health and well-being of individuals, as well as contribute to a more sustainable and responsible food system.

6.4 Verification and Monitoring

The present analysis partly investigated the verification systems for criteria, which is key for clarity and transparency. This analysis also shows the importance of including clear verification systems for substantiating the criteria and conducting audits of a contract's execution.

Verification can hinge on existing labels and certification schemes ensuring the higher sustainability of products. Usually contracting authorities provide a list of accepted schemes covering a variety of aspects. However private standards may differ greatly in the requirements in the production systems or chain of custody within the scheme (Schebesta & Plana Casado, 2023).

In other cases, self-declaration from the supplier and possibility to be audited by the contracting authority are the tools for verification.

Monitoring is also an aspect which is seriously under investigated when it comes to food procurement policy (Cheng et al., 2018). There is a lack of empirical evidence, apart from a few studies centred on the effectiveness of organic procurement policy in Nordic countries (Lindström et al., 2022) or in specific case studies.

Various tools are employed for monitoring, including declarative data collection by responsible authorities or third parties, consolidation of public procurement data, inspections, and incentives through voluntary labels. However, there is a significant lack of means to assess these criteria effectively. Barriers to implementation include time **and human resource constraints, data reliability, and limited transparency** from food sector operators. Stakeholders have expressed that the most relevant control tools a priori are third-party evaluation or the use of tenders notices data. A self-declaration portal or random audits by the legislators themselves are also of interest.

Moreover, monitoring subcontracting commitments in catering services contracts also presents challenges due to the complexities of knowing the exact conditions of subcontractors, particularly regarding working conditions. Achieving a balance between comprehensive data collection and practical constraints is crucial, necessitating efficient and user-friendly evaluation tools to enhance adherence and participation in sustainable procurement initiatives. This aspect is common to any monitoring activity, and increases the complexity as increases the number of actors and stages of the supply chain are involved.

From the nutritional perspective, Austria, Germany, Finland, France, Spain, and Sweden offer guidance on monitoring and evaluating menus, nutritional quality, and dietary requirements.

Countries share some similarities in their approach to menu monitoring and nutritional requirements, including the emphasis on ensuring that meals adhere to legal nutritional requirements or guidelines, the importance of tracking the nutritional content of meals, and the use of tools and resources to assess and document the nutritional quality. Additional information is available in Annex 3, table 18.

Still, limited resources hinder implementation, and monitoring mechanisms are scarce. A lack of clarity between technical specifications and award criteria further complicates matters, and therefore further efforts are needed to better facilitate monitoring and verification aspects.

7 Main messages and concluding remarks

This report aims at providing an overarching and extensive, but by no means exhaustive, **analysis of existing criteria for sustainable public procurement**. The analysis starts from the data collection performed by Lermant et al. (2024) and is complemented with literature reviews and the assessment of sustainability hotspots. This work differs with previous work conducted in support of the development of GPP criteria for food, food services, and vending machines namely considering the inclusion of nutritional provisions in the scope of the analysis, as well as taking stock of existing provisions.

The present analysis aims at **better understanding of the current landscape**, to build a comprehensive picture understanding current criteria and possible gaps, to then support possible proposed criteria for sustainable public procurement. The analysis of the procurement criteria partly reiterates the results of previous research (Neto & Gama Caldas, 2018), especially regarding the **prevalence of environmental aspects**. These focus on organic production, energy efficiency of kitchen operations, and packaging reduction. However, criteria covering social aspects, animal welfare and to a lesser extent economic impacts can be found across the MSs. The analysis shows an **heterogeneous landscape**: a few MSs provide a comprehensive list of criteria, covering multiple aspects of sustainability, but their actual application is unclear, as the broader action plan might only require the inclusion of sustainability criteria in tenders, without being normative on which ones to include. Other MSs select fewer criteria, aligning them with other food policy objectives or introduce broader targets to be reached through public purchases.

Some cross-cutting aspects emerged from the analysis, which revealed key criteria that address multiple facets of sustainability in the food system. Such criteria introduce initiatives to encourage plant-based diets and to reduce food waste, as well as efforts to improve the transparency and traceability of the food supply chain, and to enhance verification and monitoring practices. Promoting **plant-based diets** is particularly highlighted for its multifaceted impact on sustainability. The significance of a dietary shift towards more plant-based options is increasingly recognized across Europe. Scientific research and policies support the reduction of meat consumption, as animal-based products are responsible for a large portion of the food system's environmental impacts. Studies emphasize that embracing plant-based diets is not only environmentally beneficial but also advantageous for public health, potentially reducing the prevalence of chronic diseases and healthcare costs. However, such a transition must be carefully managed to ensure nutritional adequacy, particularly with respect to essential micronutrients and nutritional needs of different target groups. Economically, this shift is expected to lower meal costs within the public food sector, which could alleviate budget constraints for public administrations while promoting health and potentially benefiting animal welfare, however more research is needed in this domain. Another relevant cross-cutting aspect is **food waste**. This critical issue intersects with environmental, social, economic, and nutritional sustainability, prompting several Member States to integrate food waste reduction targets and monitoring into public procurement policies, as these can support national and EU-wide waste reduction goals and improve resource efficiency in public settings. **Transparency** and **traceability** are also key elements of SPP, as information sharing is necessary to ensure verification and monitoring of contracts. The sustainability assessment presented in this report sheds light on the importance of **synergies** (e.g., organic might contribute to many environmental aspects at once, while promoting the local economy) and **trade-offs** (e.g. short supply chains might benefit the local or regional economy but might have negative impacts on agricultural environmental impacts due to differences in efficiency, or the need for greenhouse production).

Interesting insights would come from a more thorough investigation into the **actual uptake** of sustainability criteria and the implementation of food procurement policy at national and subnational level.

Furthermore, it could be further investigated whether **other policies and legislative initiatives** at EU level might already address what is introduced by procurement criteria. For example, the Deforestation Regulation and Corporate Due Diligence Directive could have a complementary role to procurement criteria in pushing the market towards sustainability.

Finally, it will be important to understand what the gaps are to be addressed to comprehensively contribute to the sustainability of the EU food system.

The present analysis is structured around a consistent framework based on Life cycle thinking and Life cycle assessment. This allows integrating all stages of the supply chain, different impacts and thus sustainability dimensions. The present assessment is based on a mainly qualitative exercise mapping the procurement criteria with the food system hotspots, and helps to set the stage for a further **assessment on the actual impacts on overall system sustainability**, to help public authorities to achieve sustainability objectives. Variation between products considered, geographies and supply chain organizations should also be accounted for. Other relevant factors to be considered beyond the scope of the present research include a better understanding of how to foster public procurers' capacity building, including the provision of supporting tools and training for effective implementation and evaluation of the procurement provisions.

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List of abbreviations and definitions

Abbreviations	Definitions
AT	Austria
BE	Belgium
BG	Bulgaria
CZ	Czech Republic
CY	Cyprus
DK	Denmark
DE	Germany
EU	European Union
EE	Estonia
EL	Greece
EMAS	Eco-Management and Audit Scheme
ES	Spain
FBDG	Food-Based Dietary Guidelines
FI	Finland
FR	France
GDP	Gross Domestic Product
GHG	Greenhouse gas
GPP	Green Public Procurement
HR	Human Resources
HR	Croatia
HU	Hungary

Abbreviations	Definitions
IE	Ireland
IT	Italy
ILO	International Labour Organization
LCA	Life Cycle Assessment
LCT	Life Cycle Thinking
LT	Lithuania
LtSM	Link to the subject matter
LU	Luxembourg
LV	Latvia
MEAT	Most Economically Advantageous Tender
MSs	Member States
MT	Malta
NL	Netherlands
PGI	Protected Geographical Indication
PDO	Protected Designation of Origin
PL	Poland
RO	Romania
RSPO	Roundtable on Sustainable Palm Oil
RTRS	Roundtable on Responsible Soy
SE	Sweden
SFA	Saturated Fatty Acids
SK	Slovakia

Abbreviations	Definitions
SI	Slovenia
SME	Small and Medium Enterprises
SPP	Sustainable public procurement
SSB	Sugar Sweetened Beverages
TED	Tender Electronic Database

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Annexes

Annex 1. Evaluation framework

Table 1. Evaluation framework elaborated in the scope of this report to assess sustainability hotspots of the food systems related to public procurement

Category for analysis	Subcategory	Source	Description
General aspects	**Novelty**	Own elaboration	Criteria existing in the EU GPP criteria, or new
	Geographical reference		Country/region in which the criterion has been introduced
	Type of criterion		Minimum Selection criteria, Technical Specification, Award criteria, Contract Performance Clause
	Criterion source		Piece of legislation or guideline the criteria were extracted from
	Object of procurement		Procurement of food, food services, meals, or vending machines
	Administrative context		Level at which the criterion is established
	Stated objective		Indication of mandatory or aspirational targets/ objectives linked to the criterion
	Definitions		Presence of any specific definition accompanying the criterion/provision
Legal Context	**Enforcement**	Own elaboration	Voluntary or mandatory character
	Criterion nature		Evaluation phase where the criterion is applied (if available)
	Threshold existence		Presence of a quantitative % threshold (either as a target or minimum) or qualitative (yes/no) character
	Monitoring		Existence of monitoring provisions
	Evaluation/reassessment		Inclusion of the possibility to re-evaluate the criterion
	Verification of compliance with criteria		Evaluation/assessment method of compliance with the criterion
Environmental dimension	**LCA based**		
	Climate Change	Environmental Footprint Methods (European Commission, 2021b)	Midpoint environmental impact categories as defined in the Environmental Footprint Methods
	Acidification		
	Eutrophication (terrestrial, freshwater, marine)		
	Ozone depletion		
	Human toxicity cancer		
	Human toxicity non-cancer		
	Particulate matter		
	Ionising radiation		
	Photochemical ozone formation		
	Ecotoxicity		
	Land use		
	Water Use		
	Resource use, minerals and metals		
	Resource use, fossils		
	NON-LCA based		
	Deforestation	Own elaboration	Potential deforestation linked to the offered products/services
	Soil health		Promotion of certain agricultural practices assumed to affect soil health[6]
	Biotic resource depletion		Overfishing and depletion of marine resources (either directly through fishing activity or indirectly through aquaculture)
	Microplastics		Release of microplastics in the environment

[6] See European Commission, Joint Research Centre, 2023, available at https://wikis.ec.europa.eu/display/IMAP/IMAP+Home+page

Category for analysis	Subcategory	Source	Description
	Waste production, recycling, circularity	**Better regulation (European Commission, 2021c)**	Promotion of the circular management of resources; resource efficiency and waste reduction
	Energy Use		Reference to primary energy use
	Biodiversity		Protection, conservation of species (including plant and breed diversity)
Social dimension	**Animal welfare (applicable only to animal products)**		
	Products covered	**EU Legislation**	Type of animal production covered
	Phase of animal rearing addressed	**EU Legislation**	Specific stage addressed in the production system
	Freedom considered	**WOAH**	Inclusion of any of the 5 freedoms for animal health and welfare specifically (WOAH, 1965)
	Nutritional dimension		
	Compliance with National FBDG	**Own elaboration**	Reference to National Food Based Dietary Guidelines
	Salt content		Statement on the reduced amount OR compliance with a pre-established threshold, or percentage of meals below a threshold
	Saturated fat content		The meals procured/served provide a reduced amount
	(added/) free sugars content		The meals procured/served provide a reduced amount
	Potassium		The meals procured/served expressly provide an adequate amount
	Dietary fibre		The meals procured/served expressly provide an adequate amount
	Fruits and vegetables		The meals procured/served expressly provide a certain amount/serving of F&V in a specified timeframe
	Whole grain		The meals procured/served expressly provide a certain amount/serving of WG
	Legumes		The meals procured/served expressly provide an adequate amount
	Nuts/seeds		The meals procured/served expressly provide an adequate amount
	Red meat		The meals procured/served provide a reduced amount OR alternative wording for the food groups category: meat is provided max X times in a 4-week. this alternative wording can be uses in all food group categories with a min/max
	Processed meat		The meals procured/served provide a reduced amount
	Fish		The meals procured/served expressly provide a certain amount/servings
	Dairy		The meals procured/served expressly provide a certain amount/servings The provided dairy products should be plain/unsweetened
	Water		The food service provides/encourages free access to water; preferably tap or fountain water
	Sweeteners		The meals procured/served provide a reduced amount/ban
	Sugar sweetened beverages		The meals procured/served provide a reduced amount/ban
	Alcohol		The meals procured/served provide a reduced amount/ban
	Compliance with fundamental ILO conventions - workers		
	Fundamental rights: agricultural supply chain workers	**Buying Social Guide + De Oliveira & De Souza (2023)+ Better regulation (European Commission, 2021c)**	Exclusion or selection criteria to ensure ethical labour practices along the food supply chain (including primary production); explicit mentioning (collective bargaining, forced labour, child labour, health and safety, gender equity, freedom of association, social benefits)
	Fundamental rights: food catering workers		Exclusion or selection criteria to ensure ethical labour practices in food services (collective bargaining, forced labour, child labour, health and safety, gender equity, freedom of association, social benefits)
	Consumer		
	Consumer health and safety	**Buying Social Guide + De Oliveira & De Souza (2023)**	Consumer health and safety ensured beyond current EU legislation
	Social protection and inclusion	**Better Regulation**	Degree of consumers' inclusion (i.e. improved access to affordable and sustainable food)
	Transparency		Degree of transparency in the food supply chain

Category for analysis	Subcategory	Source	Description
	Feedback	**Buying Social Guide + De Oliveira & De Souza (2023)**	Dedicated channels for communication and feedback between consumer, procurers and producers
	Community/third countries		
	Attention to cultural heritage	**Buying Social Guide + De Oliveira & De Souza (2023)**	Promotion of the intangible cultural value of food (i.e. PGI or PDO)
	Attention to indigenous groups		Procurement of food that favours indigenous knowledge and livelihoods
	Supply chain		
	Fostering supply chain relationships and stakeholder involvement	**Own elaboration**	Collaboration between different stages of the supply chain (note : this can also be addressed in the tender process)
	Supply chain organization		Reference to specific organizational aspects of a food supply chain
	Ethical trade for higher risk supply chains		Accounting for risks associated with specific supply chains (e.g. coffee, cocoa, cashews and tropical nuts, bananas, avocados)
	Reinforce commitments and monitoring of supply chain		Reference to the process of strengthening certain standards within a supply chain, as well as improving the tracking of activities throughout the supply chain
	Method to certify social aspects in the food supply chain		Identification of how social aspects in the supply chain can be verified (e.g. Fair trade or UTZ certifications)
	Address power relations in the food supply chain		Addressing power relations in the food supply chain, beyond UTP regulation
	Supply chain stages that benefit from the introduction of criteria		Identification of specific actors/groups in the supply chain expected to be positively affected by the criteria
	Supply chain stages that have a disadvantage from the introduction of criteria		Identification of actors/groups in the supply chain that might be negatively affected by the criteria
	Supply chain risk analysis		Acknowledgment that certain foods and their supply chains have more risks; a supply chain risk analysis is carried out
Economic dimension	**Fair price for consumers**	**Buying Social Guide (European Commission 2021a) + De Oliveira & De Souza (2023)**	Attention given to fair prices for final consumers
	Fair price for farmers		Attention given to fair remuneration of farmers
	Sectoral Competitiveness		Impact on competitiveness within the food sector
	Market innovation	**Buying Social Guide (European Commission 2021a) + De Oliveira & De Souza (2023)/ Better regulation (European Commission, 2021c)**	Introducing new criteria as an innovation pull, establishing a norm that is higher than the market average
	Impact on SMEs	**Better regulation (European Commission, 2021c)**	Influence on small medium enterprises' performance in the market
	Single market access		Influence on the functioning of the single market
	Security of supply		Implementation of criteria requiring an assessment of supply within the whole supply chain (including setting up a market dialogue)
	Effects on third countries		Potential effect on international trade or third countries (especially developing countries)
	Territorial impacts		Specific reference to regions and sectors

Source: own elaboration.

Annex 2. Examples of environmental and socio-economic criteria

Table1. Selected examples of environmental criteria

Aspect	Type of criterion	Number of criteria	Verification	Example
Organic production	TS, AC, T	41	Regulation (EU) 2018/848 and repealing Council Regulation (EC) No 834/2007; EU organic label and equivalent national labels	Purchase of organic products (including in conversion) (AT)
Integrated production	TS, CPC	6	Mentioning national integrated production plans; certification	Purchase of food produced under "integrated production systems" or equivalent. (IT)
Production practices for specific products, especially palm oil, soy and olive oil or other exotic products (exotic fruits)	TS, AC	4	Mass balance / book and claim models	If the product contains palm oil or palm kernel oil, it must originate from a production system that promotes the implementation of the following measures at minimum: good working conditions are guaranteed for farm workers; wild rainforests have not been cleared; endangered animal species are protected in plantation areas; the living areas and rights of local communities are protected. Book and claim model or mass balance model (FI)
Energy sources and efficiency in specific agricultural production systems, such as greenhouses	TS	2	Self-declaration from supplier	At least XX% of the greenhouse operator's heating energy is produced from renewable energy sources basic level) (FI)
Efficient water use in irrigation	TS	1	Self-declaration from supplier	The consumption and quality of irrigation and wash water are monitored. Water usage does not jeopardise water resources, both in terms of water intake and the water discharged from production (FI)
Reduction of harmful inputs	TS	2	Compliance with EU Regulation 2019/1009 on fertilizers	The cadmium content of the phosphorous fertiliser used complies with concentration requirement of <137 mg Cd/kg phosphorus (FI)
Biodiversity conservation	CPC	2	Self-declaration from supplier	The selection must include products that are produced in the primary production stage using measures that promote biodiversity and have been verified by means of audits or third party certification (FI)
Biotic resources	TS, AC	19	Certifications schemes: MSC/ASC Lists of species from IUCN	Products with ingredients of wild fish/shellfish must come from vital stocks which are maintained through a sustainable harvest where fish-and shellfish resources are not overexploited. I addition the following requirements must be met: - The structure, productivity and diversity in the ecosystem is preserved through the use of fishing gear adapted to minimize the negative effects on other species in the form of bycatches and wounded habitats. - The fishery must have an appropriately managed. This can for example be made through a management plan or other system for stock estimation and counselling which can include agreements regarding measures of the stock size diminishes. (SE)
	CPC			Ban on the purchase of species classified as "critically endangered", "endangered", "vulnerable", "near threatened" from the IUCN list (https://www.iucnredlist.org/) (IT)

Aspect	Type of criterion	Number of criteria	Verification	Example
Transport	TS, CPC	7	Compliance with EU Regulation (EC) No 715/2007 of the European Parliament and of the Council of 20 June 200	The contractor must implement a transport plan to minimise greenhouse gas and air pollutant emissions of the vehicles used in the service, taking into account route optimisation, the load transported, the last mile problem, and, if economically feasible, the technologies listed in AC4. (IE)
Resource use in food service/food processing		47	Energy star system, Energy efficiency classes	Resource-efficient kitchen appliances are used. (DE)
Waste prevention and management		9	self-declaration from supplier, provision of management plant	The excess cooking oil must be recycled in dedicated circuits (ES)
EMAS	CPC	6	ISO 14001	The candidate must demonstrate ISO 14001 certification and/or EMAS (environmental certification) for activity related to object of the contract to be concluded, or equivalent. (PT)
Consumable goods	TS, AC	7	EU Ecolabel	Requirements for the cleaning products to be used: i) Use of products produced in accordance with requirements for eco-labels and/or labelling national or European organic (e.g. EU Ecolabel), or equivalent (PT)
Packaging (reduction, type of material used)	MR, TS, AC	23	NS	Plastic packaging is to be compostable/biodegradable/ re-usable. Other sustainable alternatives which do not compromise food hygiene or food safety will also be considered. (MT)
Reusability	NS	17	NS	In order to reduce waste generation, food and beverages must be served using containers, utensils and related materials such as, but not limited to, cutlery, glassware, crockery, related accessories such as straws, stirrers and the like, and tablecloths which are re-usable. If single consumption of materials/containers is absolutely necessary for hygienic matters, then materials/containers must be biodegradable and/or compostable (MT)
Circularity	AC		NS	The candidate must demonstrate certification applicable to circular economy management practices for the related activity with the object of the contract to be concluded (PT)

AC: award criterion, TS: Technical Specification, MR: Minimum Requirement, CPC: Contract Performance Clause, T: Target

Source: own elaboration.

Table 2. Selected examples of socio-economic criteria

Aspect	Type of criterion	Number of criteria	Verification	Example
Fair and ethical trade	TS, AC, CPC	9	Labels and certification; transparency	Sugar, coffee, chocolate and tea must be wholly or partially organic and fair trade (PT).
Workers' rights, protection and inclusion (ag workers)	CPC	20	Value chain organization, transparency	Administration, for the portion of food products that may not be organic or otherwise qualified, of products from companies that practice social agriculture referred to in law 18 August 2018, n. 41 and/or companies registered in the quality agricultural work network (IT).
Compliance with national and international regulations (governance)	TS, CPC	2	NS	Sustainable aquaculture • The farmed fish/fish product must be farmed in a manner that takes into account at least three of the following considerations: • The aquaculture operations comply with local and national laws. • If more than 1% of the raw materials used in fish feed come from wild-caught fish, it must be traceable. Records are kept of the use of antibiotics. • Soya used in feed is responsibly produced (FI).
Working conditions (food service workers)	TS or not specified	2	NS	Ergonomic workplaces and workflows are in place. This includes, for example, back-friendly working heights, heat and noise protection as well as variety in tasks. Ergonomic workplaces and work processes maintain health, performance and satisfaction of employees (DE).
Training	CPC	8	NS	Carrying out a minimum of one worker training activity per year and raising awareness among customers with a view to preventing food waste (PT).
Inclusivity	Not specified	5	Unclear	Special menus for cultural, ethical or religious reasons will be made available if no option offered is compatible (ES).
Support to family farming	TS	2	List of producers enrolled in the system	Food products from farms of farmers holding the "Family Farming Statute", or Equivalent (PT).
Fair Price	TS	1	NS	The producer is paid a price that covers the costs of sustainable production including a wage level that complies with laws and progressively moves towards a living wage, safe working conditions, and the right to join a trade union (FI)
Support to local and regional production	TS, AC, CPC, Target	13	NS	Food procured from the region - Support of the project "Austria eats regional" (AT).
Quality production	AC	5	List of allowed schemes	Additional points can be awarded for food that comes from quality assurance systems that are recognized by the EU and for which controls are carried out by independent bodies (AT).
Innovation	CPC	1	Self-declaration from supplier	The contracting should consider formulating an award criterion with which your own (innovative) sustainable ideas can lead to a higher rating (NL).
LCC	CPC	1	NS	During tender evaluation, the cost-efficiency of the offered refrigerators and freezers will be assessed by applying the enclosed life-cycle cost tool (LCC tool). (SE).
Continuous improvement	CPC	1	NS	

AC: award criterion, TS: Technical Specification, MR: Minimum Requirement, CPC: Contract Performance Clause, T: Target. Source: own elaboration.

Table 3. Selected examples of animal welfare criteria

Aspect	Type of criterion	Number of criteria	Verification	Example and adopted country
Feed	TS, AC	12	Traceability & self- declaration	GMO free feed for animals (pork, beef and meat preparations) (AT).
Housing/husbandry system	TS, AC	37	Animal welfare label; organic label	Chicken and turkeys: stocking density for broilers max 39 kg/m2 for turkeys max 40 kg/m2 (AT).
				Meat and milk products must be derived from animals that have been able to graze or otherwise have access to the outdoors for a continuous period of at least two months per year during the grazing season as defined in the country of production (SE).
Medication and veterinary treatments	TS, AC	4	Traceability	Animal products come from farm that are members of a recognized animal health service (AT).
Transport	TS, AC	5	Compliance with other legislation	When transporting chickens, turkeys and hens to slaughter, drivers and individuals responsible for loading and unloading shall have completed training on the transportation of poultry in accordance with the minimum requirements laid down in Annex IV to Regulation (EC) No 1/2005. This requirement covers all transport operations, regardless of transport time (SE).
Stunning and slaughter	TS, AC	5	NS	Pork: Pigs destined for slaughter must be stunned before blood draining begins and should remain unconscious and insensate until their death (FI).
Traceability requirements	CPC	4	NS	Documentation shall be available throughout the contract period for chicken and turkey raw material, showing that the raw material has been produced taking into account preventive health parameters for animal welfare (SE).

AC: award criterion, TS: Technical Specification, MR: Minimum Requirement, CPC: Contract Performance Clause, T: Target

Source: own elaboration

Annex 3. Examples of nutritional criteria

Table 1. Special Diets Criteria in 14 Member States

Countries	Summary for eating considerations
AT	Schools: vegetarian All settings: vegan/vegetarian
CZ	Lacto-ovo-vegetarian meals can be chosen if all legal guardians of minors or adults agree, or by catering services offering meal options
DE	Ovo-lacto-vegetarian options and religious eating considerations are provided daily for all meals.
EE	Availability of special menus for health reasons , cultural, ethical or religious reasons
ES	Availability of special menus for health reasons , cultural, ethical or religious reasons
FI	Offer two main course options, one being vegetarian Providing vegetarian choices can increase their popularity and attendance at school meals. Serve a vegetarian meal at least once a week, with two different vegetarian dishes available on that day. School catering typically provides lacto-ovo-vegetarian diets. Use vegetarian meal names to teach pupils about new raw materials and encourage trying new dishes.
FR	Not mentioned
GR	Not mentioned
HU	For patients in hospitals, staff needs to allow it
IT	Special diets must be formulated by experienced medical professionals to ensure nutritional and educational adequacy in school menus
LV	Vegetarian menus can be provided for all ages. For those under 18, a legal representative must submit a written application.
PL	Not mentioned
SE	Daily school lunch includes a vegetarian option
SI	Not mentioned

Source: own elaboration.

Table 2. Salt Criteria in 14 Member States

Countries	Foods with specified max salt content	Summary
AT	Nuts and seeds, unsalted	Only salt criteria are mentioned for unsalted nuts and seeds in schools
CZ	Max salt content per 100g: Bread: 1.8g salt Pastry: 1.3g salt Milk and fermented or fermented milk products: 0.5g salt Curds: 0.5g salt Cheese: 2.5g salt Processed fruits and vegetables: 0.5g salt Dry nuts, oilseeds, legumes, and products: no added salt Other food: 1g salt	Salt criteria specify the maximum salt content for some foods

Countries	Foods with specified max salt content	Summary
	Packed and unpacked bakery products: 2.5g salt	
DE	Nuts and seeds, unsalted	General recommendations: Using iodised salt and consuming foods with low salt content. Schools (ages 7-10 and 10-19) & Adults (ages 19-65): Breakfast and snacks should include at least 2 portions of unsalted nuts or oilseeds/5 days Adults in clinics (ages 51-65, PAL 1.2 and 1.4): Mixed diets should include at least 3 portions of unsalted nuts and seeds over 7 days. Elderly (65+, PAL 1.2 and 1.4): Full catering should include 3 portions of unsalted nuts and seeds over 7 days. Amount: Children: max 3 to 6 g per day, depending on age Adults including elderly: max 6g per day
EE	No	For kindergarten and school children, max amounts of sodium per lunch (only for schools) and per day are provided. Amount: Kindergarten: max 0.88 - 1.26 g sodium/d Schools: max 1.56 - 2.2 g/d of sodium AND max 0.51 - 0.71 g/LUNCH of sodium (calculated based on 32.5% of energy demand)
ES	Nuts, natural or with no added salt	In schools, salt is used sparingly, should be iodised, and replaced by spices if possible. The use of broth concentrates and other flavour enhancers is avoided.
FI	Max salt content/100g: Bread: 0.7 g in crisp bread and 1.2 g in soft bread. Cheese products: 1.2 g. Meat products: 2.1 g. Fish and aquaculture products: 2.1 g, provided there's a minimum of 50 g of meat in 100 g of the finished product. Main dishes (including sauces, casseroles, risotto, pasta, salads, pizza): 0.9 g. Soups and porridges: 0.5 g for porridges and 0.5-0.7 g for soups. Side dishes (e.g., pasta, barley groats, rice grain mixes, whole grain rice, boiled potatoes): 0.3 g. Other meal components (e.g., soft bread, crispbread, margarine, vegetable side dishes, salad dressing): 0 to 1 g depending on the specific component.	To reduce salt intake, low-salt products should replace high-salt ones, and iodised salt should be used. Meal components and dishes should have limited salt content, with specific maximums for different types of foods. Bread, cheese, and meat products should be lower in salt, and high-salt snacks and pickled vegetables should be avoided. Monitoring salt content in recipes and menu planning is essential. For the elderly, iodised salt is recommended, and a moderate salt level should be maintained with diverse spices, herbs, and vegetables. A basic diet for diabetics should also be low in salt. Amount: Maximum daily salt intake of one teaspoon (5 g) for adults and 3-4 g for children up to ten years.
FR	No	To limit salt consumption Prefer iodized salt. Do not re-salt before eating. Reduce the addition of salt in cooking water Limit cheeses, the most salty meats and salty aperitifs. Amount: Children (does not specify age): 6.5 g/d Adults: 8 g/day for adult men AND 6.5 g/day for adult women

Countries	Foods with specified max salt content	Summary
GR	Wholegrain simple bakery products or cereal bars: Sodium up to 0.5% Nuts: unsalted Plain biscuits, without filling, in indiv. pack.(up to 60 g), sodium not to exceed 0,5 g For sandwiches use of cold cuts is prohibited, except from boiled turkey, with sodium up to 1%	Salt criteria specify the maximum salt content for some foods No added salt in salads of fresh well washed vegetables prepared in canteens. For pizza slices (bakery product), salt is allowed.
HU	No	The following foods should not be used in public catering: salt food powders, salt soup cubes, salt food flavouring creams, pastes for uses other than stock improvement or food flavouring. Amount: Max g salt/d: 1-3 years: All-day: 2-5 g Kindergarten: 1.5-4 g 1 meal: 1 g 4-6 years: All-day: 3-7 g 3 meals: 2-5.5 g 1 meal: 1-3 g 7-14 years: All-day: 5-10 g 3 meals: 3.5-6.6 g 1 meal: 2-4 g 15-69 years: All-day: 5-12 g 3 meals: 3.5-7.9 g 1 meal: 2-4.3 g A warning label about the health risks of excessive salt consumption should be displayed at sales or delivery points.
IT	No	Each meal should contain (…) bread with limited salt content For seasoning: salt should be used moderately and should always be iodised.
LV	Max grams salt/100g or ml: Meat products: <1.25g Processed fishery products: <1.5g Salt in finished meals: <0.4g Mayonnaise: 1g Ketchup/tomato sauce: 1g Nuts and seeds, unsalted Milk-based products: 1g Crisp bread, rusks: 1.25g Bread: 1.25g Minced meat <0.4 g	Guidelines for max salt content in food products and for max food intake for different age groups No broth in dishes; no salt-sugar mixture spices Amount: Grams of salt: Pre-school (12 h/d): <2g. Pre-school (24 h): <3g/d. Schools: <5g/day.
PL	Max grams salt/sodium/100g or ml Fruits, vegetables, and fruit-vegetable pastes and mousses: No added salt	Guidelines for max salt/sodium content in some foods

Countries	Foods with specified max salt content	Summary
	Yoghurts, kefir, buttermilk, curdled milk, acidophilus milk, flavoured milk, whey, curd cheese, homogenized cheese, soy, rice, oats, nut or almond products: 0.4 g of sodium / 1 g of salt Milk or dairy products: 0.4 g of sodium / 1 g of salt in 100 g/ml Milk-substitute drinks: 0.4 g of sodium / 1 g of salt in 100 g/ml Dried fruits & vegs, unsalted Nuts and seeds, unsalted Breakfast cereal products and other cereal products: 0.4 g of sodium / 1 g of salt in 100 g	
SE	No	Age-specific reference values for salt content in an average school lunch, with 30% of the RDI according to the NNR 2012. These values serve as a guideline and long-term target, as it may be challenging to achieve due to the current salt content in food products. Choose foods with less salt (e.g. foods that fulfil the Keyhole criteria), and use little salt when cooking. The salt used should be iodised. Amount: Max g salt/30% of RDI: - 6-9 years: 1,2 g -10-18 years: 1,8 g
SI	No	Important to accustom young individuals to a moderate salt consumption. Iodized salt should be used. For higher grades of elementary schools and high school students, spices should be used instead of large amounts of salt. To limit excessively salty products To gradually adjust to the recommended salt values, herbs, spices, onion, pepper, celery, garlic powder, lemon juice, and mustard can be used as substitutes to improve the taste of dishes. When selecting foods, prioritize those with lower sodium/salt content. Amount: Max g salt/d: Children: 4g Adolescents: 6g

Abbreviations: physical activity level (PAL); Recommended Dietary Intake (RDI)

Source: own elaboration.

Table 3. Fat Criteria in 14 Member States

Countries	Foods with specified maximum fat content	Summary
AT	No	Recommends low fat diet/foods: Yes, low-fat preparation methods Recommendations by type of fat: No Oils: Prefer veg oil, prefer rapeseed oil Amounts: not mentioned
CZ	Max g of total fat/100 g/ml: Bread: 10g fat Pastry: 15g fat	Recommends low fat diet/foods: it sets limits on the fat content of some foods, but it does not explicitly recommend limiting the total amount of fat. Low fat food preparation methods, not mentioned.

Countries	Foods with specified maximum fat content	Summary
	Milk and fermented or fermented milk products (per 100ml): 5g fat Curds: 10g fat Cheese: 30g fat Egg products: maximum 15% fat Products of fishery and aquaculture: maximum 30% fat Meat products: maximum 15% fat Other food: 5g fat Packed and unpackaged bakery products: 20g fat	Recommendations by type of fat: yes, but in general, without mentioning amounts. Foods with TFA derived from partially hydrogenated fats not allowed. Oils: increase the proportion of vegetable fats. Amounts: Nutritional standards for schools meals (it doesn't mentioned if it is max or min), total fat: - 3-6 years old: 17g for breakfast, lunch, snack or 25g / day - 7-10 years old: 12g for lunch or 35g /day - 11-14 years old: 15g for lunch or 36g / day - 15-18 years old: 17g for lunch or 35g / day (amount for lactovegetarian diets also given) Guidelines for max total fat content in some foods
DE	% of total fat: Milk, plain yoghurt, buttermilk, sour milk, kefir: max. fat content 3.8% Quark: max. fat content 5% Cheese: max. fat content 30% Meat and cold cuts as bread topping: max. fat content 20%	Recommends low fat diet/foods: Fat is used consciously Recommendations by type of fat: Products with a low content of fat and saturated fatty acids are selected Low fat food preparation methods: YES, low fried foods (from general sheet). Nutrient-preserving and low-fat cooking methods are used Oils: Rapeseed oil is a standard oil. Products without palm (kernel) fat, palm (kernel) oil or coconut fat AND walnut-, linseed-, soybean-, olive oil, are preferred Amounts per WEEK (5 days for schools and companies, 7 days for clinics and elderly) : - school lunch, 5 catering days: Primary pupils aprox. 30g of total fat; secondary pupils, aprox. 30-40g of total fat - adults company lunch, 5 catering days: 60 g of total fat - Clinics, full day catering (51-65 age range): varies depending on PAL & vegetarian diets, and ranges from 170g to 220g of total fat weekly - Older adults in care facilities, by full day & lunch catering: varies depending on PAL & vegetarian diets, and ranges from 120g to 140g of total fat weekly for full day catering Guidelines for max total fat content in some foods
EE	No	Recommends low fat diet/foods: No. Low fat food preparation methods, not mentioned. Recommendations by type of fat: Yes, info for total fat, MUFAs, PUFAs and cholesterol also provided. Oils: not mentioned. Amounts: Kindergarten & school: 1 to 19 years old: <10%E/d from SFA and TFA, 12.5% MUFAs, 7.5% PUFAs
ES	Nuts, natural or with no added fat	Recommends low fat diet/foods: No. Low fat food preparation methods, not mentioned. Recommendations by type of fat: No Oils: Virgin olive oil for seasoning, olive oil and high oleic sunflower oil for frying and cooking. Amounts: No
FI	Max grams of total, SFA, & TFA per 100g/ml, or %: Porridges: 3g fat, 1g SFA	Recommends low fat diet/foods: Saturated fat should be avoided, low fat baked products recommended, replace high-fat dairy

Countries	Foods with specified maximum fat content	Summary
	Soups: 3g fat, 1g SFA; For fish soups: 5g fat, 1.5g SFA Casseroles, Risotto, Pasta, Salads, Pizza: 5g fat, 2g SFA; For certain variations: 7g fat, 2g SFA Sauces (e.g., Beef Stroganoff, Chicken Sauce): 9g fat, 3.5g SFA; For certain variations: 11g fat, 3.5g SFA Unit Foods (e.g., Fish Fingers, Meatballs, Spinach Patties): 8g fat, 3g SFA; For certain variations: 12g fat, 3.5g SFA Pasta, Barley Groats, Rice Grain Mixes, Whole Grain Rice: No specific fat, 0.7g SFA Boiled Potatoes (no added fat): No specific fat, 0.7g SFA Other Potato Dishes: No specific fat, 0.7g SFA Margarine: Min 60% fat, max 30% SFA Milk/Buttermilk: 0.5% fat Vegetable Side Dish with Uncooked or Cooked Vegetables: 20% of fat can be SFA & TFA Salad Dressing: Min 25% fat, 20% SFA Cheese Products: 17% fat	products with fat-free or low-fat products. Recommend using low fat food preparation methods Recommendations by type of fat: Yes, and at least 2/3 of the fat in school meals must be unsaturated fat Oils: Replace butter and butter-based spreads with vegetable margarine or oil. Vegetable oil, a fluid vegetable oil product, or margarine with a fat content of at least 60% should be used as cooking fat. Rapeseed oil is preferred. For salads, an oil-based dressing or just vegetable oil is recommended Amounts: Weekly School Meals: Fat should be 30-40% of energy, with SFA <10% Average Nutritional Content of Meals for Older Adults: SFA <10% of energy, <1/3 of total fat, PUFA 5-10% of energy, Essential Fatty Acids 3%. Guidelines for max total and SFA fat content in some foods
FR	Schools, % of total fat: On the basis of 20 successive meals, no more than 4 desserts made from sweet products and containing less than 15% fat.	Recommends low fat diet/foods: Yes, to reduce fat intake and to use low fat preparation methods Recommendations by type of fat: to rebalance lipid consumption, to reduce the consumption of SFA. The ratio of essential polyunsaturated fatty acids omega-6/omega-3 should be balanced by increasing the intake of omega-3 - Saturated Fats: Limit the intake of foods high in saturated fats. Foods such as butter, cream, and fatty meats should be consumed in moderation. - Trans Fats: Avoid trans fats as much as possible. These are often found in processed foods and some margarines. - Unsaturated Fats: Encourage the use of unsaturated fats, particularly monounsaturated and polyunsaturated fats, which are found in oils like olive oil and in nuts and seeds. Oils: Preferred Oils: Mixtures containing at least rapeseed (majority) and sunflower (minority) are recommended Avoid palm or copra fat due to its high saturated fatty acid content. Pay attention to the content of SFA and TFA in margarines and fat-based preparations used for consumption or cooking. Amounts: TFA < 2 % of the total energy SFA <12 % of total energy Except for infants and children in EASPE (specialized nutritional support), to reduce the energy intake from fats (ideally to 35 to 40% of the energy intake)
GR	Max % of fat: Wholegrain bakery products (indiv. Pack .up to 50 g) or cereal bars (indiv. pack. up to 40 g): saturated fats up to 3g and trans fats up to 0.1g Plain biscuits, without filling, in indiv. pack.(up to 60 g): saturated fats up to 5g and total fats 10g Simple bakery products (indiv. pack. up to 50 g) and pre-packed sandwiches and toasts: trans fats up to 2% of total fats	Recommends low fat diet/foods: Use low-fat or reduced-fat food options when possible. Low fat food preparation methods, not mentioned. Limit the intake of saturated and trans fats. Recommendations by type of fat: No Oils: only olive oil addition to salads is allowed. Opt for plant-based fats (e.g., olive oil, margarine, and plant oils) instead of animal-based fats. Amounts: No, but gives max amounts for certain foods. Guidelines for max fat content in some foods.

Countries	Foods with specified maximum fat content	Summary
	Pre-packed sandwiches and toasts: trans fats up to 2% of total fats, no butter or margarine, and no mayonnaise Cold cuts for sandwiches: prohibited, except for boiled turkey with saturated fat up to 1%. Olive oil is the only allowed oily substance Pies: fatty substance for the leaf dough should be exclusively from olive oil, margarine, or plant oils, with the final product not exceeding 30% total fats and 0,1% trans fats Packaged milk: full or semi-skimmed (1.5-1.8% fats). Low-fat milk is recom. Packaged yogurt: up to 5% fat, up to 200 g pack. Low-fat yogurt is recom. Low-fat chocolate milk: up to 1.8% fat, up to 250 ml pack. Deserts of cream and ricemilk pudding: up to 4% milk fat, 150 gr individual package.	
HU	% of total fat: 1-3 years old: Milk with 2.8% to 3.6% fat. Meat > 30% not allowed Meat products: < 23% fat Any product >23% fat not allowed >3 years old: Milk with 2.8% fat or less	Recommends low fat diet/foods: No, but max of 30% of total E from fat in kindergartens. Low fat food preparation methods, not mentioned. Recommendations by type of fat: No. But they mention recommendations for different types of fat products (e.g. margarine, butter). Oils: Avoid coconut and palm oil for baking and cooking. Amounts: only for fats added to sandwiches, cooking and dressings, by age group.
IT		Recommends low fat diet/foods: No, Low fat food preparation methods, not mentioned. Recommendations by type of fat: Yes Oils: Extra virgin olive oil must be used for seasoning, butter may be used for a few recipes. Amounts: Yes, 30% of total energy from total fat. Kindergarten: 15-21g of total fat per lunch of which 5-7g saturated fat. Elementary school: 18-27g per lunch of which 6-9g saturated fat Secondary school: 23-28g per lunch of which 8-9g saturated fat
LV	% of total fat for: Milk and fermented milk products: 2.5% Curds: 5% Butter with AT LEAST 80% fat content	Recommends low fat diet/foods: it sets limits on the fat content of dairy products, but it doesn't explicitly recommend to limit the total amount of fat. Low fat food preparation methods recommended. Recommendations by type of fat: No Oils: Only margarine without partially hydrogenated vegetable fats is allowed for making a dish. Fried potatoes, potato crinkles, and similar cooked food items are not permitted. Amounts: No
PL	Max g of total fat/100 g/ml: Bread, semi-confectionery, and confectionery bread: 10 g Yoghurts, kefir, buttermilk, curdled milk, acidophilus milk, flavoured milk, whey, curd cheese, homogenized cheese, products based on soy, rice, oats, nuts, or almonds: 10 g	Recommends low fat diet/foods: it sets limits on the fat content of certain foods, but it doesn't explicitly recommend to limit the total amount of fat. Low fat food preparation methods recommended, as there is a limitation in number of fried food/w. Recommendations by type of fat: No Oils refined vegetables oil be used for frying, with the content of MUFA above 50% and with the content of PUFA below 40% Amounts: No

Countries	Foods with specified maximum fat content	Summary
	Milk or dairy products, milk-substitute drinks: 10 g of Breakfast cereal products and other cereal products: 10g	
SE		Schools: Recommends low fat diet/foods: No, but recommends low fat dairy products. Low fat food preparation methods, not mentioned. Recommendations by type of fat: Yes, and to reduce saturated fat intake Oils: No Amounts: Yes, age-specific reference values for fat content in an average school lunch, corresponding to 30% of the RDI according to the NNR 2012. Total fat (25-40 E%), PUFA (5-10 E%), SFA (max 10 E%), TFA as low as possible. It also gives grams of intake for 4 age groups (6-9, 10-12, 13-15, 16-18 yrs.)
SI	No	Recommends low fat diet/foods: No, but recommends low fat dairy products. Low fat food preparation methods, not mentioned. Recommendations by type of fat: Yes Oils: recommend to use high quality vegetable oils for cooking. Amounts: Yes, per age group and per meal category (breakfast, lunch etc.), including combinations of number of meals or snacks eaten at school (further details in green table) - max 30 - 40% total E from total fat for children 1-4yrs, 30 to 35% for children 4-14, and between 20- 30% for older children - 2/3 total fat from PUFAs and MUFAs, up to 20% of total E - PUFAs should be about 7% of daily E intake, max 10%, with ω3 at least 2.5% of daily E. - MUFAS should be the majority of UFA intake, especially as oleic acid, recommended intake is >10% of daily E intake. - SFAs max 1/3 of total fat intake, <10% of daily E intake. - TFAs < 1% of daily E intake

Source: own elaboration.

Table 4. Free Sugars Criteria in 14 Member States

Countries	Foods with specified maximum sugar content	Summary
AT		Kindergartens and schools are advised to use low-sugar preparation methods. They should also provide water and unsweetened fruit infusions, and prefer unsweetened nuts and seeds. Sweet main courses AND desserts: max 4x, always containing milk/dairy and/or fruits.
CZ	Max g of sugar/100 g/ml: Bread: 5g Regular pastries: 5g Pastry: 20g Milk and fermented or fermented milk products: 11g Curds: 11g	Guidelines for max sugar in some foods "Nutritional standards for schools meals (it doesn't mentioned if it is max or min), free sugars - 3 to 18 yrs: from 40g to 65 g/d depending on age Nutritional standards for schools meals/lactovegetarians also provided In schools and educational facilities, it is possible to sell or advertise: Fruit and vegetable juices and nectars.

Countries	Foods with specified maximum sugar content	Summary
	Processed fruits and vegetables: no added sugar, max 0.5g salt per 10g Dry nuts, oilseeds, legumes: no added salt or sugar Other food: 10g Packed and unpacked bakery products: 10g	
DE		To limit the intake of added sugars, sugar is used sparingly To prefer low-sugar options for convenience foods, dairy products, and beverages The addition of sugar and alternative sweeteners like honey or fruit syrups should therefore be kept to a minimum. To get used to a less sweet taste, a gradual reduction in recipes is recommended. List of foods without added sugar given No added sugar to: Grain, grain products, and potatoes, fresh or frozen fruits, nuts and oilseeds, Dairy products Adults & elderly: One portion may be offered daily as vegetable juice or smoothie. Fruit juice drinks, nectars, fruit juices and mixed milk drinks are not suitable thirst quenchers.
EE		kindergarten & schools: <10% total E from sugar
ES		Vending machines and cafeteria: max 10 % of total E from added or free sugars (max 5 g of added or free sugars per packaged portion). This limit shall not apply to fruit, veg and dairy products containing no added sugars Nuts without sugar Opt for Natural fruit juices
FI	- Sugar content in yoghurt and curd: ≤ 10g/100g of the product - Curd milk: ≤ 12g/100g of the product	Vending machines - soft drinks, juices or other products that contain a high level of ...salt, are not suitable snacks in the school environment. selling such products from vending machines, kiosks, canteens run by pupils or school restaurant is not appropriate Sugary products are not necessary for celebrations at school Avoid selling sweets, soft drinks, or juices with added sugar to ensure students consume complete school meals. Use added sugar in small amounts when preparing foods to moderate acidity or bitterness in foods made from berries. Avoid serving products with added sugar or acidified beverages with added sugar in the school. Unsweetened juices can be offered occasionally. Pickled vegetables are not a substitute for fresh vegetables due to their added sugar and strong flavour. Choose unsweetened and low sugar dairy products. Naturally occurring sugar no need not be avoided. Limit excessive and frequent consumption of sweets Guidelines for max sugar in some foods Nuts, almonds, and seeds, without sugar Elderly: Offer fortified plant-based drinks or 100% fruit juice instead of water for added energy in elderly diets.
FR		To avoid pastries, chocolate bars, filled biscuits, filled cereals, spreads, and pastries with high sugar content. The consumption of fruit in syrup and compotes with added simple carbohydrates should be limited to occasional use, particularly for children under the age of 1

Countries	Foods with specified maximum sugar content	Summary
		Serve 100% raw fruits desserts with no added sugar frequently to schoolchildren, adolescents, and adults. Include high-quality fruit juices (100% fruit, no added sugar) for schoolchildren, teenagers, and adults (except adults in prisons). Serve no more than 4 desserts made from sweet products/20 meals Max grams of sugar for breakfast given by age groups, 10 to 30g
GR	Plain biscuits (≤ 60 g): sugar ≤ 10 g/100g	List of foods without added sugar or with max amount of sugar given Soft drinks, chewing gums, or lollipops not allowed Individual honey portions allowed as dessert (quantity not mentioned) Sweet sandwiches with 1 soup spoon of honey permitted No added sugar to: - Packaged natural fruits juices: - Dried fruits and nuts - canteen-prepared natural fruits/vegetables juices/fruit salads - Fresh milk and 100% fresh fruit beverages made in canteens - Plain yoghurt - Infusions in secondary school canteens No sweeteners in natural fruit or vegetable juices
HU		Added sugar content in food should not exceed 10% of daily energy intake over ten days. Sugar guidelines for tea by age groups (1-15+): max 5 to 10g/portion Honey guidelines by age groups: max 10 to 30g/portion A warning label about the health risks of excessive salt and sugar consumption should be displayed at sales or delivery points. Feeding standard per portion per person by age group: max 5-30 g Sweets should not be given as stand-alone meals Only sweets containing at least 1/3 fruits or 1/3 milk/dairy products can be given as other meals. No added sugar in flavoured milk products or milk drinks. Age specific portion sizes for bread, cakes, pastry, cereal bar are given Fruit juice and vegetable juice: 100-200ml per portion
IT		Of which simple sugars (g) Pre-school: 11-24 grams Primary school: 13-30 grams Upper secondary school: 18-31 grams For vending machines (limited only to high school): "The choice should be directed towards healthy products such as low- energy food and beverages such as fruit, yoghurt, added sugar-free fruit juices.""
LV		No mixtures of spices containing sugar allowed. Pre-school guidelines, max added sugar per serving: 11g/12h, 20g/24h School guidelines: Max 10g added sugar per lunch meal and max 25g per day. Honey can also be provided in schools. Hospital guidelines: Max 30g added sugar per day or 11g for lunch, with 15g for children under 6 years old Fruit and Vegetable Juices: Must have no added sugar
PL	Drinks, max 10g sugar/250ml	No added sugar or sweeteners to:

Countries	Foods with specified maximum sugar content	Summary
	Bread, semi-confectionery, and confectionery bread: 15g sugar/100g Yoghurt, kefir, and buttermilk products: max 13.5g sugar/100g/ml Milk substitutes max 15g sugar/100ml	Fruits, vegetables, and milk-based cocktails. Chewing gums. Fruit, vegetable, and fruit-vegetable paste or mousse. Dried vegetables. Nuts and seeds. Dried fruit Fruit juices are allowed
SE		For School-aged children: Avoid serving high-sugar foods like fruit syrups, soft drinks, sweets, ice cream, and cookies. Sugar should be kept to a minimum. Offer healthier options such as sandwiches, yoghurt, milk, fortified vegetable drinks, fruit, vegetables, and smoothies. No sweet drinks, sweets, ice cream, pastries, or unhealthy snacks should be provided. Opt for unsweetened products. Choose foods with the Keyhole symbol (Swedish Food Agency's healthy choice label) for less sugar
SI		Limit simple sugars to no more than 10% of daily energy intake. Opt. for lower sugar foods. For young children, use plain yogurt and add fresh fruit instead of fruit yogurts with added sugar. Choose composites with less sugar or prepare them yourself. Sweeten homemade desserts with honey instead of refined white sugar. Avoid fruit drinks with added sugar and high fruit proportions. For higher elementary and high school students: Offer fruit juices diluted with water for drinking.

Source: own elaboration

Table 5. Potassium Criteria in 14 Member States

Countries	Summary
AT	Not mentioned
CZ	Not mentioned
DE	Not mentioned
EE	kindergarten: 1600 and 1850 mg/d of potassium in children from 1 -7 y Schools: Between 2000 and 3300 mg/d of potassium AND 650 and 1070 mg/LUNCH of potassium in children from 7-19 y (calculated based on 32.5% of energy demand)
ES	Not mentioned
FI	It is not about potassium consumption
FR	Not mentioned
GR	Not mentioned
HU	Not mentioned
IT	Not mentioned
LV	Not mentioned

Countries	Summary
PL	Not mentioned
SE	Not mentioned
SI	Not mentioned

Source: own elaboration.

Table 6. Dietary fibre Criteria in 14 Member States

Countries	Foods with specified fibre content	Summary
AT		Not mentioned
CZ		Not mentioned
DE		Not mentioned
EE		Amount: Kindergarten, depending on age: 7 to 11 g/d of fibre. Schools, depending on age: 14 to 22 g/d AND 4.6 and 7.1 g/LUNCH (calculated based on 32.5% of energy demand)
ES		Not mentioned
FI	Min grams of fibre/100g: Bread: 6g Crispbread 10g For main dishes, porridges, and flakes: 6g For side dishes: pasta, barley oats, and rice grain mixes: 6g whole grain rice: 4g For elderly individuals, whole grain rice side dishes: 3g	Replace low fibre grains with whole grains. A good breakfast or snack should include products rich in fibre. For elderly population: A high proportion of cereal products and vegetables is essential for adequate fibre intake High-fibre alternatives should be prioritized Texture-modified meals should contain fibre according to recommendations, and individual use of fibre supplements should be considered. Amount: The recommended daily fibre intake for older adults is 25g for women and 35g for men.
FR		To increase the consumption of fruits, vegetables, potatoes, cereals, and legumes to ensure adequate intake of fiber.
GR		Wholegrain simple bakery products (packages up to 50 g) rich in fibre are allowed
HU		Not mentioned
IT		Amounts: Kindergarten: 5g per lunch Elementary school: 6g per lunch Secondary school: 7,5g per lunch
LV	Bread: min 5g fibre/100g	
PL		Not mentioned
SE		Serve vegetables or fruits at every school meal, with a variety of at least five components daily, including at least three fibre-rich vegetables, one legume, and one salad vegetable or fruit. Select products with the Keyhole symbol, as it indicates foods with higher fibre. Age-specific grams fibre/lunch, corresponding to 30% of the RDI according to the NNR 2012:

Countries	Foods with specified fibre content	Summary
		6-9 years: 6g of fibre 10-12 years: 8g of fibre 13-15 years: 9g of fibre 16-18 years: 10g of fibre
SI		Daily, fibre should represent 10g/1000>kcal(4.18MJ) of E. Min grams fibre/d by age groups: 1-3 years : >12 4-6 years: >15 7-9 years:>19 10-12 years: >23 13-14 years:>26 15-18 years : >28 - Carbohydrate foods that contain ...dietary fibre are recommended.

Source: own elaboration.

Table 7. Whole grain Criteria in 14 Member States

Countries	Foods with specified fibre content	Summary
AT		Kindergardens & schools: at least 4x/20 wholegrains Prefer wholegrains, mix regular with whole meal flour.
CZ	Not mentioned	Not mentioned
DE		Aim for wholemeal products, pseudocereals, muesli without sugar/sweeteners. Recommended amounts in grams of grains, grain products & potatoes/meal or per day given; half of the offered amounts have to be wholegrain School and adults (companies): lunch min 1 x wholegrains per week For adults in clinics and elderly, in 7 catering days, min 14 x wholegrains
EE	Not mentioned	Kindergarten & schools: It is recommended to use pasta and other cereals made from wholemeal flour
ES	Not mentioned	It will be verified that school menus offer wholemeal bread and whole grain varieties of pasta or rice at least once a week. The use of whole grain varieties (pasta, rice, bread, etc.) will be promoted
FI	Not mentioned	Replace low-fibre grains with whole grains Whole grain bread daily to be offered daily Whole grain porridges for breakfast Prefer whole grain products for snacks. Whole grain pasta, barley, porridge, and dark rice, either as side dishes or integrated into main dishes. Opt for whole grain alternatives instead of refined cereal products.
FR		Wholegrains are recommended, but be cautious introducing them to young children as they may cause stomach issues.
GR	Not mentioned	Wholegrain simple bakery products are allowed For sandwitches/toasts, all types of bread, wholegrain, fibre-rich or white are allowed. Whole grain bread is recommended Wholegrain cereal bars are allowed

HU	Not mentioned	wholemeal bread intake for dif age groups (1-15+ yrs), ranging from 20-100g per portion 1-15+ years old Whole grain based foods per 10 catering days: - All-day catering: min 10x - Kindergartens: min 5x - Three times a day catering service: min 10x- One meal a day service: at least three times 3 portions of cereals per day, at least 1 wholegrains Meals in creches and mini-creches: 2x cereal/d, at least 1x whole grain every two days It is recommended to use whole grain cereal products For all day meals per person: 3 portions of cereal-based food, at least one portion of which one must be whole grain
IT		Not mentioned
LV	Not mentioned	Wholegrain options should be included daily
PL		Not mentioned
SE	Not mentioned	Schools: Switch to whole grains. Replace white flour with wholegrain flour. The Keyhole is the Swedish Food Agency's symbol found on foods that contain more fibre and whole grains, less sugar and salt, and healthier or less fat.
SI		Opt. for wholegrain products Add wholegrain products to afternoon snack For kindergarden and lower elementary students, for breakfast, use black, rye, oat, buckwheat or other types of wholemeal bread

Source: own elaboration

Table 8. Fruits & Vegetables Criteria in 14 Member States

Countries	Summary
AT	Kindergartens, in a 20/day plan> - Vegetables/salad (excl potatoes): 20x, 8 raw vegetables or salads. - Fruit: min 4x Schools, in a 20/day plan: - Vegetables/salad (excl potatoes): 20x, 8 raw vegetables or salads. - Fruit: min 8x, 4 being fresh fruit. All (food procurement and catering): - Purchase and use of seasonal fruits and vegetables whenever possible. - Catering services should prioritize seasonal fruits and vegetables at their location. - Low-fat and nutrient-sparing preparation methods such as vegetable steaming, braising, boiling, roasting, grilling, must be used.
CZ	FRUIT (also recom for lacto-vegetarian diets, where the recom g/d are a bit higher): - 3 to 18 yrs- 180g to 240g / day, depending on age Processed fruits and vegetables should contain at least 50g of fruits or vegetables per 100g or 100ml, with no added sugar, and a maximum of 0.5g of salt per 100g In schools and educational facilities, it is possible to sell or advertise: a) Fresh fruits and vegetables that haven't been significantly processed. b) Fruit and vegetable juices and nectars. VEGETABLES (also recom for lacto-vegetarian diets, where the recom g/d are a bit higher): - 3 to 18 yrs: 190g to 250g / day, depending on age
DE	Vegetables and potatoes should be cooked without or with little fat and water by sautéing, steaming, or grilling to minimize vitamin losses.

Countries	Summary
	Cooking periods should be kept as long as necessary and as short as possible. Unprocessed or low processed products, like fresh or frozen vegetables and fruits, are preferred for further processing on site. High processed products should be combined or complemented with low processed products/components, including vegetables and salad. Deep-fried and/or breaded products (e.g. battered vegetables) are used only around 20-28% of the time. <u>Vegetables and Salad:</u> More amounts recom for ovo-lacto-vegetarian diets. - Children (school), and Adults (Companies), gram/5 catering days: - Breakfast and Snacks: min. 5 x (min. 1x daily) Schools, from 500-750g depending on primary or secondary; adults: 500g. Min. 3 x as raw vegetables - Lunch: Mixed diets: 5x (1 x daily), Schools, from 800-1200g depending on primary or secondary; adults: 850g. Min. 2x as raw vegetables, 1x legumes. - Adults (Clinics), grams/7 catering days: 3x daily depending on PAL ranges from 2,800g to 3,100g. More amounts recom for ovo-lacto-vegetarian diets. Min. 7x raw vegetables and 1-2x legumes - Elderly grams/7 catering days: 3x daily depending on PAL ranges from 2,900g to 3,500 g; min. 7x raw vegetables and 2x legumes. <u>Fruits:</u> Overall same amounts recom for ovo-lacto-vegetarian diets. - Children (school), and Adults (Companies), gram/5 catering days: - Breakfast and Snacks: min. 10 x (min. 2x daily), from 900-1200g depending on primary or secondary; adults: 1000g (min. 2x nuts or oilseeds). - Lunch: min. 2x weekly, from 150-200g depending on primary or secondary primary; adults: 200g (1x whole fruit) - Adults (Clinics), grams/7 catering day: 14x (2x daily) depending on PAL ranges from 1700g to 1900g - Elderly, grams/7 catering day: 14x (2x daily) depending on PAL ranges from 1600g to 1900g
EE	Kindergarten & schools: Fresh fruit is offered at least three times a week. Kindergarten & schools: vegetables (with the exception of potatoes) are offered daily, including in uncooked form, at least twice a week
ES	Opt for whole or minimally processed fresh fruit At least 45% of fruits and vegetables are fresh and seasonal. Fresh fruit: 4-5 portions/week; non-fresh fruit (e.g., dried): 0-1 portions/week. Potatoes, sauces, mushrooms, vegetables, pulses, etc., as a side dish: 1-2 portions/week. Side dish, Salad: 3-4 portions/week. Vegetables as a main dish: 1-2 portions/week.
FI	<u>Schools:</u> Include a variety of vegetables, fruits, and berries in daily meals in different forms. Provide at least one vegetarian option for the main course and serve it at least once a week. Promote oral health by serving hard chewable food, such as root vegetables, on a regular basis. Vegetables and salads should make up half of the plate size. Use the palm size as an indicator for a suitable portion of vegetables for younger children. Increase the appeal of the food by using vegetables, fruits, and berries of different colors. Favor finger food for familiarization with new vegetables. Cooked vegetables or vegetable side dishes should be available with meat dishes as often as possible. In main dish salads, vegetables should be at least 150g/portion, and in other meal components, the added salt and total fat content should meet specific limits. Include vegetables in pies, hot sandwiches, and other snacks. The sugar naturally contained in fruits, berries, and vegetables should not be avoided. <u>For the elderly:</u>

Countries	Summary
	Maintain a balanced and tasty diet with vegetables, fruits, berries, and vegetable protein sources such as legumes. Vegetable purées can be recommended for adding energy in plant-based diets. Include vegetables and fruits in various forms Vegetables and fruits should always be included in breakfast, lunch, dinner, and snacks in residential care. Offer fortified plant-based drinks or 100% fruit juice instead of water for added energy in elderly diets. However, water is recommended as a drink when thirsty Various recommendations to increase the appeal and consumption of vegetables and fruits are also available for different age-related conditions.
FR	Raw fruit desserts, 100 % raw fruit: At least 8 meals out of 20 successive meals. Annex II includes information on recommended grams of intake for multiple types of fruits and vegetables by age groups. To encourage increasing consumption of fruit, vegetables and starch. Infants: Due to mechanical difficulties in ingestion, raw vegetables and raw fruit are strongly discouraged for infants and young children under 15-18 months of age.
GR	No sugars or sweeteners in 100% fruit/vegetable juices or salads in canteens; consume immediately for freshly made juices. Packaged natural juices allowed in 330ml containers, without preservatives and sugar. Fresh milk-fruit beverages made without added sugar in canteens. Seasonal fresh fruits and vegetables allowed, washed and packed individually. Dried fruits without added sugar, packed in 50g portions. Salad from fresh, washed vegetables with no added salt, plus olive oil, vinegar, or lemon. Vegetables allowed in sandwiches, only tomatoes in packaged sandwiches/toasts.
HU	Recom grams of fruit intake per portion per person: - 1 to 15+ years ranges from 40-150 g depending on age Standards per 10 days service for fruits: - All-day catering: min once, max three times - Kindergartens: not allowed - Three times a day catering service: min once, max three times - One meal a day service: max three times In all-day catering, at least four portions of vegetables (excluding potatoes) or fruits, with at least one being raw, must be served daily. In three meals per day catering, at least two portions of vegetables (excluding potatoes) or fruits, with at least one being raw, must be served daily. In a single daily meal service, at least one portion of raw vegetables (excluding potatoes) or fruits must be provided at least three times in ten days of catering on average. In kindergarten meals, at least three portions of vegetables (excluding potatoes) or fruits, with at least one being raw, must be served daily. For specific types vegetables, the feeding standards per portion per person vary by age group: Raw Salads: 1 to 15+ yrs ranges from 20-150 g depending on age Raw Cold Meals: 1-3 years: not to be given; 4 to 15+ yrs ranges from 10-40 g depending on age For Soups: 1 to 15+ yrs ranges from 30-120 g depending on age For Stews and Side Dishes: 1-3 years: not to be given; 4 to 15+ yrs ranges from 40-90 g depending on age For Fruit (fresh, frozen, crushed, compote) in schools: 1 to 15+ yrs ranges from 40-150 g depending on age
IT	Morning snack (mandatory) : easy-to-eat fruits and vegetables - 8/10% of daily caloric requirements. Morning snack should must provide a calorie intake of 8 % – 10 % of the daily requirements and should preferably consist of easy-to-eat fruit and vegetables of simple consumption Afternoon snack (not mandatory): 8/10% of daily caloric requirements. Schools: 1 portion of fruit and one of vegetables per day Schools : seasonal fruits and vegetables at least 3/week

Countries	Summary
LV	Pre-school FRUITS (12-h/d, data for 24h also provided): -1-6 yrs ranges from min 250g –400g/week, depending on age Pre-Schools VEGETABLES (12-h/d, data for 24h also provided): -1-6 yrs ranges from min 500g – 650g/week, depending on age At least 250g are fresh School FRUITS AND VEGETABLES: -at least 700g/week -At least 250g are fresh Boarding schools: - 3200g/week - at least 500g are fresh FRUITS AND VEGETABLES: Patients of medical institutions and clients of long-term social care and social rehabilitation institutions >7 y.o. -at least 2800g/week -At least 500g are fresh
PL	Allowed foods: - Fruits, vegetables, and fruits-vegetables cocktails, juices, pastes, and mousses, without added sugar or sweeteners. - Dried fruits and vegetables without added sugar or salt. - Salads and fresh vegetables salads. Soups and sauces should be prepared from natural ingredients, without concentrates, except for those made from natural ingredients.
SE	Daily school lunch should include vegetables or fruits, with a variety of at least five components, including fibre-rich vegetables, legumes, and salad vegetables or fruit. The salad bar should have at least five different components every day. Breakfast and snacks should follow the Plate Model, including vegetables and fruits. Soup meals should also provide vegetables and be nutritionally balanced with carbohydrates, protein, and extra slices of bread or dessert if needed. Consuming dark green leafy vegetables, cabbage, beans, chickpeas, lentils, fruit, and berries can help meet the daily folate requirement. The Plate Model emphasizes plant-based foods and reduces animal products, with vegetables and root vegetables taking up a larger portion. School cafeterias can offer sandwiches, yoghurt, milk, enriched plant-based drinks, fruits, and smoothies.
SI	Fruits: every day, twice a day Vegetables: every day, 2-3 times a day Menus should incorporate a nutrient-dense diet with plenty of fresh fruits and vegetables, and each meal should include them. Fruits and vegetables should be part of snacks. Energy-dense foods should be limited and combined with fruits and vegetables in menus. For kindergarten and lower elementary children: - Use dairy products like cottage cheese with fruits for breakfast. - Add fresh fruit to plain yogurt instead of fruit yogurts. - Offer chilled cottage cheese with fruit instead of ice cream. - Include fruit in puddings or desserts. - Prepare vegetables in creative ways like creams, soups, etc. - Ensure fruit and vegetables are included in the daily diet to reach the recommended intake. For higher elementary and high school students: - Offer fruit juices diluted with water for drinking. - Make pizzas with lots of vegetables. - Prepare vegetables in a way that maintains their nutritional value.

Countries	Summary
	Fruit drinks with a smaller proportion of fruit and added sugar are less suitable. The most suitable drinks are fruit or vegetable juice without added sugar. For bakery and confectionary products, it is recommended to include added fruits. For special occasions, offer fresh seasonal fruit or berries, salads, and less sweet desserts with added fruits and vegetables. Prepare a variety of attractive salads with different colours of vegetables. Offer side dishes like carrots (in sticks) to make them more appealing. Locally sourced food can provide higher nutritional value due to reduced biological value loss during transport and storage. Schools - Recommended number of units of food per day for F&V -1-3 years: 2 -4-6 years: 3 -7-12 years: 4 -13-18 years: 5 Cells 221 and 223 provide detailed information on the number of fruit and vegetable units per age group and per meal category (breakfast, lunch, etc.), including combinations of meals or snacks eaten at school.

Source: own elaboration

Table 9. Legumes Criteria in 14 Member States

Countries	Summary
AT	Kindergardens: at least 4x/20 Schools: at least 4x/20. Legumes are an alternative to meat and meat products as a source of protein All: not mentioned
CZ	3-18 yrs, ranges from 15 to 30 g/d depending on age For lacto-vegetarian diets amount are a bit higher In schools and educational places, it's allowed to sell or advertise food like nuts, seeds, legumes, and related products without added salt or sugar."
DE	Opt for fresh or frozen vegetables, legumes, and salads. Higher amounts recom for ovo-lacto-vegetarian diets in all settings below Children and Adults (companies), gram/5 catering days: - Lunch: min 1x. Schools, from 80-120g depending on primary or secondary; adults: 100g. Adults (Clinics), grams/7 catering days Min 1-2x depending on PAL ranges from 150g to 160g - Elderly grams/7 catering days: min 2x, depending on PAL ranges from 210-260g; Mashed legumes can be used as an alternative to mashed potatoes for variation. Catering for Malnutrition in the Elderly (65 and above): Legumes can be used as an energy-dense, protein-rich food.
EE	Not mentioned
ES	It is recommended to increase the presence of legumes in menus Legumes as main dish, 1-2 portions/week Second dish, Vegetable protein (pulses and derivatives, Seitan..) 0-5 portions/week. Side dish, Other (potatoes, sauces, mushrooms, vegetables, pulses, etc.) 1-2 portions/week
FI	- One quarter of the plate should contains meat, fish, egg, legumes or nuts/seeds - It is advisable to provide two choices for the main course. One of them a vegetarian dish, with the adequate protein content of the meal ensured with legumes - for snacks, legumes in a wide variety, pastas made from legumes as bread spread too Elderly - The diet should be balanced and tasty. It should include ... or vegetables protein sources such as legumes. - to ensure protein intake, every main meal includes high protein foods, with at least 1/3 containing...legumes. Soup meals contain plenty of ...legumes"

FR	Dried vegetables (legumes, for main meals, it doesn't mean that it is per day): -8-9 months to 18 months: - - 15-18 months to adolescents: 120g - Children in elementary school: 170g - Adolescents adults and the elderly if carried at home: 200 to 250g - Elderly people in institutions: 180-200g Legumes (at least 50% of the meal) should be included in 32 out of 56 meals Include them in 10 meals out of 20 consecutive meals beyond 18 month. Favour legumes (e.g., lentils, red beans, flageolets, chickpeas)
GR	Not mentioned
HU	Legumes per portion, range of grams for 4-15+ yrs For main dish: 50-90g, depending on age For soups, salads: 20-50g, depending on age For cold meals: 10-40g, depending on age
IT	Legumes at school meals: 1 or 2 times per week
LV	The menu should include on a daily basis: protein-rich foods, including legumes
PL	Not mentioned
SE	School-aged children: min 1x legume per meal as possible selected food
SI	Not mentioned

Source: own elaboration

Table 10. Nut & Seeds Criteria in 14 Member States

Countries	Summary
AT	Kindergarten: at least 4x/20 Schools: at least 4x/20; preference for unsalted and unsweetened products. At least half of all desserts (not offered daily) based on milk/dairy/fruits and vegetables and nuts
CZ	In schools and educational places, it's allowed to sell or advertise food like nuts, seeds, legumes, and related products without added salt or sugar.
DE	Opt for unsalted nuts and oilseeds More amounts recom for ovo-lacto-vegetarian diets. School children & adults (company), gram/5 catering days: - Breakfast and snacks: school 10x of fruit, min 2x nuts or oilseeds (25-60g). Adults (50g) - Lunch: x2 week For adults (clinics), grams/7 catering days: - Out of 14x (2x daily) fruit, min 3 x of nuts or oilseeds (70-100g). For elderly, grams/7 catering days: - Full day: min 14x fruit (2x daily), min 3 x of nuts or oilseeds (60-90g). - Nuts and oilseeds can be used as an energy-dense food (people with malnutrition).
EE	
ES	Food sold in vending machines: Nuts, natural or with no added sugar, salt or fat. No limit for fat content of nuts with no added fat
FI	Nuts, almonds, and seeds can be consumed, but without salt, sugar, or coatings. They can be added to diets for a protein boost, especially for the elderly. Consume 15-30g per day due to high energy and fat content, and watch out for potential allergies.

Countries	Summary
	Ensure adequate dietary fibre intake by including nuts and seeds. However, those with difficulty chewing may need to avoid them.
FR	To encourage the consumption of foods rich in omega-3 fatty acids (rapeseed, soya, walnuts) There are recommended grams of intake of dry fruit, which includes both nuts and dehydrated fruits.
GR	No added sugar or salt in nuts (up to 50 g individual packaging). Fried nuts not permitted
HU	Grams per potion by age groups ranging from 10-40g For kindergarten, only in minced form
IT	Not mentioned
LV	Unroasted nuts and seeds with no added sugar and salt
PL	Not mentioned
SE	Encourage nuts and seeds consumption The Swedish Food Agency recommends that nuts, almonds, peanuts and sesame seeds are not included as ingredients in school meals because they can cause severe allergic reactions even in small amounts.
SI	Not mentioned

Source: own elaboration.

Table 11. Meat Criteria in 14 Member States

Countries	Summary
AT	Kindergarten (age range not available): maximum 10x/20, of which at least 5x/20 with a low proportion of meat/meat products Schools: (age range not available): Maximum 10x/20, of which at least one third with a whole piece/slice of meat and a maximum one third meat products
CZ	3-18 yrs, ranges from 114g to 163g g/d depending on age In schools and educational settings, meat products can be advertised and sold if they contain at least 10% pure muscle protein by weight and have no more than 15% fat"
DE	When preparing meat, sautéing, roasting, stewing, grilling and low-temperature cooking in little fat are among the low-fat cooking methods. -Unprocessed or low-processed products like fresh or frozen meat are preferred to be processed further on site. MEAT, SAUSAGE, FISH, EGGS. In general prefer lean meat; meat and cold cuts as bread topping: max. fat content 20%. Children, gram/5 catering days: -BREAKFAST AND SNACKS: max. 2x meat/cold cuts offered. Meat and sausage products as bread topping: max. fat content 20 %. (20-50g). -LUNCH: max. 1x meat / sausage products, thereof min 2x/20 lean muscle meat Adults (companies) gram/5 catering days: -BREAKFAST AND SNACKS, max. 2x meat/cold cuts offered. Meat and sausage products as bread topping: max. fat content 20 %. (50g). -LUNCH, mixed diets, max. 2x meat / sausage products (ca 150g), thereof: min. half of the offer lean muscle meat. Adults (clinics), grams/7 catering days: -max. 3x meat and sausage for lunch. Meat and cold cuts as bread topping: max. fat content 20 %, thereof: min. half of the offer lean muscle meat. Total in all meals in seven catering days: 320g to 380g. Elderly grams/7 catering days: - max. 3x meat and sausage for lunch. Meat and cold cuts as bread topping: max. fat content 20 %, thereof: min. half of the offer lean muscle meat. Total in all meals in seven catering days: 240 to 280g.
EE	Kindergarten & schools: food containing meat or poultry meat (preferably skinless) is offered at least twice a week

Countries	Summary
ES	Red or processed meat (beef, pork, sausages, hamburgers...) 0-1 portions/week (max of 2 portions/month of processed meat
FI	To cut back on red meat consumption and replace it partly with poultry. Low-fat and low-salt meat products are ideal, max 1-2 meals per week. Poultry (without skin): 1-2 times per week. When serving meat in school meals or for the elderly, it's essential to consider the quality of the fat and the portion size according to their specific dietary needs. The quality of the diet can be improved by choosing lean meat products.
FR	Elderly: Prefer proteins of animal origin It is recommended that a complete portion of meat or fish is offered at lunch, and often supplement these lunchtime intakes with an additional intake in the evening. Dishes without animal protein cannot be considered as protidic dishes in the diet of the elderly. Limit the consumption of ready-to-eat preparations or dishes containing less than 70 % of the recommended weight for the portion of meat, fish or egg. Unminced meat of beef, veal or lamb and offal for slaughter. 4/20 lunches minimum. Annex II includes information on recommended grams of intake for multiple types of meat by age groups. Information for infants it is also available.
GR	Red meat not mentioned Cold cuts (pre-cooked or cured meat products) are not allowed in sandwiches and pizzas
HU	Recommendations in grams/portion for meat in cold meals, meat in for soups, stew, sliced meat, Liver, gizzard, heart, and liver preparations, Meat dressings for cold meals, casseroles, stuffed dishes, for soups, for pasta, ragu, roasted meats is given for different age groups Meat > 30% not allowed Meat products: < 23% fat Standards for certain foods and food groups per person per ten days of food: - All-day catering: Meat products with a fat content < 23 % on no more than five occasions, and products with a fat content > 23 % on no more than one occasion - Kindergartens: no more than four times, <23 % fat - Three times a day catering service: Meat products with a fat content < 23 % on no more than five occasions, and products with a fat content > 23 on no more than one occasion times - One meal a day service: up to two times
IT	Meat 1 or 2 times at lunch per week
LV	Meat products shall be included in the diet if they comply with the following requirements: - contain at least 70% of meat - do not contain mechanically separated meat and raw materials produced from genetically modified organisms; - do not contain soya bean and their products; - contain salt less than 1.25 g per 100 g of a meat product" Pre-school & school: For minced meat preparations, the meat should be minced at the educational establishment's catering facility or have <0.4 g of salt per 100 g and contains no more than 20% fat." Pre-school (12-h/d, data for 24h also provided): - at least 180 g/week of lean meat or fish Schools: - at least 240 g/week of lean meat or fish Boarding schools: - at least 550 g/week of lean meat or fish Patients of medical institutions and clients of long-term social care and social rehabilitation institutions: - at least 400 g/week of lean meat or fish (1-6 y.o.) - at least 490 g/week of lean meat or fish (>7 y.o.)

Countries	Summary
PL	At least 1 portion from the group: meat, eggs, nuts, lentil seeds
SE	Schools: Advise to decrease red meat consumption and choose meat wisely, limiting total meat intake to a maximum of 500 grams per week, thereof as little as possible being processed meat. Vegetarian, egg, fish, or poultry options can be served more frequently to reduce red and processed meat, or meat can be served just as often but in smaller quantities. Schools should follow general guidelines to reduce the amount of red meat and processed meat served.
SI	Lean types of meat are mentioned as sources of high-quality protein Moderate and occasional consumption of meat products is recommended. Opt for meat options with a visible structure, rather than minced or ground meat

Source: own elaboration

Table 12. Fish Criteria in 14 Member States

Countries	Summary
AT	Kindergartens: at least 2x/20, prefer fatty fish Schools: at least 2x/20, prefer fatty fish All: not mentioned (only regarding environmental criteria)
CZ	- 3-14 years old and 15-18 years old: 20g/d to 30 g/d - 7-14 years old: 30g/d " Max 30% fat
DE	Unprocessed or low-processed products like fresh or frozen fish are preferred to be processed further on site. Given the eating habits of German children, adolescents and adults, fish was not included in the nutrient-optimised breakfast and snack menus Portion per catering days given by setting and age, stating that a min should be fatty fish
EE	Fish or fish products made from fresh fish are offered at least once a week
ES	Fish species with high mercury content are not recommended 1-3 portions/week of fish
FI	Prioritize fish fat over other animal fats for health benefits School: Vary fish species and include them at 1-2 meals per week. Elderly: The quality of dietary fat can be ensured by...eating fish 2-3 times a week."
FR	For children under 3, based on public health recommendations, it is: - advised to limit consumption of wild predatory fish It is advisable to avoid eating fish that are particularly bio-accumulators Grams of fish per main meals by age groups given
GR	Not mentioned
HU	Not mentioned
IT	Not mentioned
LV	Recommendations for meat and fish together
PL	Not mentioned
SE	Schools: at least one fish meal per week, preferably including fatty fish every second time
SI	fish: generic recommendation 1-2 times a week

Source: own elaboration

Table 13. Dairy Criteria in 14 Member States

Countries	Amount
AT	Kindergartens and schools: Frequency of dishes containing dairy per 20 days (at least 8x/20) Low sugar options Replace high-fat products with leaner options.
CZ	Recom in grams of milk or dairy products/d are given by age and higher amounts reco for vegetarians
DE	Max fat content milk, plain yoghurt etc 3.8%; quark 5% Without sugar or sweetener cheese max 30% fat Portions (including grams) per catering days given by setting and age group (at least 2x daily) Dairy products can be used as energy –dense or protein-rich foods, depending on product (for people with malnutrition)
EE	Kindergarten & school: Max 400 ml/d
ES	To offer dairy products without sugar 0-1 portions/week as a dessert
FI	- Replace High-fat dairy products with fat-free or low-fat products - Replace Butter and butter-based spreads with vegetables margarine or oil The drinks available at school meals include fat-free milk/milk drinks and buttermilk, fortified with vitamin D. Other liquid dairy and fermented milk products should be fat-free or low-fat, max fat content 1% - Cheese products with a fat content of at most 17% and a maximum salt content of 1.2% should be selected. At most once a week as a bread topping. Recommended dairy choices: Fat-free and max. 1% fat products, and unsweetened and low added sugar products Offer dairy daily at school
FR	Semi-skimmed milk is the one recommended in the menus Only recommendations in grams/meal of cheese are given y age group
GR	Low fat alternative preferred, No added sugars or sweeteners
HU	Per 10 days of catering: Butter: max 3x in all-d catering and kindergartens. Max grams by age group per potion per person also given No sugar may be added to flavoured milk products purchased as ready-to-eat food. Milk offered as a drink must not contain added sugar. milk with 2.8% or 3.6% fat for the 1-3 age group For the 3+ age group, milk with a fat content of 2.8% or less must be provided.
IT	Cheese provided at lunch 1x/week
LV	Recommended grams/week given by age groups and dairy type
PL	Dairy products with no added sugar or sweeteners are allowed Max sugar content in grams given
SE	Schools: Switch to unsweetened and low-fat dairy products. Choose unsweetened and low-fat varieties enriched with vitamin D Offered drinks: mainly water and depending on the rest of the menu, milk
SI	Include milk or dairy products in the daily menu. For children under two years old, use full-fat milk and dairy products. Use whole milk to simplify meal organization for all age groups. After two years, switch to semi-skimmed milk and dairy products with 0.5% fat. Unit of dairy product per day range from 1 to 4 depending on age

Source: own elaboration

Table 14. Water Criteria in 14 Member States

Countries	Summary
AT	Kindergarten: water available and freely accessible Schools: Tap water and/or mineral water available at all times. Prefer tap water All: (catering services) tap water is free of charge
CZ	Not mentioned
DE	Schools: An energy-free beverage of at least 0.2 litres is served with lunch. Adults: amount mentioned in full catering options (elderly in nursing homes and adults in clinics); at least 9.1 and 9 litres per week, respectively Access to water fountains or dispensers is mentioned, if possible free of charge, with tap water being a recommended and accessible option. The optimal choices for hydration are water and unsweetened herbal teas.
EE	Water-based flavoured beverages not offered as beverages The child must have access to a sufficient quantity of drinking water
ES	From vending machines: Waters containing aromatic or sweeteners are not considered as waters water supply as the only beverage and easily accessible to schoolchildren
FI	Schools: - water should be available and the primary beverage served, with no soft drinks, energy drinks, or acidified beverages with added sugar. - Unsweetened juices can be given occasionally. Elderly: Prioritise water, mineral water, milk, fortified plant-based drinks, buttermilk, 100% fruit juice, or a smoothie.
FR	water at will during and outside meals
GR	bottled water is allowed as a beverage
HU	Drinking water or mineral water may be given between meals
IT	It is important that the child has water available throughout the school day, preferably tap water.
LV	It is recommended to provide drinking water
PL	Natural mineral low- and medium-mineralized water, spring water and table water are allowed
SE	The daily school lunch offer should include water and possibly milk or fortified vegetable drinks Water is a good drink together with the meal.
SI	- At meals, and between meals, children and young people should be offered enough quantities of beverages, especially healthy drinking water - For drinking, offer mostly drinking water.. We do not recommend drinking mineral water for the youngest children (kindergarten and lower elementary)

Source: own elaboration

Table 15. Sweeteners Criteria in 14 Member States

Countries	Summary
AT	Not mentioned
CZ	It is possible to sell or advertise foods that do not contain sweeteners except sugar-free chewing gum
DE	Sugar and alternative sweeteners should be used sparingly in food preparation. Optimal choice for beverages are water and fruit/herbal tea, each without sugar or sweetener
EE	Not mentioned
ES	Not mentioned
FI	Not mentioned

Countries	Summary
FR	Not mentioned
GR	No sweeteners in natural fruit or vegetable juices, packaged milk, or yogurts. In secondary school canteens, only specific infusions such as chamomile, sage, and mountain tea without sweeteners are allowed.
HU	Not mentioned
IT	Not mentioned
LV	Sweeteners should not be added to food
PL	Foods and drinks with added sugars or sweeteners are not allowed "
SE	School meals: Opt against serving foods high in sugar and discourage the use of sweeteners Do not introduce sweet flavours from sugar or sweeteners from an early age
SI	advise against the use of pre-prepared foods that contain artificial sweeteners

Source: own elaboration

Table 16. Sugar-sweetened beverages Criteria in 14 Member States

Countries	Summary
AT	Not mentioned
CZ	Energy or stimulating drinks not allowed in schools Max amount: 5g of sugar per 100ml
DE	Lemonades, cola, fruit juice drinks, fizzy beverages, nectars, fruit juices, iced teas, energy drinks, and milkshakes, are not suitable for hydration due to their high sugar content.
EE	Kindergarten & schools: Water-based flavoured beverages, including energy and sport drinks, not offered as beverages
ES	Food and beverages from vending machines and cafeterias do not contain caffeine or other stimulant substances Max amount: Mentioned for vending machines <200kcal per 50g food or 200ml of beverages
FI	Soft drinks, energy drinks, and acidified beverages with added sugar should not be served at school or considered suitable snacks in the school environment. Limiting excessive and frequent consumption of sugary beverages and sweets is crucial for the elderly.
FR	For school children, adolescents, and adults, beverages that are essential for rehydration include water, fruit juices of good nutritional quality (100% fruit, without added sugar), or semi-skimmed milk (preferably unsweetened). Limit sweet drinks (favour light drinks) mL of intake for each type are given by age group
GR	Soft drinks not allowed
HU	Energy drinks, fizzy or sugary drinks, syrups, and caffeinated beverages (for those <18 yrs) should not be served in public catering
IT	Low-energy food and beverages such as fruit, yoghurt, added sugar-free fruit juices can be included in vending machines in high schools.
LV	Fruit-Based Beverages: containing at least 18% fruit juice and a total carbohydrate content not exceeding 15 g per 100 ml, without glucose syrup, glucose-fructose syrup, or fructose-glucose syrup. Beverages to which caffeine or (and) amino acids have been added are not allowed
PL	Drinks, including, fruits and vegs juices, milk based products, with no added sugar or sweeteners are allowed Max amount: 10g sugar per 250ml of drink
SE	Schools should avoid serving foods high in sugar
SI	soft drinks are produced on the basis of artificial colours and flavourings with added sugars or artificial sweeteners...so we do not recommend their use - strongly advise against drinking beverages containing caffeine (cola, coffee, real tea, energy drinks)"

Source: own elaboration

Table 17. Alcohol Criteria in 14 Member States*.

Countries	Summary
AT	Not mentioned
CZ	Alcoholic beverages are forbidden
DE	Alcohol is not served in clinics due to potential interactions with medication and is declared in menus for elderly residential homes and catering. School meals should avoid foods containing alcohol or alcohol flavourings.
EE	Not mentioned
ES	Not mentioned
FI	School, not mentioned Elderly: To reduce alcohol intake, with a maximum of one serving per day and seven per week.
FR	Adults: Alcoholic beverages should be consumed in moderation, with no more than two wine glasses per day (10 cl) for women and three for men (2 wine glasses are equivalent to two half beer, or 6 cl of strong alcohol).
GR	Not mentioned
HU	Food containing alcohol should not be used in public catering services
IT	Not mentioned
LV	Not mentioned
PL	Not mentioned
SE	Not mentioned
SI	Not mentioned

* It should be noted that most countries do not include guidelines on alcohol consumption, likely because their focus is on school settings where alcohol consumption is usually prohibited.

Source: own elaboration

Table 18. Monitoring and Evaluation Process for Catering Programs in 14 European Countries

Countries	Summary of the Monitoring and evaluation process
AT	Only available for "All population" Mandatory technical specification: In public kitchens, at least one vegetarian or vegan main dish must be offered daily, which is seasonal and regional and contains at least one main ingredient of organic/ecological production ("climate plate"). Proof of compliance: Tenderer's written description of how they will ensure the use of seasonal and regional ingredients, and at least one main ingredient derived from organic production in accordance with Regulation (EU) 2018/848. Mandatory contractual condition: Tap water must be offered free of charge. Proof of compliance: A written statement by the tenderer detailing the form in which tap water is offered free of charge and explaining how they will ensure regular refills.
CZ	Not mentioned
DE	External quality control: An audit system or audit criteria should be implemented for evaluating the offered meal quality. Feedback management: Specific criteria exist for managing feedback from the recipients of the meals. Tenders: When catering is outsourced, a specification must be established as the foundation for the tender process. The DGE Quality Standard may serve as a reference for this specification. The specification should include detailed criteria to be fulfilled, such as preparation methods, serving system, and staff qualifications, for easier comparison of offers. Food waste management: Returned dishes are recorded separately by meal and component, and the outcomes are used for optimising menu planning, preparation and presentation.

Countries	Summary of the Monitoring and evaluation process
	Quality improvement and benchmarking: These aspects are mentioned in the planning phase.
EE	Not mentioned
ES	The monitoring of menus will be carried out by professionals with accredited training in human and dietary nutrition (Article 40.3 of Law 17/2011 of 5 July on food safety and nutrition) The monitoring will involve a desk review and visits to the school. In cases where the canteen service is provided by companies, visits to the central kitchens may also be carried out. The evaluation of menu schedules will be conducted prior to the physical visit of school canteens, and the assessment will cover the following actions: a) The information provided in the information collection survey will be checked on the spot. b) The technical sheets of the dishes forming the menu will be requested. c) It must be checked that the menu served matches the one planned in the schedule, and in case of substitution, they must comply with the recommended frequencies of the food groups and have the same nutritional quality as the replaced menu. d) The availability of special menus for pupils requiring it, or, where appropriate, means of preservation and heating specific to these special menus will be verified. e) A sensory analysis of the menus will be conducted. Other aspects such as ambient conditions and food waste also mentioned
FI	Monitoring and evaluation for both schools and older adults: Nutrition quality: Meal and menu level nutrient content calculations, audits, dietary analysis software, standard recipes, and legal obligations under the Health Care act for hygiene inspections. Participation and inclusion: Feedback from pupils/older adults, surveys, parent involvement, and monitoring food waste. Schools: Other forms: School lunch diploma for sustainable lunches, self-evaluation tools, use of existing systems like the Heart Symbol and Oiva smiley, and a questionnaire covering basic, fat, salt, and communication criteria. Older Adults: Monitoring and implementation of selection criteria in the call for tender phase. Assessment of operations' appropriateness, feedback on food taste, self-monitoring, deviations and corrective measures, and active cooperation with clients. Joint quality reviews with common criteria for quality evaluation. The contracting authority/purchaser should have the professional skills and competence to steer the food service and monitor quality. Involvement of nursing and catering personnel in monitoring. Monitoring of nutritional content, food waste, and sanctions or corrective measures as needed.
FR	It ensures that the meals served meet the nutritional requirements and guidelines set by the recommendation. The monitoring process includes the following steps: 1. Frequency monitoring: This involves checking the frequency of food services for various components (details in Annexes 4 & 5) 2. Menu monitoring: This ensures that the menus are diverse, balanced, and meet the nutritional objectives. 3. Product monitoring: This ensures that the products served meet the nutritional requirements and guidelines.
GR	Not mentioned
HU	Public service providers must create menus for meals, which should be displayed in clear locations in establishments like educational institutions, creches, and hospitals. They should also provide electronic access if possible. If dietetic meals are offered, displaying diets is allowed if electronic publication is ensured. Changes to menus must be promptly communicated, and institutions may provide additional notifications to parents or legal representatives. In hospitals, menu display is mandatory, and dietary plan display is allowed if electronic publication is available. Menus should include nutritional information and allergens, and changes must be communicated to institutions at least 3 hours before dispatch. Mass caterers must create dosage guides in accordance with guidelines, which should be displayed at the food preparation area for staff to access.
IT	Information about food safety and quality control measures available, but not about monitoring and evaluating menus, nutritional quality, and dietary requirements

Countries	Summary of the Monitoring and evaluation process
LV	Not mentioned
PL	Not mentioned
SE	Systematic quality management in schools includes monitoring the nutritional quality of meals to meet legal requirements.- SkolmatSverige and other tools help calculate nutritional content and ensure compliance. Free resources for evaluating school meal quality are available on skolmatsverige.se. Kitchens should follow calculated recipes to maintain nutritional standards. Monitoring meal consumption, cafeteria environment, and other aspects of meal quality is essential. Schools should measure food waste using the national method provided by the Swedish Food Agency. Food operators must be aware of relevant legislation, with a summary available in the document.
SI	Not mentioned

Source: own elaboration

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