Regional Studies, Regional Science

ISSN: 2168-1376 (Online) Journal homepage: www.tandfonline.com/journals/rsrs20

A seed towards a sustainable food system in healthcare institutions: the case of the Basque Country

Goiuri Alberdi, Edurne Magro, Mari Jose Aranguren & Mirene Begiristain-Zubillaga

To cite this article: Goiuri Alberdi, Edurne Magro, Mari Jose Aranguren & Mirene Begiristain-Zubillaga (2023) A seed towards a sustainable food system in healthcare institutions: the case of the Basque Country, Regional Studies, Regional Science, 10:1, 273-293, DOI: 10.1080/21681376.2023.2182231

To link to this article: https://doi.org/10.1080/21681376.2023.2182231

Published online: 17 Mar 2023.

REGIONAL STUDIES, REGIONAL SCIENCE
2023, VOL. 10, NO. 1, 273–293
https://doi.org/10.1080/21681376.2023.2182231

Routledge
Taylor & Francis Group

Regional Studies
Association

A seed towards a sustainable food system in healthcare institutions: the case of the Basque Country

Goiuri Alberdi [a], Edurne Magro [b], Mari Jose Aranguren [b] and Mirene Begiristain-Zubillaga [a]

ABSTRACT

Public procurement of food is seen as a critical tool for a paradigm shift and for facilitating the development of specific policy objectives to build sustainable food environments. Furthermore, the harnessing of the purchasing power of hospitals, prioritizing local and sustainable food, offers the potential to transform food production systems into more resilient production models and bring them in line with current European sustainability strategies. This paper analyses the current situation of sustainable food procurement strategies in Osakidetza, the Basque Health System, and identifies the challenges and action plans needed to develop a sustainable food strategy. Sustainable food procurement is still incipient in Osakidetza. This roadmap proposal is a basic but necessary contribution as a starting point. Likewise, we find contributions from agroecology that are interesting for the construction of sustainable food environments in health systems.

ARTICLE HISTORY

Received 25 July 2022; Accepted 3 February 2023

KEYWORDS

sustainable food systems; healthcare system; sustainable food procurement strategy; exploratory case study; Osakidetza; Basque Country

1. BACKGROUND

The current ecological and socio-economic crisis is directly linked to the existing agro-industrial and globalized food system model. Evidence shows that the current agro-industrial food systems in place have increasingly generated severe environmental, social and health-related impacts (Frison & Clément, 2020). Singh et al. (2021) and others (De Schutter, 2019; HLPE, 2017; SAPEA Consortium, 2020) have recurrently described major interconnected challenges, including climate change, natural resource depletion, biodiversity loss, malnutrition, food insecurity, inequity and preventable diseases, all of which are exacerbated by food policy incoherence. In addition, the COVID-19 pandemic has highlighted both the essentiality of food as well as the vulnerabilities of our food systems, which lack the resilience to face sudden crises of different nature (IPES-Food, 2020).

CONTACT Goiuri Alberdi goiuri.alberdi@ehu.eus
[a] Department of Finance Economy II, Faculty of Economics and Business, University of the Basque Country (UPV-EHU), Donostia–San Sebastián, Spain
[b] Orkestra–Basque Institute of Competitiveness and Deusto Business School, Donostia–San Sebastián, Spain

The urgent and necessary paradigm shift is also reflected in European policies and in the global strategies that nations are encouraged to define (the Green Deal, the 2030 biodiversity strategy, the 'farm to fork' strategy, the Sustainable Development Goals, etc.) (European Commission, 2019b, 2020a, 2020b; United Nations, 2015; Willett et al., 2019). A shift towards a sustainable food system is a growing subject of interest for policymakers and agencies such as the Food and Agriculture Organization (FAO) or IPES-Food, recognizing that the food system has important leverage for a range of issues such as environmental, food and nutrition security, trade, equity and health (De Schutter, 2019; FAO & World Health Organization (WHO), 2019).

For the purpose of the present study, the sustainable food system is defined as:

> a system that integrally brings together the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socio-economic and environmental outcomes. (HLPE, 2014)

Additionally, 'sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources' (Burlingame & Dernini, 2012).

Although this study focuses on the sustainable food systems approach, it is important to highlight that in recent years agroecology has been accepted as having the unique ability to reconcile the economic, environmental and social dimensions of sustainability. Many organizations such as the Intergovernmental Panel on Climate Change (IPCC) (Mbow et al., 2019), FAO (2015) or Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) et al. (2019) have placed agroecology as an effective food system transformation process with the capacity to achieve climate change adaptation. Moreover, the European Committee of the Regions (ECR) has accepted an Opinion Paper that insists on promoting agroecology in the EU, as a key paradigm for the transition towards sustainable food systems (ECR, 2021).

1.1. Public procurement as a tool for paradigm change

Public procurement can address societal challenges while enabling structural change. The scientific evidence shows that procurement practices can facilitate the implementation of specific sustainable development policy targets. First, the public sector is a very prominent economic actor of this huge market, with socio-economic and environmental implications and outcomes (Sonnino & McWilliam, 2011). In Europe, the share of gross domestic product (GDP) devoted overall to public procurement is approximately 14%, representing a total expenditure of €1.8 trillion (European Commission, 2019a). Second, procurement strategies of the public sector have the power to set environmental, economic and socio-cultural trends that can convince others to follow suit (Sonnino & McWilliam, 2011).

The most agreed-upon definition of sustainable procurement is a process whereby organizations meet their needs for goods, services, works and utilities in a way that generates benefits not only for the organization but also for society and the economy while minimizing damage to the environment (Cerutti et al., 2016). Interestingly, Morgan (2008) explained that institutions perceived the environmental side as less threatening and more easily implemented than the social and economic dimensions, which open up questions of social justice and economic democracy that constitute more of a challenge to the status quo (Morgan, 2008).

At a global level, the United Nations identified the sustainable procurement practices as a key target to achieve Sustainable Development Goal (SDG) 12: 'Ensure sustainable production and consumption patterns', assuming that by purchasing environmentally and socially preferable

goods and services, governments may significantly contribute towards the development of a sustainable economy (United Nations, 2015).

Likewise, and focused on food, the European Commission's Farm-to-Fork strategy explains that:

> to improve the availability and price of sustainable food and to promote healthy and sustainable diets in institutional catering, the Commission will determine the best way of setting minimum mandatory 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 public institutions and it will also boost sustainable farming systems, such as organic farming. (European Commission, 2020b)

Yet, those criteria that enable sustainable procurement are mere suggestions for the public administrations, not mandatory. Price is still the major decision criteria in the tendering processes of many products, including food. Official data suggest that 55% of EU procurement procedures use lowest price as the only award criterion for public contracts (European Commission, 2017). Consequently, the potential of the public procurement as a paradigm change tool that impacts at an economic, social and environmental level is not maximized.

Despite the transformative potential of Public Procurement for Innovation, which implies having policy instruments with the potential to engender systemic change, uptake remains low. Obstacles to innovation through procurement include a lack of technical capacity in procurement organizations, poor coordination, lack of appropriate cognitive, social and institutional intermediation between buyers and suppliers, inadequate incentive structures or lack of organizational support among others (Eikelboom, 2018; Uyarra et al., 2014, 2020; van Winden & Carvalho, 2019).

1.2. The role of hospitals in paradigm change through sustainable food strategies

For European hospitals to promote the well-being of patients, staff and visitors while meeting environmental standards and addressing socio-economic considerations, they need to offer more fresh, seasonal, local and organic food products (Cioci et al., 2016). To implement such an approach, a sustainable food procurement strategy (SFPS) is needed.

Pencheon (2018), reviewing the lessons learned by the National Health Service (NHS) and the Public Health England Sustainable Development Unit since 2008, concludes that environmental sustainability in healthcare, underpinned by medical workforce advocacy, has the potential to deliver immediate public health benefit on a global scale. He goes on to explain that health professionals can be powerful advocates for health by communicating examples of climate-friendly policies and practices that protect and improve both public and planetary health.

Leveraging the procurement capacity of public institutions catering services such as hospitals and care homes, with large budgets, prioritizing local and sustainable food, has the potential to change the food production systems towards sustainable methods, not to mention public food consumption habits (Knudson, 2013; Tregear et al., 2022). Focusing our efforts on sustainable development, we can begin to balance the impacts of economic activity with its effect on society and the environment.

While the healthcare system and the public health community have the potential to play leadership roles in the creation of a healthy and sustainable food system, this is not a simple task, and is not the role of one sector only (Harvie et al., 2009). An SFPS needs to include economic, social and environmental dimensions. A multidisciplinary joint approach is needed to move towards the development of a strategy, which describes a roadmap, that is, the design of a process that will allow concrete actions to work towards sustainable food systems (Cioci et al., 2016).

Alberdi and Begiristain (2021a) identified three main pillars for a roadmap towards SFPS in healthcare systems. The first pillar is 'Food services for healthy and sustainable diets', where every interaction with the food system presented within the healthcare services should be considered: mode of delivery of food, menu design, nutritional quality, food waste, utensils used, cleaning, etc. The second pillar is to develop 'a sustainable food supply system', which considers the quality of the food stock and the socio-economic interactions developed from it. And the third pillar is based on a 'multilevel governance in the organization's food policy' that takes into account all the interactions, feedback loops and agents of the food systems to structure the food procurement strategy from a multi-scale and holistic understanding of sustainable food systems. Finally, six transversal parameters are identified by the authors, including evaluation, communication, gender, long-term commitment, economic investment and holistic approach. These should be considered when deciding on the actions for the three pillars within the framework in order to develop and implement a SFPS (Alberdi & Begiristain-Zubillaga, 2021a).

In 2005, Health Care Without Harm launched the Healthy Food in Health Care Initiative and introduced the Healthy Food in Health Care Pledge (Harvie et al., 2009). Since then, several hospitals have introduced the sustainable criteria in their food strategy. However, this is not a common practice, and despite the urgent need for a paradigm change towards sustainable food systems, we are still far from achieving this.

This study contributes to the current literature by continuing an open line of research towards a sustainable food system in European healthcare institutions (Alberdi & Begiristain-Zubillaga, 2021a, 2021b). It does so by defining through a case study the challenges and action plans that need to be considered in order to implement SFPS within the public healthcare sector in the Basque Country. Ultimately, the aim is to achieve a sustainable food system with an agroecological perspective through strategy innovation, which influences the environment but also social and economic parameters such as the promotion of the social economy, territorial development, and the establishment of fair prices for small local producers, among other aspects (Begiristain-Zubillaga, 2016; Holt-Giménez & Altieri, 2013; López-García & González de Molina, 2021; Moragues et al., 2013).

1.3. The Basque public healthcare system

The Basque Healthcare System, known as Osakidetza,[1] is the public health service offered in the Basque Autonomous Community. Osakidetza is a public entity of the Basque Government with private rights, which means that it enjoys legal personality, its own heritage and management autonomy. This public health service is made up of 13 integrated health organizations (IHOs). IHOs are organizational structures in which primary care and hospital care are integrated, serving a particular geographical area, aiming to manage efficiently the use of resources (Figure 1). Osakidetza overall comprises a total of 13 acute hospitals, 153 health centres (which includes day centres, psychiatric centres and outpatient centres) and 160 doctor's offices or surgeries. Annual public health expenditure per inhabitant in Osakidetza is among the highest in the world (33.7% of the total budget of the Basque Autonomous Government; equivalent to €1931 per capita). Previous research has analysed the healthcare integration process implemented in Osakidetza, trying to identify areas for improvement (Hernando Saratxaga et al., 2021; Polanco et al., 2015). There is a healthcare network around the IHOs, with an open line of communication between them to give the patient the best available treatment. The evolution from fragmented healthcare structures to a vision of continuity of care through IHOs can facilitate the promotion of multidisciplinary, coordinated and integrated care between different services and levels of care, with a particular focus on fostering collaboration and organizational integration between primary care and specialized care. But achieving the integrity of care and the desired outcomes requires not only the implementation of new

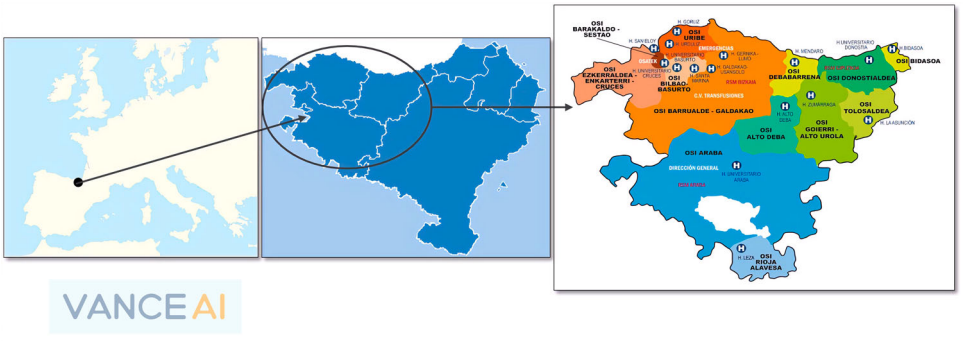

Figure 1. Location of the Basque Country in Europe, with the integrated health organizations (IHOs) spread along the Basque Autonomous Community.
Source: irekia.euskadi.eus, Basque Government.

structures, but also the development of new technologies and tools and new clinical practices based on collaboration (Polanco et al., 2015). In any case, although this research proposes to act on a broad vision of what determines citizens' health, the analysis of sustainable food systems and environments in these processes of integration and a broader vision of health in Osakidetza is still lacking. In fact, although the Basque Government's Department of Health has activated awareness-raising initiatives on healthy eating at a general level (i.e., the healthy plate, guide to food information in retail and catering or the Strategy for the Prevention of Childhood Obesity), these initiatives are not linked or articulated with the health system or raised from a systemic vision of sustainability. In hospital practice and as far as food purchasing services are concerned, each IHO works independently. Each IHO has a general services manager who independently manages catering, cleaning and other services, such as uniforms for medical and general staff.

Within the Basque Healthcare System, green and innovative procurement has been developed in many areas, but not particularly in the food procurement section. In the newly published Basque Strategy for Public Procurement 2030, food is considered a priority category (IHOBE, 2021). In this strategy, the Basque Government has established that 75% of the total purchases by Basque Administrations will be made with sustainable criteria within 10 years; yet, this is far from being the reality within the food and catering departments of the public health system.

2. METHODOLOGY

An exploratory single case study approach addressed the under-investigated topic of sustainable food procurement within the Basque Public Healthcare System. The 'principle of triangulation' (Ruiz-Olabuénaga, 2007) was followed, which involves the use of different information sources in order to ascertain if the effects explored under the study converge from different perspectives. In this case, the sources of information used were the scientific literature explaining the frame used to engender the SFPS, preliminary interviews to establish the current situation in Osakidetza and two focus groups to ascertain the perception of stakeholders, including professionals involved in the food system, in the healthcare system or both. This principle of triangulation supports the validity of the research (Yin, 2009) (Figure 2).

SFPSs are practically non-existent within the Basque Healthcare System, so in line with Stewart and Shamdasani (2014), at this stage we focus on a simple descriptive narrative for the purpose of this study. The descriptive narrative portrays what the participating agents have identified as challenges and actions, as a very first step towards investigating further

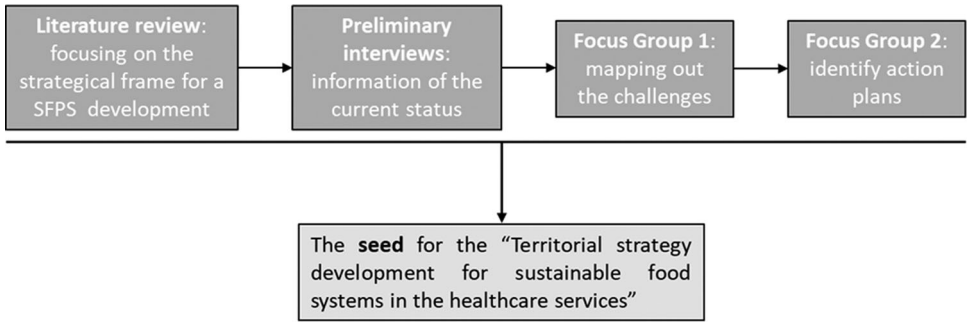

Figure 2. Methodological process of the case study.

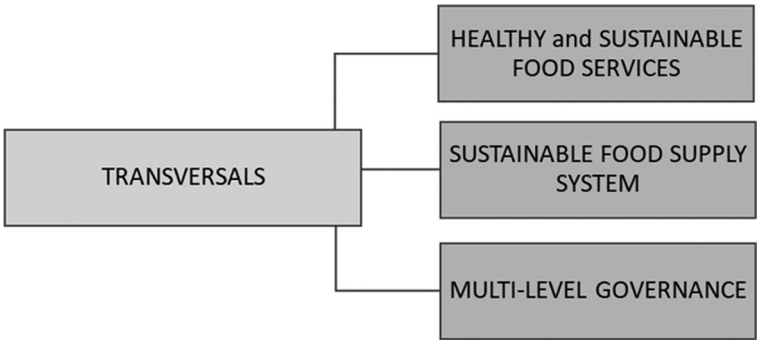

Figure 3. Main framework to instigate the process of sustainable food procurement strategy (SFPS) development.

scenarios. Henceforth, for ease of understanding, the content of the plenary sessions has been reorganized in Table 2 for later discussion.

For this case study, the authors define a strategy as a document that gathers all the objectives and actions to be followed in a set period with the aim of developing a sustainable food procurement system within the healthcare institutions. Challenges are situations that can endanger the strategy progress and actions are the active part of the strategy, the arrangements, undertakings, or specific tasks necessary to ensure that the strategy is implemented accordingly.

This study also has an action research methodology perspective that embodies the process of dialogue between researchers and the community (stakeholders), seeking to transform a situation and generate new knowledge that contributes to solving a problem (Guzmán et al., 2013; Larrea, 2019). Aranguren and Larrea (2015) explain that if territorial strategy emerges through collaboration of different actors, it is more likely to generate territorial actors' commitment as they have participated in the process of the strategy construction.

For the process of building the seed of SFPSs in the Basque Healthcare System, the authors used the framework derived from the literature review (Alberdi & Begiristain-Zubillaga, 2021a), which included segments from food services, food supply, governance and transversal parameters (evaluation, communication, gender, long-term commitment, economic investment and holistic approach) (Figure 3).

2.1. Preliminary interviews

The authors carried out face-to-face and telephonic semi-structured interviews (during May–June 2021) with directors of general services and kitchen managers at five different Osakidetza

hospitals. The objective was to gather first hand an idea of the current situation within their food procurement processes. The main topics covered in the semi-structured interviews were organized into six themes: (1) the existence of a food purchasing strategy; (2) the existence of a food waste strategy; (3) the inclusion of sustainability criteria in tendering processes; (4) the level of communication with local producers; (5) the food ordering system at ward level; and (6) the provision of training on sustainable food systems.

2.2. Focus groups

Two focus group sessions were carried out in June–July 2021, as an appropriate technique for qualitative data collection between scientific research and participants' knowledge (Cornwall & Jewkes, 1995). Taking into account the responses of the pre-interviews along with the SFPS framework (Alberdi & Begiristain-Zubillaga, 2021a), the participants were divided into three groups, depending on their professional profiles: (1) healthy and sustainable diets and food services; (2) sustainable food supply system; and (3) multilevel governance in organization's food policy.

Since focus group discussions rely on the ability and capacity of participants to provide relevant information, purposive sampling was the method for recruitment, selecting agents based on conceptual grounds, not on representational grounds (Ruiz-Olabuénaga, 2007). In this case, the research team aimed to gather agents that could guarantee the systemic view of the food system as well as relevance due to their experience and advocacy capacity. Hence, invitations were directed to hospital personnel (food managers, nurses and cooks), food producers (represented by the agrarian unions and the ecological food council) and other actors such as technicians from the Basque Government that were related with the Basque food system (Table 1). On repeated occasions,

Table 1. Participant profile, general characteristics.

Participant profile	Institution	Gender
Healthcare system personnel		
Head of hospitality service	Osakidetza, Basque Public Health System	Female
Nurse		Female
Auxiliary in nursing care		Female
Dietitian		Female
Hospital chef		Male
Academia and technical profile from public institutions		
Researcher	Universidad del País Vasco (UPV/EHU)	Male
Project officer	Elika Basque Foundation for Agro-Food Safety	Male
Project officer	HAZI Basque Foundation for Rural, Coastal and Food Development	Female
Agents related with food production		
Director	Council of Agriculture and Ecological Food of the Basque Country	Male
Communication manager	Harakai Kooperatiba (livestock cooperative)	Male
Technician	EHNE Bizkaia (farmers' union)	Female
Director	ENBA (farmers' union)	Male
Other		
Public health technician	San Sebastian–Donostia City Hall	Female
Dietitian	Freelance	Female

the research team invited high-level managerial profiles from the Basque Government and the Basque Healthcare System to participate in the focus groups, but no reply was obtained.

The first focus group session concentrated on mapping out the challenges for developing a SFPS in the Basque Healthcare System. At first, participants were encouraged to carry out an individual reflection to identify the challenges in their group. Then each group discussed the individually identified challenges based on two predefined criteria: their desirability/level of importance and their urgency, before presenting and debating the contributions in a plenary session. Through iterative discussion, consensus was reached on the challenges identified.

The second focus group session aimed to identify action plans that could help to unravel the challenges listed in the previous session. First, participants were urged to ratify the results from the previous focus group to revalidate, change or add new challenges where considered necessary. Then, the session continued in the same three groups, guided by the following questions: To address the identified challenges, what do we have to do? What action plan should be promoted? Who are the agents of interest to be involved in these actions? The work from each group was then presented and debated in a plenary session.

Both focus groups took place at the Faculty of Economics and Business of the University of the Basque Country in San Sebastian. The content of both focus group sessions was recorded for later transcription and analysis. The participants then validated the minutes of these meetings and a consensus reached.

3. RESULTS

The results are presented according to the phases of the fieldwork.

3.1. Preliminary phase

The overall message collected from the semi-structured interviews is that all efforts in the food procurement section are directed towards safely nourishing all patients and users of the health institution, while the sustainable and systemic approach to the food system is hardly considered at all.

The individual interview responses in the preliminary phase along with the publicly available tendering documents enabled the authors to ascertain the main characteristics of the current food strategy in the Basque Healthcare System. To start with, the level of sustainability present in the food procurement system depends on the personal motivation of the director of general services, rather than on established protocols. Therefore, it is no surprise that none of the hospitals interviewed had a food procurement strategy in place. In most cases, the food supply comes from a single supplier (a catering company), with a long chain of food suppliers, where producers are a long way down in the food chain. In fact, none of the hospitals interviewed were directly supplied by producers and had little or no contact with local producers, and the tendering process design did not facilitate the sustainable procurement of food. Actually, most tenders offer unique lots, reducing the opportunity for many small and medium-sized enterprises (SMEs) and small food producers to participate. Moreover, the most economically advantageous tendering (MEAT) criteria (part of EU Directive 2014/24/EU), which take into consideration aspects other than the lowest price, such as qualitative, technical and sustainable aspects, are not used. Hence, price is the only award criterion considered and the externalities of the food procured are ignored. Training and lifelong learning on sustainable food systems is non-existent, with high illiteracy on the holistic (systemic) vision of the food system or on the impact of sustainable food production in comparison with the impact of conventional agro-industry food. This lack of training is also linked with an absence of official lines of communication between the IHOs, with the subsequent loss of a chance to trigger learning

improvements through the exchange of good practices or experiences. In addition, no economic investments are allocated to developing a SFPS.

All the above suggests that only the large catering or food industry companies can compete in tenders. The dimensions of sustainability are practically non-existent in the food procurement system; and without any strategy in place, there is a lack of foresight and no roadmap towards a sustainable food transition in the Basque Public Healthcare System.

3.2. Focus groups: established challenges and the related actions

All the participants were keen to contribute to the focus groups, acknowledging the importance of the subject and the focus groups as a step towards starting a discussion about sustainable food procurement with the Basque Healthcare System management board.

In total, 14 challenges were identified with 30 related action plans (Table 2). These are divided into four areas (transversal features; healthy and sustainable food services; sustainable food supply system; and multilevel governance).

4. DISCUSSION

To our knowledge, this is the first time that a group of professionals such as these have met to discuss SFPS within the Basque healthcare sector. Therefore, we consider the outputs from these focus groups as the seed for the 'Territorial strategy development for sustainable food systems in the healthcare services' of the Basque Country (Aranguren & Larrea, 2015). This discussion scrutinizes the challenges and action plans identified within the four areas presented in Table 2.

4.1. Transversals

Participants described two main areas for any successful strategy with a process approach core. First, they see the establishment of an initial diagnosis as a key part of an evaluation and monitoring system. This initial overview helps ascertain where the health institution is at, and where it should work towards. The evaluation and monitoring aspect is a fundamental part within the framework presented by the co-authors of this study (Alberdi & Begiristain-Zubillaga, 2021a).

According to the study 'the uptake of green public procurement in the EU27', there is a positive direct relationship between the existence of a National Action Plan and the implementation of public procurement with environmental objectives. National Action Plans are based on an assessment of the existing situation and set out ambitious goals for the following three years, as well as the measures to be taken to achieve them (Renda et al., 2012). This corroborates the idea of the need for an initial diagnosis as a starting point for successful strategy implementation.

Second, participants identified the need for training among different audiences, from users to workers, as well as identifying the need to include sustainability subjects in university degrees. This is a very hot topic, as future professionals need to be trained in sustainability (Blodgett & Feld, 2021; Carlsson & Callaghan, 2022; Hege et al., 2021).

Training is a key factor for a successful SFPS, as knowledge and understanding of the current food system situation brings also commitment towards sustainable means. Successful examples in Europe exist, such as the Danish Organic Action Plan 2020, an initiative that targets organic food conversion projects through funding educational training for public kitchen workers (Sorensen et al., 2016).

Preliminary interviews with some agents of the Basque Healthcare System highlighted the lack of knowledge in food systems perspective, sustainability parameters, or the impact of current agro-industrial food systems on health, environment and society. This could explain why other transversal parameters identified in the literature, such as gender, communication,

Table 2. Challenges and action plans to work towards sustainable food procurement strategies in the Basque Healthcare System.

Challenge	Action plan
Transversals	
#1: Establish an initial diagnosis of each integrated health organization (IHO)	1. Assess the current situation of the hospital food chain and develop a global diagnosis of the hospital's food environment. Based on this, establish improvement objectives: a) Periodic evaluations to assess changes, obtained benefits, etc. b) Quantification of the general volume of products, and the amount of those that are local (even if it is very few) c) Evaluate the uneaten menus, the leftovers d) Establish a common diagnostic methodology to be able to compare data
# 2: Awareness and training of healthcare workers and users	2. Awareness campaigns in the IHOs based on the diagnostic study of the situation of each IHO (challenge # 13): a) Aimed at different audiences (managers, workers, users) b) Essential to raise awareness among the 'chiefs', to encourage other professionals in the health organization c) Make decision-making power people aware of the real situation of the Basque food production system d) Staff awareness, since they are the ones who will carry out the food strategy. Educational and informational campaigns. Visualization of the problem e) Periodical training on healthy and sustainable eating. Adapted to the needs and the real situation of each IHO 3. Include sustainability in subjects within the University Health Degrees and related professional training 4. Information and campaigns for the general population. Offer dietary information. Involve the dietetic staff
Healthy and sustainable food services	
# 3: Promote healthier and more sustainable menus	5. Review and update of menus, adjusting them to the real needs of the patients (flexibility considering patient's profile, i.e., geriatric patient that cannot chew well, do not pass directly from basal to blended, perhaps work an intermediate menu) 6. Dietitians should reconnect with the food-producing sector to learn about topics such as seasonal produce, methods of production and their impacts, etc. and to pass this knowledge on to menu design

(*Continued*)

Table 2. Continued.

Challenge	Action plan
# 4: Coordinate (control) waste	7. Optimize procurement quantity and storage management 8. Greater control and coordination of the quantity cooked (minimize waste) 9. Coordination with wards (control of admissions and discharges) for an improved estimate of the number of menus to be served. This requires a more effective communication between dietitians, nurses, assistants and doctors 10. Evaluation of waste in different settings, considering the execution of actions explained above to reduce food waste
Sustainable food supply system	
# 5: Prioritize sustainable food	11. Establish sustainable product definition criteria. Discuss and define what is sustainability, sustainable products, local products, ecological products, certified products (integrated production, PGI, etc.), family farming, producer groups, cooperatives, etc. 12. Promote and create producer associations
# 6: Sustainable food procurement strategy (SFPS) as a driver for local agricultural production	13. Adapt the tendering criteria towards sustainable food system criteria 14. Generate meeting points, relationships and knowledge exchange between food producers and IHOs
# 7: Promote the installation of young people in the primary sector	15. Children education, add value to the importance of food producers and the primary sector in general, as a source of health and sustainability. Inculcate food, health, production methods, etc. in the school curriculum 16. Evaluate the current primary sector installation policy, the accompaniment, the facilitation, etc. to design a more successful one 17. 'Monitor' young people interested in dedicating themselves to the first sector
# 8: Access to land, with adequate conditions	18. Evaluate the current land access policy and design a more successful one 19. Monitor non-productive agricultural land. Tax on agricultural land that is not used to produce food
# 9: Establish an initial diagnosis of the local production level	20. Generate a database of local producers, by categories. Whatever the capacity might be from the productive sector, this should not limit purchases from it

(*Continued*)

long-term commitment, economic investment or holistic approach, were not named directly. This suggests that this topic is still at its initial stages within the Basque Healthcare System.

Table 2. Continued.

Challenge	Action plan
Multilevel governance	
# 10: Create a multidisciplinary working group for governance and leadership, with binding capacity	21. Share values and be clear about definitions: healthy food, sustainable food 22. Include the primary sector in the working group 23. Identify resources: people, time, capacities, budget, etc. The group should set both short- and long-term objectives and their organizational structure
# 11: The institution is responsible for easy access to healthy and sustainable food	24. Promote healthy and sustainable food in all hospital settings: patients, equipment, cafeteria, vending, etc.
# 12: Work the legal framework	25. Creation of lobbies to change the legal framework (the ecological movement in Europe is given as an example) 26. Observatory of regulatory experiences in other regions, countries, etc. focused on sustainable, healthy and safe food 27. Insertion of dietitians and nutritionists in Osakidetza (Basque Healthcare System), qualifying them to deal directly with the patients in wards and to be part of the medical team, in order to establish the correct dietary treatment
# 13: Value the organic and sustainable food	28. Prioritize organic food and local food in tenders. Assess local food suppliers' capacity. The two realities of the needs of the organization and the capacity of the providers should come together
# 14: Criteria for tenders with a sustainable vision	29. Currently, economic criteria prevail over sustainability. Life cycle analysis, i.e., the relation between quality and cost, should be considered 30. Establish a requirement in tendering document that divides the products into smaller lots, so that different suppliers can be awarded. Pressure the intermediaries/suppliers to adapt to smaller lots

As Uyarra et al. (2020) explained, public procurement innovation requires a concerted effort to enable cultural change, to improve the technical skills and training of procurers, and to create sufficient critical mass of trained professionals to institutionalize the practice. Therefore, it could be assumed that these two challenges, #1 (Setting up an initial diagnosis) and #2 (Training) would be crucial for working towards a process for SFPS development in the Basque Healthcare System.

4.2. Healthy and sustainable food services

Hospitals are identified as priority organizations caring for the nutritionally vulnerable, where food is closely related to care, treatment and recovery from illness (Gray et al., 2017). A patient's diet should help towards their recovery, and promote sustainable and healthy food environments (FAO & WHO, 2019). Transforming the food system so that it works for public health is one of the most powerful and underutilized intervention points in this field (Reinhardt & Salvador,

2018). Hospitals have the potential to communicate their primary prevention messages through the food they provide and thus become 'a vehicle of improvement and a role model for food habits in the local community' (Department of Health, 2014).

However, as the last FAO publication on public food procurement for sustainable food systems explained, not all healthy diets are sustainable, and not all diets designed for sustainability are healthy (FAO et al., 2021). Improving diets is not a simple process; in fact, the entire food system must be considered (including all actors and institutions involved in the production, processing, packaging, distribution, marketing, consumption and disposal of food products), differentiating even between the purchase and the preparation of the food and the people involved in each of these processes.

Tregear recently explained that for procurement activities with the most sustainability impact and to reduce carbon emissions, the priorities for catering services are to adopt low carbon food waste disposal and to adjust menu compositions, in particular by reducing proportions of ruminant meat relative to fresh fruit and vegetables (Tregear et al., 2022). It is the responsibility of the hospital staff (i.e., dietitians) to design menus that are not only appetising, nutritionally adequate but also sustainable.

The action plan defined in the present study, which suggests the reconnection of dietitians with the food-producing sector, implies a training approach through communication for later implementation in menu design. As explained by Pitts et al. (2018), a successful healthy food programme requires staff training around recipe redevelopment and production, the display and promotion of healthy dishes and the goals and practices of offering a healthy food programme. This is corroborated by Tregear's research on public food procurement, where two areas of attention were pinpointed. First, the sustainable menu design, which gives the opportunity to the public catering services to address environmental and nutritional goals synergistically. Second, the valorization of the catering service staff as contributors to local economies through the multiplier effect of their spending, and as instrumental roles in implementing menu innovations and reducing plate waste, ultimately impacting positively on the environment and nutrition. Therefore, by investing and raising the status of the profession, and providing training, policymakers can boost impacts of public catering across three sustainability pillars (environmental, economic and nutritional) (Tregear et al., 2022).

The hospital staff participating in the focus group also voiced strong opinions during the sessions regarding the vast amount of food waste seen every day due to oversized portions, unappetising meals, inefficient ordering systems, etc. Much literature has explained that managing food services can have a direct impact on food waste and on reducing costs (Ahmed et al., 2015; Gomes et al., 2020; Sahal Alharbi et al., 2020; Sonnino & McWilliam, 2011) as suggested by the action plans of Challenge #4. Standardized food waste assessment protocols are necessary in order to obtain appropriate data collection and better control of the waste generated (Sonnino & McWilliam, 2011). However, the semi-structured interviews revealed that none of the cases had a food waste prevention strategy in place.

4.3. Sustainable food supply system

One action plan identified by the group is that of establishing a definition of sustainable criteria. Literature corroborates the importance of having a clear and shared understanding of sustainable food systems, since not having a shared definition and specific criteria undermines actions (Carlsson et al., 2019). Without clear definitions, targets and roadmaps are not adequately signposted and hence transition towards sustainable actions falters.

The challenges and actions suggest that a holistic and a systems approach view of the local food system is needed to design and develop an effective SFPS. A systems approach introduces a complex socioecological system perspective in the decision-making processes around food (SAPEA Consortium, 2020) and food policy. For example, SFPSs cannot thrive without a

strong local and sustainable food producing system. Indeed, public food procurement impacts upon the different components of food systems and affects a wide range of actors, assets and outcomes. At production level, two key activities that can be influenced by public procurement are agricultural planning and development (FAO, 2021). It is no surprise, therefore, that the participants have pinpointed the challenges that the Basque primary sector of agriculture and prospective new farmers are facing. The disappearance of small farms is not a situation unique to the Basque Country; in Europe one in four farms disappears yearly, and public policies are not helping to abate this (De Schutter, 2019). This has a direct impact on territorialized and sustainable food systems. In response, SFPSs ask for coordination between farmers and policy makers. As IPES-Food highlighted, this is 'bringing new actors around the table, shaping policies in more democratic ways' (De Schutter, 2019).

The need for the school curriculum to promote recovery of sustainable food production and highlight the vital importance of this profession (Galt et al., 2012) is identified as an action plan (AP#15) in the present study.

The participants also identified an issue mentioned in the literature, which is the need to adapt the food procured (the demand) to the capacity of the sustainable food produced (the offer). This has been described as the main barrier for procuring local and sustainably produced food by public institutions (FAO et al., 2021; Perline et al., 2015; Swensson, 2018). For this, the tendering criteria (action plan # 13) need to be adapted to facilitate the inclusion of small-scale farmers. Also, the product available should be constantly updated, for example, by mapping of the local farmers and their produce.

In Europe, with the EU Directive 2014/24, sustainable public food procurement policies have emerged with local sourcing is a key feature, including promotion of organic food (Tregear et al., 2022). Uyarra and Flanagan (2010) explained that the public sector may be willing to pay a premium cost or bear some losses to pursue certain policy sustainability goals and societal needs.

From an agroecological perspective, the action plans within this section would mean the relocalization of the food system, that is, the re-establishment of a more direct connection between those who grow the food and those who consume it (Gliessman, 2016). This could imply the promotion of territorial diets with sustainable relocated socio-economic processes (FAO & WHO, 2019).

4.4. Multilevel governance

All the above shows the importance of having a transdisciplinary working group to develop an adequate SFPS with a systemic view, from production to consumption to waste: a group that analyses the impacts and develops fair decision-making processes (European Commission – DG Environment, 2016). The working group should have a clear and shared idea of their aims within the institution, and hence, the importance of having clear definitions (AP#21) to set long and short-term objectives (AP#23).

In Osakidetza each IHO manages its own food services, therefore the food procurement capacity and articulation is very fragmented. This fragmentation has been shown to discourage investment in innovation, hindering the transition towards sustainability. Suppliers, especially SMEs, may be negatively affected by fragmentation due to a lack of consensus over priorities, inconsistent definition of needs, or frequent changes in policy which increases uncertainty and decreases the likelihood for innovation (Uyarra et al., 2014), and hence sustainability.

The importance of generating spaces for exchange of experiences as a tool between homologous agents, such as the different IHOs, was highlighted during the focus group sessions. Peer-to-peer communication is considered an important formula to share and skill-up on how to do things more efficiently (European Commission – DG Environment, 2016). In the preliminary interviews, the lack of peer-to-peer communication was apparent between those agents related with food processes from the different IHOs.

Knowledge exchange with other professionals can be enriching and good opportunity for promoting the path towards sustainable processes. In the Basque Country for instance, due to the high-quality culinary tradition, attempts for collaboration was made between a well-known chef who designed and developed ecologic menus with local produce for the local IHO.[2] However, the COVID-19 crises hindered this project that it would be pertinent to resume as it could be the trigger the spark for transition towards sustainable food system development. This type of innovative practice has already been carried out in other territories, as is the case of the Valencian Community in the Spanish state, generating a multidisciplinary team of specialists in endocrinology and gastroenterology together with researchers in technology and food safety and nutritionist dietitians and culinary chefs. This multidisciplinary committee aims to identify new technological and innovative solutions to improve food and diet in hospitals as well as the associated logistics processes and the development of new measurement systems that allow the evaluation and maintenance of exhaustive monitoring of the nutritional status of patients (Generalitat Valenciana, 2020).

Challenge #14 brings back the need to adapt the tendering criteria to promote sustainable and local food inclusion. Currently in the Basque Healthcare System price prevails as the most valued awarding criteria, avoiding the application of the 'most economically advantageous tender' (MEAT) criteria, which considers the life cycle of the product. The MEAT criteria appear as a suggestion in many strategies, including the Basque one, but it is not mandatory, which hinders its implementation. As Jenner (2013) stated, the voluntary approach is not working, and the government should set mandatory standards for hospital food without exception. In some cases, the 'procedure of tendering' should be changed which, in many cases, is not accessible to small producers (i.e., option for tendering smaller lots, complicated tendering processes, etc.) (Bloomfield, 2015). Farmers and food producers have found it difficult, almost impossible, to enter the public sector catering market, with strict and time-consuming tendering processes and the caterers' preference for dealing with large food service companies that offer lower costs and deals (Morgan, 2008). Tendering specifications phrased in terms of outcomes or performance are considered to be better at allowing innovative solutions (Uyarra et al., 2014), as oppose to keeping the focus on the cheapest procurement option that hinders innovative steps towards sustainability, as only direct costs are considered and social and environmental costs omitted (Morgan & Sonnino, 2007).

It can be very daunting for one healthcare institution to manage all these actions alone. Ideally, the working group should include outside agents (i.e., primary sector related agents) to help define the roadmap towards SFPS development and implementation. The generation of this working group is a step that Osakidetza (Basque Healthcare System) should take at once. In this regard, literature suggests that external third parties, such as non-governmental organizations (NGOs) or charities related with sustainable food system development, can be good allies in the process of transition and in keeping up the motivation for change (Bloomfield, 2015; Gray et al., 2017).

In agroecology the vertical and horizontal scaling-up approaches highlight the need for multilevel governance. Vertical scaling applies to the institutionalization of policies to support agroecology, while horizontal scaling refers to geographic spread and numerical increase in agroecological processes (Rosset & Altieri, 2018). This concept of vertical and horizontal multilevel governance could be suitable for SFPS development.

5. CONCLUSIONS

This study has identified the challenges and action plans needed to start developing an SFPS in the Basque Health System. Although all the challenges identified by the focus group members had already been identified elsewhere in the literature, this roadmap proposal makes a basic but

necessary contribution in view of the scarcity of other proposals. We, therefore, consider it to be a good starting point.

The research team endeavoured to include agents that could bring a holistic/systemic view for SFPS development. The broad level of challenges identified serves to demonstrate a systemic picture of the entire food system. However, obtaining input from high-managerial profiles from the Basque Government and the Basque Healthcare System Directives was difficult. For successful strategies to be developed and to be sustainable, commitment from a higher level (directives and policymakers) is described as essential in previous studies, since these managers have the decision power to favour the transition process (Alberdi & Begiristain-Zubillaga, 2021a). We hope that the newly published strategy for Green Procurement in the Basque Country 2030 promotes the commitment of decision makers towards the development of SFPSs (IHOBE, 2021).

Future research should be centred on participatory action projects based on processes that generate knowledge on how to instigate social innovation to implement a successful and enduring SFPS in the Healthcare System. To this end, further work needs to be done on the proposal presented in this study, with greater insight into the agroecological approach and development of the resources that each plan requires to succeed.

There is still much to learn, indeed one of the key step observed in this study to start transition is the generalized lack of knowledge of sustainability parameters of the food system and the importance of training to activate the innovation needed in the hospitals' food system. However, we believe that an indirect impact of this study has been to induce some level of empowerment to those healthcare system workers that took part, gaining the strength and confidence to promote the transition towards sustainability.

ACKNOWLEDGEMENTS

The authors express their sincere gratitude to the agents who participated either in the interview and/or in the focus group stages.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

FUNDING

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement [grant number 836353].

NOTES

[1] See https://www.osakidetza.euskadi.eus/portada/.
[2] See https://www.elcorreo.com/bizkaia/nervion/201706/03/eneko-atxa-cocina-para-20170602205655.html/.

ORCID

Goiuri Alberdi http://orcid.org/0000-0002-8861-137X
Edurne Magro http://orcid.org/0000-0002-7495-0119
Mari Jose Aranguren http://orcid.org/0000-0002-1484-4656
Mirene Begiristain-Zubillaga http://orcid.org/0000-0002-9912-8965

REFERENCES

Ahmed, M., Jones, E., Redmond, E., Hewedi , M., Wingert , A., & Gad El Rab, M. (2015). Food production and service in UK hospitals. *International Journal of Health Care Quality Assurance*, *28*(1), 40–54. https://doi.org/10.1108/IJHCQA-07-2013-0092

Alberdi, G., & Begiristain-Zubillaga, M. (2021a). Identifying a sustainable food procurement strategy in healthcare systems: A scoping review. *Sustainability*, *23*(13), 2398. https://doi.org/10.3390/su13042398

Alberdi, G., & Begiristain-Zubillaga, M. (2021b). The promotion of sustainable diets in the healthcare system and implications for health professionals: A scoping review. *Nutrients*, *13*(747), https://doi.org/10.3390/nu13030747

Aranguren, M. J., & Larrea, M. (2015). Territorial strategy: Deepening in the 'How'. In J. M. Valdaliso, & J. R. Wilson (Eds.), *Strategies for shaping territorial competitiveness (pp. 55-73)*. Routledge.

Begiristain-Zubillaga, M. (2016). *Nekazaritza ekologikoko elikagaien banaketa politikaren kudeaketa iraunkorra: Adierazle sistema holistiko agroekologikoaren proposamena* [Doctoral dissertation]. Donostia–San Sebastian: Euskal Herriko Unibertsitatea/Universidad del País Vasco. https://addi.ehu.es/bitstream/handle/10810/18543/TESIS_BEGIRISTAIN_ZUBILLAGA_MIRENE.pdf?sequence=1&isAllowed=y

Blodgett, D. M., & Feld, M. N. (2021). Teaching an interdisciplinary course in sustainable food systems: Science and history meet in 'a world that works'. International journal of sustainability in higher education. *Emerald*, 1467. https://doi.org/10.1108/IJSHE-02-2020-0044

Bloomfield, C. (2015). Putting sustainable development into practice: Hospital food procurement in Wales. *Regional Studies, Regional Science*, *2*(1), 552–558. https://doi.org/10.1080/21681376.2015.1100094

Burlingame, B., & Dernini, S. (2012). Sustainable diets and biodiversity: Directions and solutions For policy, research and action. *Research and Action*, 309. Food and Agricultural Organisation – Nutrition and Consumer Protection Division. https://www.fao.org/3/i3004e/i3004e.pdf.

Carlsson, L., & Callaghan, E. (2022). The social license to practice sustainability: Concepts, barriers and actions to support nutrition and dietetics practitioners in contributing to sustainable food systems. *Journal of Hunger & Environmental Nutrition*, 1–19. https://doi.org/10.1080/19320248.2022.2034559

Carlsson, L., Callaghan, E., & Broman, G. (2019). How can dietitians leverage change for sustainable food systems in Canada? *Canadian Journal of Dietetic Practice and Research*, *80*(4), 1–8. https://doi.org/10.3148/cjdpr-2019-005

Cerutti, A. K., Contu, S., Ardente, F., Donno, D., & Beccaro, G. L. (2016). Carbon footprint in green public procurement: Policy evaluation from a case study in the food sector. *Food Policy*, *58*, 82–93. https://doi.org/10.1016/j.foodpol.2015.12.001

Cioci, G., Hernández-Olivan, P., & Pinzauti, I. (2016). Fresh, healthy and sustainable food. Best practices of European Healthcare. Health care without harm. https://noharm-europe.org/sites/default/files/documents-files/4680/HCWHEurope_Food_Report_Dec2016.pdf.

Cornwall, A., & Jewkes, R. (1995). What is participatory research? *Social Science & Medicine*, *41*(12), 1667–1676. https://doi.org/10.1016/0277-9536(95)00127-S

Department of Health. (2014). *The hospital food standards Panel's report on standards for food and drink in NHS hospitals*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/523049/Hospital_Food_Panel_May_2016.pdf.

De Schutter, O. (2019). Towards a common food policy for the European Union: The policy reform and realignment that is required to build sustainable food systems in Europe. (Jacobs, Nick Clément, Chantal Ajena, Francesco ed.). IPES-Food https://www.ipes-food.org/_img/upload/files/CFP_FullReport.pdf.

Eikelboom, M. E. (2018). Sustainable innovation in public procurement: The decisive role of the individual. *Journal of Public Procurement*, *18*(3), 190–201. https://doi.org/10.1108/JOPP-09-2018-012

European Commission. (2017). Internal market, industry, entrepreneurship and SMEs public procurement. Single markets standards. Public procurement. https://ec.europa.eu/growth/single-market/public-procurement_en.

European Commission. (2019a). Green public procurement. EC Environment. https://ec.europa.eu/environment/gpp/what_en.htm.

European Commission. (2019b). The European green deal. *Brussels European. Commission*, *53*, 24. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2019%3A640%3AFIN.

European Commission. (2020a). EU biodiversity strategy for 2030. Bringing nature back into our lives. Communication for the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the regions, p. 25. https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1590574123338&uri=CELEX:52020DC0380.

European Commission. (2020b). Farm to Fork Strategy – For a fair, healthy and environmentally-friendly food system. Brussels. No. COM(2020) 381 Final. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0381.

European Commission – DG Environment. (2016). *Buying green! A handbook on green public procurement*. Publications Office of the European Union. https://ec.europa.eu/environment/gpp/pdf/Buying-Green-Handbook-3rd-Edition.pdf.

European Committee of the Regions (ECR). (2021). Opinion of the European Committee of the regions – Agro-ecology. 2021/C 106/05, Brussels. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020IR3137&rid=1.

Food and Agriculture Organization (FAO). (2015). Agroecology for food security and nutrition proceedings of the FAO international symposium. 18–19 September, Rome, Italy; 84. https://www.fao.org/3/i4729e/i4729e.pdf.

Food and Agriculture Organization (FAO). (2021). Public food procurement for sustainable food systems and healthy diets – Volume 1. Rome: FAO. https://www.fao.org/3/cb7960en/cb7960en.pdf.

Food and Agriculture Organization (FAO) & World Health Organization (WHO). (2019). Sustainable healthy diets – Guiding principles. Rome. http://www.fao.org/3/ca6640en/ca6640en.pdf.

Frison, E., & Clément, C. (2020). The potential of diversified agroecological systems to deliver healthy outcomes: Making the link between agriculture, food systems and health. *Food Policy*, *96*, 101851, https://doi.org/10.1016/j.foodpol.2020.101851

Galt, R. E., Clark, S. F., & Parr, D. (2012). Engaging values in sustainable agriculture and food systems education: Toward an explicitly values-based pedagogical approach. *Journal of Agriculture, Food Systems, and Community Development*, *2*(3), 43–54. https://doi.org/10.5304/jafscd.2012.023.006

Generalitat Valenciana. (2020). Alimentación y Dieta Hospitalaria Soluciones Innovadoras para los Retos Prioritarios de la Comunitat Valenciana Resumen Ejecutivo. Agència Valenciana de la Innovació. https://innoavi.es/wp-content/uploads/2021/01/resumen_ci_dieta_hospitalaria.pdf.

Gliessman, S. (2016). Transforming food systems with agroecology. *Agroecology and Sustainable Food Systems*, *40*(3), 187–189. https://doi.org/10.1080/21683565.2015.1130765

Gomes, A., Saraiva, C., Esteves, A., & Gonçalves, C. (2020). Evaluation of hospital food waste – A case study in Portugal. *Sustainability*, *12*(15), 6157. https://doi.org/10.3390/su12156157

Gray, S., Orme, J., Pitt, H., & Jones, M. (2017). Food for life: Evaluation of the impact of the hospital food programme in England using a case study approach. *JRSM Open*, *8*(10), 2054270417712703. https://doi.org/10.1177/2054270417712703

Guzmán, G. I., López, D., Román, L., & Alonso, A. M. (2013). Investigación acción participativa en agroecología: Construyendo el sistema agroalimentario ecológico en españa. *Agroecología*, *8*(2), 89–100. https://revistas.um.es/agroecologia/article/view/212231.

Harvie, J., Mikkelsen, L., & Shak, L. (2009). A new health care prevention agenda: Sustainable food procurement and agricultural policy. *Journal of Hunger and Environmental Nutrition*, *4*(3), 409–429. https://doi.org/10.1080/19320240903329055

Hege, A., Giddens, J., Bergquist, E., Stadler, D., Gayer Campbell, C., Cummings, J., Goetze, A., Steinmetz, J., Combs, E., Schwartz, A., Prange, N., Brown, K., Sauer, K., & Spiker, M. (2021). Integration of a sustainable food systems curriculum in nutrition and dietetics education: Assessment from the first year of

implementation. *Journal of the Academy of Nutrition and Dietetics*, *121*(12), 2536–2548. https://doi.org/10.1016/j.jand.2021.02.001

Hernando Saratxaga, G., Izagirre Olaizola, J., & Aguirre García, M. S. (2021). Integration of health care in Euskadi: Qualitative research and diagnosis of the implementation process of Osakidetza–Basque Health System. *Cuadernos de gestión*, *21*(1), 61–73. https://10.5295cdg.181030gh. https://doi.org/10.5295/cdg.181030gh

HLPE. (2014). Food losses and waste in the context of sustainable food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Rome. https://www.fao.org/3/i3901e/i3901e.pdf.

HLPE. (2017). Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome. https://www.fao.org/3/i7846e/i7846e.pdf.

Holt-Giménez, E., & Altieri, M. A. (2013). Agroecology, food sovereignty, and the new green revolution. *Agroecología*, *8*(2), 65–72. https://doi.org/10.1080/10440046.2012.716388

IHOBE. (2021). Programa de Compra y Contratación Verde de Euskadi 2030. Gobierno Vasco, Dto. Desarrollo Económico, Sostenibilidad y Medio Ambiente. https://www.ihobe.eus/publicaciones/programa-compra-y-contratacion-verde-euskadi-2030-2.

IPBES, et al. (2019). S. Díaz, j. Settele, & E. S. Brondízio (Eds.), *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. IPBES secretariat. https://doi.org/10.5281/zenodo.3553579

IPES-Food. (2020). Communiqué by IPES-Food. https://www.ipes-food.org/_img/upload/files/COVID-19_CommuniqueEN%283%29.pdf.

Jenner, K. (2013). Hospital food Can be improved only by legislation. *BMJ*, *347*(dec19 2), f7300. https://doi.org/10.1136/bmj.f7300

Knudson, L. (2013). Healthier hospital food Can affect health of patients and the planet. *AORN Journal*, *97*(6), 9. https://doi.org/10.1016/S0001-2092(13)00474-2

Larrea, M. (2019). Una metodología para la construcción de gobernanza cooperativa. Cuadernos-Orkestra 2019/49. https://www.orkestra.deusto.es/images/investigacion/publicaciones/informes/cuadernos-orkestra/metodologia-gobernanza.pdf.

López-García, D., & González de Molina, M. (2021). Co-producing agro-food policies for urban environments: Towards agroecology-based local agri-food systems. In M. Egerer, & H. Cohen (Eds.), *Urban agroecology: Interdisciplinary research and future directions* (pp. 189–208). CRC Press. https://doi.org/10.1201/9780429290992-9

Mbow, C., Rosenzweig, C., Barioni, L. G., Benton, T. G., Herrero, M., Krishnapillai, M., … Xu, Y. (2019). *Food security in: Climate change and land: An IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*. IPCC. https://www.unep.org/es/node/25409.

Moragues, A., Morgan, K., Moschitz, H., Neimane, I., Nilsson, H., Pinto, M., Rohracher,H., Ruiz, R., Thuswald, M., Tisenkopfs, T., & Halliday, J. (2013). Urban food strategies. The rough guide to sustainable food systems. Document of the FP7 project FOODLINKS (GA No. 265287). https://orgprints.org/id/eprint/28860/1/foodlinks-Urban_food_strategies.pdf.

Morgan, K. (2008 Nov 01). Greening the realm: Sustainable food chains and the public plate. *Regional Studies*, *42*(9), 1237–1250. https://doi.org/10.1080/00343400802195154

Morgan, K., & Sonnino, R. (2007). Empowering consumers: The creative procurement of school meals in Italy and the UK. *International Journal of Consumer Studies*, *31*(1), 19–25. https://doi.org/10.1111/j.1470-6431.2006.00552.x

Pencheon, D. (2018). Developing a sustainable health care system: The United Kingdom experience. *Medical Journal of Australia*, *208*(7), 284–285. https://doi.org/10.5694/mja17.01134

Perline, A., Heuscher, A., Sondag, A., & Brown, B. (2015). Perceptions of local hospitals and food producers on opportunities for and barriers to implementing farm-to-hospital programs. *JAFSCD*, *6*(1), 147–159. https://doi.org/10.5304/jafscd.2015.061.015

Pitts, S. J., Schwartz, B., Graham, J., et al. (2018). Best practices for financial sustainability of healthy food service guidelines in hospital cafeterias. *PCD*, *15*, E58. https://doi.org/10.5888/pcd15.170477

Polanco, N. T., Zabalegui, I. B., Irazusta, I. P., Solinís, R. N., & Del Río Cámara, M. (2015). Building integrated care systems: A case study of Bidasoa integrated health organisation. *International Journal of Integrated Care*, *15*(2), e026. https://10.5334ijic.1796.

Reinhardt, S., & Salvador, R. J. (2018). Health professionals as partners in values-based food procurement. *AMA Journal of Ethics*, *20*(10), 974. https://doi.org/10.1001/amajethics.2018.974

Renda, A., Pelkmans, J., Egenhofer, C., Schrefler, L., Luchetta, G., Selçuki, C., Ballesteros, J., & Zirnhelt, A-C. (2012). *The uptake of green public procurement in the EU27*. European Union. https://ec.europa.eu/environment/gpp/pdf/CEPS-CoE-GPP%20MAIN%20REPORT.pdf.

Rosset, P., & Altieri, MÁ. (2018). *Agroecología: Ciencia y política*. Sociedad Científica Latinoamericana de Agroecología (SOCLA).

Ruiz-Olabuénaga, J. I. (2007). *Metodología de la investigación cualitativa* (4th ed.). Bilbao.

Sahal Alharbi, N., Qattan-Yahia, M., & Haji Alhaji, J. (2020). Towards sustainable food services in hospitals: Expanding the concept of 'Plate Waste' to 'Tray Waste'. *Sustainability*, *12*(17), 6872. https://doi.org/10.3390/su12176872

SAPEA Consortium. (2020). A sustainable food system for the European Union, Berlin. https://www.sapea.info/wp-content/uploads/sustainable-food-system-report.pdf.

Singh, B. K., Arnold, T., Biermayr-Jenzano, P., Broerse, J., Brunori, G., Caron, P., De Schutter, O., Fan, S., Fanzo, J., Fraser, E., Gurinovic, M., Hugas, M., McGlade, J., Nellemann, C., Njuki, J., Sonnino, R., Tuomisto, H.L., Tutundjian, S., Webb, P., & Wesseler, J. (2021). Enhancing science–policy interfaces for food systems transformation. *Nature Food*, *2*(11), 838–842. https://doi.org/10.1038/s43016-021-00406-6

Sonnino, R., & McWilliam, S. (2011). Food waste, catering practices and public procurement: A case study of hospital food systems in Wales. *Food Policy*, *36*(6), 823–829. https://doi.org/10.1016/j.foodpol.2011.09.003

Sorensen, N. N., Tetens, I., Loje, H., & Lassen, A. D. (2016). The effectiveness of the Danish organic action plan 2020 to increase the level of organic public procurement in Danish public kitchens. *Public Health Nutrition*, *19*(18), 3428–3435. https://doi.org/10.1017/S1368980016001737

Stewart, D. W., & Shamdasani, P. N. (2014). *Focus groups: Theory and practice (applied social research methods)* (3rd ed). SAGE.

Swensson, L. F. J. (2018). Aligning policy and Legal Frameworks for supporting smallholder farming through public Food procurement: The case of home-grown school feeding programmes; Working Paper No. 177; International Policy Centre for Inclusive Growth (IPC-IG): Brasilia. https://www.fao.org/3/CA2060EN/ca2060en.pdf.

Tregear, A., Aničić, Z., Arfini, F., Biasini, B., Bituh, M., Bojović, R., et al. (2022). Routes to sustainability in public food procurement: An investigation of different models in primary school catering. *Journal of Cleaner Production*, *01*(338), 130604. https://doi.org/10.1016/j.jclepro.2022.130604

United Nations. (2015). Transforming our world: the 2030 Agenda for Sustainable Development. A/RES/70/1, available at: https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf.

Uyarra, E., Edler, J., Garcia-Estevez, J., Georghiou, L., & Yeow, J. (2014 Oct). Barriers to innovation through public procurement: A supplier perspective. *Technovation*, *34*(10), 631–645. https://doi.org/10.1016/j.technovation.2014.04.003

Uyarra, E., & Flanagan, K. (2010). Understanding the innovation impacts of public procurement. *European Planning Studies*, *18*(1), 123–143. https://doi.org/10.1080/09654310903343567

Uyarra, E., Zabala-Iturriagagoitia, J. M., Flanagan, K., & Magro, E. (2020). Public procurement, innovation and industrial policy: Rationales, roles, capabilities and implementation. *Research Policy*, *49*(1), 103844. https://doi.org/10.1016/j.respol.2019.103844

van Winden, W., & Carvalho, L. (2019). Intermediation in public procurement of innovation: How Amsterdam's startup-in-residence programme connects startups to urban challenges. *Research Policy*, *48* (9), 103789. https://doi.org/10.1016/j.respol.2019.04.013

Willett, W., Rockström, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., Garnett, T., Tilman, D., DeClerck, F., Wood, A., Jonell, M., Clark, M., Gordon, L.J., Fanzo, J., Hawkes, C., Zurayk, R., Rivera, J.A., De Vries, W., Majele Sibanda, L., … Murray, C.J.L. (2019). Food in the Anthropocene: The EAT– Lancet commission on healthy diets from sustainable food systems. *The Lancet*, *393*(10170), 447–492. https://doi.org/10.1016/S0140-6736(18)31788-4

Yin, R. K. (2009). *Case study research design and methods* (4th ed.). SAGE.