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Policy for sustainable consumption – an assessment of Swedish municipalities

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Introduction: Municipalities have a key role to play in developing and implementing policy for sustainable consumption, yet the evidence on the extent of municipalities' work in this area and the constraining and enabling factors they face in this endeavor is sparse. This study examines municipal policies for sustainable consumption and their implementation, using food consumption in Sweden as an example.

Method: It combines data from a nationwide survey, policy document analysis, and a two-year in-depth investigation into two municipalities that serve as case studies.

Results: Findings show that Swedish municipalities have several policies in place related to sustainable food consumption. They use multiple policy instruments to target specific areas of food consumption, and are positive about their current and potential impact in specific areas such as sustainable school meals and tackling food waste. However, municipalities face multiple challenges in delivering sustainable food consumption, including lack of resources and knowledge in some areas. If there is a lack of political support, it can also be a major inhibiting factor. The municipalities welcome national-level strategy, rules and regulations that are supportive of their goals. They rely on good data collection and strong networks and stakeholder relationships to enable their work.

Discussion: Many of the latest recommendations for a comprehensive policy approach to sustainable food consumption are yet to be applied at the municipal level in Sweden. There was little evidence of the use of systems thinking and practices-based approaches for policy design for example. Likewise, strong visions and strategic approaches to food were also lacking. The least coercive, informative policy instruments remain most popular. However, this study did reveal several existing areas where there are strong policy foundations from which these approaches might be developed, such as innovative ways to engage different target groups and a suitable policy mix to deliver specific objectives. Tackling the identified constraints and expanding the enabling factors could further the work on sustainable food consumption at the municipal level in Sweden and provide insights for other countries and studies at the local level.

KEYWORDS

sustainable consumption, policy, food, local government, participatory methods, survey

1 Introduction

In many countries, current levels of consumption and modes of production are unsustainable, overexploiting resources and generating increased levels of pollution. This huge sustainability challenge must be addressed immediately. To successfully tackle these challenges requires a radical reduction in the resource intensity of people's everyday lives and the transformation of producer and consumer systems (Vergragt et al., 2014; Cohen, 2019; Fanning et al., 2020).

This study explores the role of local policy actors in supporting sustainable consumption, taking food consumption in Sweden as an example. It is one of a series of articles looking at various aspects of municipalities' role and influence in delivering sustainable consumption. Dawkins et al. (2021) provides a perspective on the use of indicators to support municipalities' sustainable consumption work. Dawkins et al. (2019) reviews sustainable consumption policy at a municipal level and Axelsson et al. (2023) explores the transition to sustainable consumption at local levels in Sweden.

The food system faces numerous environmental pressures (e.g., water availability and quality, land use change, biodiversity loss, greenhouse gas emissions), and delivers an essential consumption item via multiple actors. It is also a system in which pressures occur throughout often long supply chains, rather than at the point of consumption. These are just some of the many different dimensions of sustainable food consumption. Government policies and practices are essential for delivering a more sustainable food system and for supporting sustainable food consumption. To date, such policies and practices have yet to have the desired impact. In the EU, for example, food policies have been criticized as weak – with a focus on information provision and little regulatory action (Reisch et al., 2013). They have also been described as *ad hoc*, inadequate or largely absent (Sedlacko et al., 2013; De Schutter, 2019), and lacking coherence (Galli et al., 2020).

One major issue in sustainable consumption policy in general is an overreliance on the consumer as the main agent of change (Akenji, 2014). In the food sector, consumers face limitations in their choices due to complexity of global food systems, human cognition and behavior (Mont et al., 2013). The consumer should therefore not be relied on as the sole agent of change (United Nations Environment Program, and International Resource Panel, 2016). Instead, government can support sustainable food consumption activities. This can be done through policy directly, and also by shaping infrastructures and the physical environment, which in turn, can help to shape the discourses and norms of consumption and lifestyles. They can also provide incentives for sustainable consumption and disincentives for unsustainable consumption (Prothero et al., 2011; Vergragt et al., 2014; Mattioni et al., 2022; Mont et al., 2022).

The main goals of such activities should be a switch from an animal to a plant-based diet; lessening food waste; and purchasing more seasonal, local, and eco-labeled products (Gorgitano and Sodano, 2014). At the broadest level, the EAT-Lancet Report sets out what an average healthy diet from a sustainable food system would look like: *"an appropriate caloric intake and consist of a diversity of plant-based foods, low amounts of animal source foods, unsaturated rather than saturated fats, and small amounts of refined grains, highly processed foods, and added sugars* (Willett et al., 2019, p. 448)." For this the authors argued that by 2050 diets must shift, including *"a greater than 50% reduction in global consumption of unhealthy foods, such as red meat and sugar, and a greater than 100% increase in consumption of healthy foods, such as nuts, fruits, vegetables, and legumes"* (Willett et al., 2019, p. 448).

In terms of governance, local governments have an important role and mandate in promoting sustainable consumption. They have a direct influence over consumption choices in their role as planner, service provider, procurer, enforcing authority and role model; local governments also respond to and enforce national-level policies at the local level (Palm et al., 2019).

This local scale offers scope to innovate, test ideas, and develop networks for sustainable consumption (Cohen and Ilieva, 2015). Yet there are several governance challenges faced in both the development and implementation of policies at this level. These include vague, ambivalent, or conflicting goals, which has implications for interpretation and subsequent identification of relevant instruments and measures; also included is power dispersal across levels and sectors, which can hamper implementation (Meadowcroft, 2007). Often, the policy instruments for sustainable consumption that appear easier to implement are of dubious effectiveness, while those that have the potential to generate large impacts often appear very difficult to implement (Grubb et al., 2020). This is particularly true for sustainable food consumption, where the policy instruments most available – behavioral and informational instruments (Sedlacko et al., 2013) – are those that are also most limited for delivering change (Reisch et al., 2013; Welch and Southerton, 2019; Grubb et al., 2020).

Despite the potential and necessity for local governments involvement in driving forward sustainable food consumption, the national level is frequently the focus of research, examining the role of taxes, trade regulations, subsidies or rules and regulations in facilitating sustainable consumption (Scholl et al., 2010; Reisch et al., 2013; Poças Ribeiro et al., 2019; Ng et al., 2022). Empirical research and policy analysis of sustainable consumption at the local level remains sparse (Dawkins et al., 2019; Sibbing et al., 2019; Sonnino et al., 2019). In addition, policy analyzes often pay less attention to complex administrative processes of policy implementation, the role played by policy networks in instrument deliberations and choices, and the practice that policy instrument choices are often made in bundles and accumulate over time (Howlett and Rayner, 2007; Colona, 2023).

This paper is meant to expand knowledge in this area, taking as a starting point the need for stronger sustainable consumption policies and the limited evidence from local government in supporting sustainable consumption in practice. Insights into the inhibiting factors that local governments may face in determining and implementing policy measures are also limited. Hence, the aim of this paper is to increase understanding of whether and how local government take actions to promote more sustainable consumption, using food consumption in Sweden as an example. The study has two main questions:

1. What goals and policies have local governments enacted to facilitate and enable sustainable food consumption within their own municipal operations and among the local population in their area?
2. What do local government officials report as the constraining and enabling factors to implementing sustainable food consumption policies in practice?

To address these questions, quantitative and qualitative data in Sweden were gathered, using document analysis, a nationwide survey of all municipalities in Sweden, and two municipality case studies with workshops, focus groups and interviews. Sweden is considered a frontrunner in work on sustainable consumption (Berg, 2011; Dawkins, 2019). Over the past two decades it has undertaken reviews into sustainable consumption (Government Offices Committee, Sweden, 2005; Swedish Environmental Protection Agency, 2014), implemented several policies to deliver more sustainable consumption, and monitored progress with a range of indicators (Swedish Environmental Protection Agency, 2019). Sweden therefore serves as an apt case to explore sustainable food consumption policy and implementation.

Using the findings of this study, the discussion focuses on whether and how current food policy measures at the municipal level in Sweden address sustainable consumption and draws out wider findings that can be more broadly relevant for other countries and the pathway to more sustainable consumption in general. The case studies are used to demonstrate the potential for municipalities to operate and have impact in this area, and illustrate the challenges faced in delivering more sustainable consumption.

2 Materials and methods

2.1 Sustainable food consumption

When engaging with municipalities this study offered a broad definition of sustainable consumption. It was not specific about the environmental impact of focus (such as material use, water consumption, greenhouse gas emissions) or the actors involved. Instead, the following statement was used to describe sustainable consumption: *consumption of products and services with minimal impact on the environment; that is socially just and economically viable while meeting the basic needs of people – for both current and future generations. Sustainable consumption applies to everyone, in all sectors and in all countries, from the individual to governments and multinational corporations.* This definition is based on the Oslo Symposium on Sustainable Consumption in 1994 (Ofstad et al., 1994, p. 10) and the Swedish Generational Goal which guides environmental action across Sweden (Swedish Environmental Protection Agency, n.d.). The open definition allowed the study to examine how municipalities themselves understood and work with sustainable consumption, incorporating any relevant approaches, indicators or policy.

This study focused on food related demand-side interventions that impact the end consumer, as opposed to more supply-focused interventions such as technical efficiency improvements in the agricultural sector. Hence, the activities explored included consumption by the local government and its agencies, such as food consumption in schools or government offices, and food consumption by the residents in the municipal area. Policy measures targeted at businesses to drive more sustainable food consumption by end consumers, such as initiatives to increase vegetarian options in restaurants were also included.

2.2 Public policy analysis

Policy analysis aims to assess information to understand and improve public policy (Pal, 2005; Dunn, 2017). There is no universally recognized method for policy analysis, but both deductive and inductive methods are employed (Howlett, 2011). Following a similar structure to Sibbing et al. (2019), three dimensions of policy: *policy goals; policy instruments; and policy target groups* (Figure 1) were analyzed.

Policy goals set out what the policy aims to achieve. They can be broad, normative statements about desired ends or more precise objectives about behaviors or conditions that must be altered to address a problem (Vogel and Henstra, 2015). Policy goals can be examined through their content and degree of targeting (Sibbing et al., 2019). Content is the substantive issues that a goal addresses. The degree of targeting can be either general abstract policy aims, operationalizable policy objectives, or specific policy targets.

Policy instruments refer to the interventions used by municipalities to achieve their goals and they can be analyzed for type, gaps, focus, effectiveness, and emphasis. Several policy analysis frameworks, applied to either sustainable consumption or food policy, were identified, these are summarized in Supplementary materials 1. These studies use a range of typologies for classifying types of public policy instruments, including some specifically applicable at the local government level (e.g., Palm et al., 2019). However, few examples exist of policy instrument analysis frameworks that combine sustainable consumption and local government (see Dawkins et al. (2019) for one example), so for this study, the Swedish Environmental Protection Agency (SEPA) classification of policy instruments was adopted. This includes economic, administrative, informative, and R&D instruments (SEPA, 2012). Infrastructural investments (Dawkins et al., 2019) and interactive network governance were added. Interactive network governance covers the following: demonstration projects and experiments, knowledge transfer policies, network management, vision building through scenario workshops, strategic conferences, and public debates (Schröder et al., 2019).

Assumptions made about the policy *target group* and their behavior matter for the effectiveness of the instrument. The incentives (financial, economic, organizational, reputational, political, and personal) of the various instruments, or the environments in which they are introduced, must also align with those assumptions. In addition, the characterization of the target group can also influence policy instrument choice (Pollex, 2017).

Using this structure this study reflects on the *policy mix*. What exactly is meant by 'policy mix', and how it is evaluated, can vary. Rogge and Reichardt (2016) defined the policy mix for sustainability as a combination of three parts: (1) elements, (2) processes and (3) characteristics. Elements include the policy strategy, with objectives and plans and the instrument mix. What is included in these elements is the outcome of the policy process. Both the elements and processes can be described by their characteristics. Characteristics includes the consistency of the elements and whether the processes is coherent. It also covers the credibility and comprehensiveness of a policy mix. This study does not complete a formal analysis of these characteristics individually, nor evaluate the effectiveness, efficiency, equity or feasibility of individual policy instruments (del Rio et al., 2012). Instead, it reflects broadly on the policy mix and highlights gaps, as well as the constraining and enabling factors in the policy process. It then examines the extent to which the policies correspond to or diverge from the latest thinking in policies for sustainable

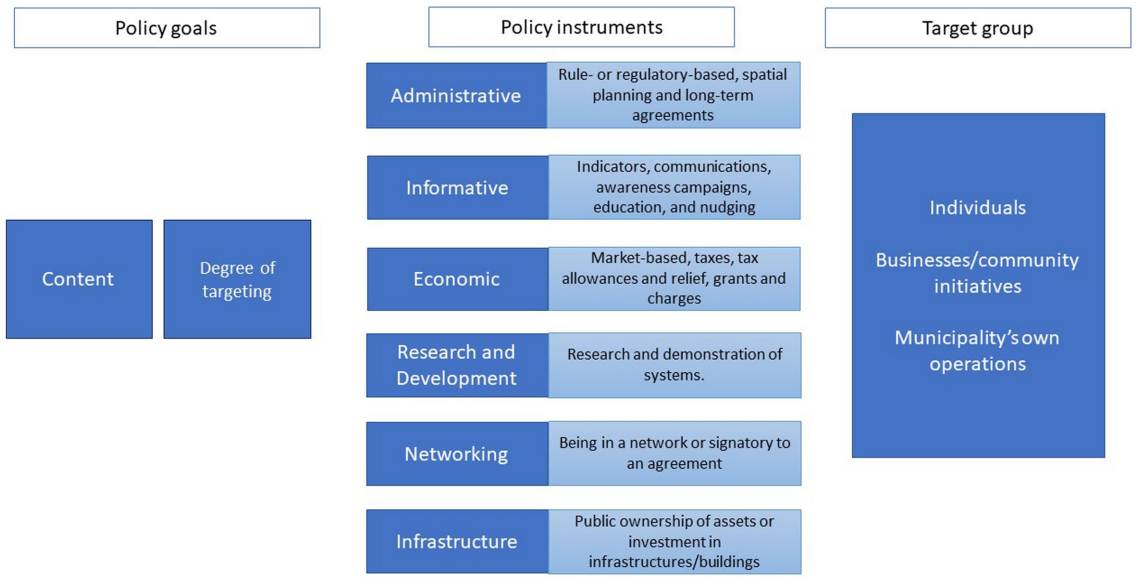

FIGURE 1
Policy goals, instruments and target group building on Sibbing et al. (2019) and Dawkins et al. (2019).

consumption and align or otherwise with findings from other studies internationally.

2.3 Local government in Sweden

Municipalities have a large degree of autonomy in Sweden, including self-governing of a large budget, taxation rights, and a high level of authority in spatial planning – the so-called planning monopoly (Palm et al., 2019). They can devise their own goals, targets, or strategies for sustainable food consumption, applying different modes of governance and targeting different groups in society. While Sweden might be one of only a handful of European countries with a high degree of local autonomy, mature democracy and financial strength (Ladner et al., 2015), the role and responsibilities of Swedish municipalities in contributing to the welfare society is similar to arrangements in other Nordic and European countries (Sandberg, 2022). However, specific strategies and solutions may vary and be applicable to the local context. For example, procurement of food for school meals can vary considerably between European countries (Piirsalu et al., 2023).

In terms of influence, Swedish municipalities can have an impact on resident behavior through spatial planning policy, information provision, education, and waste policy. They can also influence the behavior of municipal employees via education, as well as organizational regulations (e.g., in procurement), targets and official guidance. The local government is also a large employer, employing 20% of the Swedish labor force in 2019 (Statistics Sweden, 2022).

For businesses and community initiatives, the municipal government has several options. A less coercive policy might be to provide information and training for example. In terms of economic and investment instruments they can adjust business taxes and investment decisions, and also influence via spatial planning. For their own municipal operations, they are obliged to report on their key performance indicators and can set targets for food procurement and serving. They also have the possibility to regulate the waste and energy use within their own operations. Control over services provision (such as schools and elderly care) is varied across municipalities Sweden, with most of the municipalities keeping these services 'in-house' and therefore maintaining centralized control and others outsourcing to a range of third-party providers (Burström, 2015; Swedish Parliament, 2019).

2.4 Mixed methods approach

To understand the breadth and depth of policy support for sustainable food consumption at the local government level, this study uses a mixed methods research approach, gathering and analyzing both qualitative and quantitative data (Johnson et al., 2007). This approach also allows for corroboration, along with the opportunity for triangulation or the identification of contradictions or new perspectives (Greene et al., 1989).

This study explores the breadth of sustainable food consumption activities undertaken by local government in Sweden using a nationwide survey of all municipalities in Sweden (119 respondents out of 290 municipalities in Sweden). This provides insight into the type and extent of sustainable food consumption goals and policy in Sweden. To elaborate on this and increase the depth of understanding, it delves into the policy implementation in practice in two Swedish municipal case studies: Upplands Väsby and Lund. Here participatory approaches (focus groups, workshops, and interviews) are used to gather insights into enabling and constraining factors of policy implementation, as well as policy document analysis to assess goals and policy mixes for sustainable food consumption. This provides stakeholder perspectives on implementation as well as greater insight into the policy landscape.

TABLE 1 Main function and areas represented in the two focus groups.

Group	Municipality (no. of participants per meeting)	Main function and areas represented
A	Lund (7–9)	Strategic environment and sustainability Service Management, incl. buildings, land and meal services Waste Education administration Energy provision
B	Upplands Väsby (7–10)	Strategic environment and sustainability Procurement and purchases Education administration Waste Building and maintenance services

TABLE 2 Reference group, focus group, and workshops schedule.

Meeting	Theme	Date
Reference group meeting 1	Review research questions, methodology, delimitations and framings of the research	Nov 2016
Focus group meeting 1	Challenges to achieving sustainable consumption	Mid 2018-Early 2019
Focus group meeting 2	Working with sustainable consumption in practice	
Workshop I	Indicators – measuring and follow-up environmental impacts from consumption	
Focus group meeting 3	Overcoming barriers for implementing sustainable consumption policies	
Reference group meeting 2	Review preliminary results	March 2019
Workshop II	Synthesis – presentation and discussion of preliminary results, joint reflection and learning across the case studies	Oct 2019
Reference group meeting 3	Review analysis and policy recommendations	March 2020
Reference group meeting 4	Reflection on results, next steps to build on project findings	Nov 2020

To understand the context in which local government operates, a summary of how the national-level food policy and strategy relates to the local government is undertaken. In addition, a reference group was formed to provide national and regional policy context and reflection and validation of the emerging findings, made up of members of the following organizations: County Administrative Board, Statistics Sweden, National Agency for Public Procurement, the Climate Municipalities, Swedish Consumer Agency, and SEPA (in Swedish: Länsstyrelsena, Statistikmyndigheten, Upphandlingsmyndigheten, Klimatkommunerna, Konsumentverket, Naturvårdsverket).

The two case study municipalities were selected based on the assumption they would most likely illuminate the research questions for the project (Yin, 2014) and with expectations of their information content (Johansson, 2007), so-called information-oriented selection (Flyvbjerg, 2006). Hence, their previous and ongoing work with sustainable consumption was central in this regard. Further, to maximize the possibilities for mutual exchange and learning, the study sought to include municipalities of different sizes and geographical location, and that were committed to engage in the process (i.e., that they had available personnel and resources necessary to support the work). Lund is located in the southern part of Sweden; Upplands Väsby is located on the outskirts of the Stockholm metropolitan area. In 2022, there were more than 128,000 inhabitants in Lund and almost 50,000 inhabitants in Upplands Väsby (Statistics Sweden, 2022). At the time of the study, both municipalities had established targets and policies addressing sustainable consumption. Lund's environmental program (LundaEko II 2014–2020) specified eight prioritized areas, of which 'sustainable consumption' was one. In Upplands Väsby, sustainable consumption was mentioned in the Energy and Climate strategy (Upplands Väsby municipality, 2017), where the municipality set out the ambition to reduce the emissions of greenhouse gases until 2040 from both a production- and consumption-based perspective.

The participatory process was designed to explore, in an interactive setting, different aspects related to the municipalities' ongoing efforts to reduce environmental and climate impacts from consumption in different areas. In each municipality, one focus group with 7 to 10 municipal officials was formed. Identification of participants was undertaken in dialog with the municipality's appointed contact person for the project. Considering the cross-sectoral nature of consumption practices, the study aimed to involve participants with different experiences, representing different departments and operational areas related to consumption (Table 1). An overview of the reference group, focus group and workshops schedule is given in Table 2.

2.5 Data collection

For each case study municipality (Upplands Väsby and Lund), the following policy documents (current at the time of the study) were collected:

Upplands Väsby:

- Multi-year plan with budget 2018–2020;
- Municipal Energy- and climate strategy for Uplands Väsby Municipality;
- Upplands Väsby City Plan 2040;
- Guidelines for sustainable procurement;
- Program with goals and guidelines for activities carried out by private contractors;
- Waste Management Plan (SÖRAB) 2000–2020;
- Waste Tariff for Upplands Väsby municipality 2018;
- Environmental statement - A summary of Upplands Väsby Municipality's environmental work 2016;
- Multi-year plan with budget 2019–2022;
- Multi-year plan with budget 2020–2022;
- Policy program for municipal served meals 2018–2020.

Lund:

- LundaEko II Lund Municipality's Program for Ecologically Sustainable Development 2014–2020;
- Annual Environmental statement 2017;
- Annual Report 2017;

- Dietary policy for Lund Municipality, policy document 2015;
- Dietary policy for Lund Municipality, publication;
- Waste Management Plan;
- Regulations for Waste Management for Lund Municipality;
- Procurement Guidelines for Lund Municipality.

These documents were used to identify policy goals and instruments related to sustainable food consumption. Any policies, strategies or programs formally adopted by the municipality were included in the data collection, and any food-related interventions were identified and listed.

To investigate the practical implementation of these policies, three focus group meetings and two workshops were held with between 7 and 10 participants representing different departments for each case study municipality, and all the discussions were recorded and transcribed verbatim. Meetings lasted about 3 hours and were led by two facilitators from the research team. Informed consent was obtained (verbally) from all participants prior to the engagement.

The aim of the *first focus group meeting* was to introduce the participants to the project and the research process and to capture participants' own interpretations and understandings of sustainable consumption and ongoing activities in each municipality. The *second meeting* aimed to deepen the understanding of the municipalities' work with sustainable consumption by discussing perceived opportunities and barriers to support sustainable consumption in different areas, including food (along with transport, procurement, energy, waste, building and maintenance, strategic plans/general). The *third meeting* centerd on institutional and organizational strengths, weaknesses, opportunities, and threats – *a SWOT analysis* – for working with sustainable consumption. Discussions also explored and identified different types of policy instruments to reach their set targets on sustainable consumption, as well as key actors and networks with which they currently collaborate or interact. A workshop was held specifically to discuss the role of indicators of progress towards sustainable consumption, with the findings presented in Dawkins et al. (2021). Also a final workshop was held to discuss and validate preliminary results, as well as facilitate exchange experiences between the municipalities.

At the end of 2018 and early 2019, 15 follow-up interviews were held with the participants of the focus groups and workshops. Interviews aimed to capture stakeholders' views of the research process, elicit their perspectives on the municipality's role and opportunities to promote sustainable consumption. The format for the interviews was semi-structured (Kvale, 2007) with pre-identified themes and questions, allowing for flexibility while still covering key questions. The interviews were made via Skype or phone – except for one that was made in person – and lasted about 20–60 min. Two additional interviews were held with the municipal project leads in September and October 2020, to verify the food policies identified from the policy document analysis. Here participants helped to fill in any gaps in the policies identified and check the policy categorization. Where necessary, they were also asked to differentiate between policy instruments and targets, and clarify the target group of each policy. This type of dialog with policy officials is often necessary for policy document analysis, as policy documents can contain a statement of the problem and the intended consequences, but sometimes goals must be inferred (Vogel and Henstra, 2015).

For the national policy context, Swedish national-level food strategy and policy documents were collected and any items related to municipal activities were coded as relevant to the study. The documents include the Swedish Food Strategy 2017–2030 (Swedish Parliament, 2017), National Strategy on Sustainable Consumption 2016 (Government Offices of Sweden Ministry of Finance, 2016), and the National Food Waste Reduction Plan (Livsmedelsverket et al., 2018).

A nationwide survey on sustainable consumption activities was sent electronically to the sustainability or environmental officer in all 290 municipalities in Sweden in 2018, and 119 responses were received (Axelsson et al., 2023). The survey included 26 general questions on sustainable consumption activities by local government and six supplementary questions specifically related to food. One of the main questions was focused on food consumption, asking whether food consumption was an area of work and data collection for the municipality. Of the 119 respondents to the survey, over 80% responded that they worked with sustainable food consumption in their municipal operations. They were then given the option to answer the six supplementary questions on food consumption, covering a range of possible objectives, targets and policy measures. These were selected based on findings from an earlier study (Axelsson and Bell, 2018) about municipalities' perceived barriers and opportunities to establish sustainable food practices in their own operations, as follows:

- Working with the municipal operations, residents, and businesses on sustainable food consumption (*objectives*)
- Collecting data on municipal operations, residents, and business food consumption (*objectives*)
- Targets for organic food purchases and reducing animal products (*targets*)
- Food certifications (*policy*)
- Requirements on private service provider for offering vegetarian menu choices (*policy*)
- Training staff in vegetarian or climate-smart cooking (*policy*)
- Municipal food purchases for events (*policy*)

These six supplementary food questions were completed by respondents representing 103 different municipalities across Sweden. This study draws on all the survey questions related to food. The full list is given in Supplementary materials 2. For the results analysis, it also draws on other relevant survey questions, such as the types of policy instruments used for sustainable consumption for triangulation of the case study results.

2.6 Data analysis

The data from the case study transcripts and policy documents were analyzed to identify policy goals and instruments used by municipalities in Sweden to facilitate more sustainable food consumption. First, the relevant national and municipal level goals were identified. Any specific policy instruments were then coded by area of activity to analyze their range and depth, using an inductive approach to find emerging themes. The target group of the policies were then identified in a similar way to Persson et al. (2015). This was followed by identifying the types of policy instruments used by municipalities to achieve those goals, applying the SEPA policy classification framework with additions of investment and network governance categories (Figure 1). This was supplemented with data

from the nationwide survey where applicable, completing descriptive analysis of the questions relevant to food consumption.

The most detailed data on constraining and enabling factors comes from the qualitative data in the in-depth case studies, where participants discuss these issues extensively throughout the focus groups, workshops, and interviews. This was used to identify key enabling and constraining factors for municipalities in implementing sustainable food consumption policy. For the qualitative data analysis of transcripts, the data were categorized using NVivo, with a mix of deductive and inductive coding (Saldaña, 2021). First, a screening of all the data from focus groups, workshops and interviews was completed, using predefined inclusion criteria to identify any data related to food. These three criteria were: food waste, procurement in connection to food, and wider food systems in general, such as production systems or Swedish food production. The analysis of the included text was then completed using an inductive approach to identify emerging themes. Themes in the data (coded text) were synthesized using Excel spreadsheets to identify enabling and constraining factors. Throughout the analysis, all the coded text was referenced for transparency. The quotes from the interviews and focus groups presented in the text have been edited for the purpose of language and anonymity of the participants.

3 Results

3.1 National food policy context

The main national strategy relevant to sustainable food consumption in Sweden is the Swedish Food Strategy 2017–2030 (Swedish Parliament, 2017), for which the main objective is "*to create a competitive food chain in which overall food production is increasing, while achieving relevant national environmental objectives, with a view to creating growth and jobs and contributing to sustainable development throughout the country* (p. 10)." The National Food Strategy is currently under review and an updated version (2.0) will be in place from 2024.

The strategy includes few specific mentions of the role of municipalities in delivering the strategy other than as the obligation to support implementation of all the measures. But it is noted that the National Food Agency shall, through its Competence Center for meals in nursing, school and care, promote the continued development of public meals for sustainable and healthy food consumption in the public sector. This is an area of responsibility for municipalities under their obligations to provide schooling, waste collection, library, housing, elderly care services and water and sewage systems (SALAR, 2021), suggesting that close collaboration between the municipalities and the National Food Agency is warranted. In addition to the National Food Strategy, an Action Plan for 2020–2025 has been developed to support its implementation (Government Offices of Sweden, 2016a), thereby contributing to Agenda 2030 target 12.3.

The National Waste Reduction Plan (Livsmedelsverket et al., 2018) is a second strategy relevant for food consumption. It lists nine action areas to tackle food waste with concrete proposals for each. Of these, four areas are considered of priority:

- A clear national goal [for food waste reduction] and development of follow-up methods.
- Active cooperation between industry actors in the food chain.
- Create opportunities to increase awareness and bring about behavioral changes among consumers and make it easier for different consumer groups to make waste-minimizing choices.
- Investigation, research and innovation.

Municipalities have an important role in these priority areas. They oversee the development of municipal waste plans, in close collaboration with other actors operating in the municipality. In its regulations on municipal waste planning, the SEPA emphasizes that municipalities should work with waste prevention measures such as reduced food waste. Furthermore, the new regulations and guidance place great emphasis on collaboration both within the municipality and with other stakeholders when creating the plan. Under the plans, municipalities are responsible for disseminating information to citizens on how they as consumers can act to reduce their food waste, as well as for integrating food waste issues into education. They are also responsible for preventing food waste in municipal catering establishments and for waste prevention in their own operations.

Specifically related to consumption, the National Strategy on Sustainable Consumption for Sweden was released in 2016 (Government Offices of Sweden, 2016b). It includes sections on sustainable waste management, country of origin labeling for food, and links to the Swedish Food Strategy. It emphasizes the importance of the national government working in collaboration with local governments, the business sector and civil society to help households consume more sustainably but contains no obligation for municipalities to take certain actions. For example, as part of the actions under this strategy, the national government put in place targets for the public procurement of organic food, but there was no formal or legal obligation for local governments to reach this target at the municipal level.

Several recent reviews highlight gaps and challenges for sustainable food consumption policy at the national level in Sweden. For example, a recent report from the Food Systems Summit 2021 (United Nations, 2021), described as a turning point for recognizing cities as key agents in shaping food and climate actions (Milan Urban Food Policy Pact, 2022), lists progress on sustainable food and future pathways. For this event, Sweden hosted several food system dialogs and identified Swedish strengths and challenges for developing more sustainable food systems and achieving the Sustainable Development Goals by 2030. A highly relevant output is the acknowledgement that the Swedish government, regional councils and municipalities all have high ambitions but are not working in step together (Government Offices of Sweden, 2021).

To drive forward work at the global level, Sweden joined four international coalitions of the UN Food Summit 2021 that are highly relevant for sustainable food consumption. These include access to healthy school meals; healthy and sustainable diets linked to obesity, malnutrition and lack of access to healthy food; food waste; and agricultural innovations for climate. The dialogs during the summit identified time lags and discrepancies between initiatives at a more regional and local level compared with policy, regulations, and other governance at national level. Improved governance and more distinct and harmonized regulation were therefore sought. The public sector was identified as an important and influential actor via public sector meals and procurement, especially in schools.

Recent analysis on the national policies for sustainable food consumption in Sweden (Gong and Maltais, 2022) also agree that the Swedish national visions for a fossil-fuel–free food sector lack suitable

goals or aims for low carbon food consumption and what changes to food consumption will be required. They highlight the lack of clarity on whether reducing the climate impacts of food is a policy goal at the national level and what policy instruments might be implemented to achieve any such goal.

3.2 Local food policy

Given that the national policy context puts few obligations on municipalities to deliver sustainable food consumption, municipalities have the freedom to set their own goals, objectives and targets and the policy. Looking across the study datasets, it is apparent that municipalities do have several goals and targets related to sustainable food consumption and associated policies in place.

3.2.1 Goals, objectives and targets

The document analysis for the case studies shows that the two case study municipalities have a mix of aims, objectives and targets and policy relevant for sustainable food consumption. These range from general aims targeting sustainable consumption broadly that *"everyone who lives and works in the municipality should contribute to more sustainable consumption*" or to have "*sustainable urban development and create conditions for sustainable energy systems, sustainable use of resources and sustainable management of waste and recycling*," to more specific targets such as "*the total amount of household waste will decrease by 2 per cent per year from 2013 to 2020*." In terms of the degree of targeting overall, 35% were abstract long-term goals, 38% were more specific objectives or targets and 27% were a policy to achieve those objectives or goals.

The goals and/or objectives related to the following aspects of the food system were identified: organic food purchasing and consumption, sustainable food consumption (related to diets), food waste reduction, general sustainability/greenhouse gas emissions reductions/waste or circular economy, sustainable farming/food production or land use, and sustainable procurement. These goals and objectives were dispersed across several policy and strategy documents and often involved several different departments depending on whether they related to food served in the schools, waste collected from the households or food procured for the administrative department.

In terms of sustainability framing and indicators, the goals were quite broad. Some focused on health outcomes, with others more applicable to climate change mitigation or waste reduction. There were also several goals related to more general environmental pressures from agriculture (such as chemical use). While it is clear that Lund's and Upplands Väsby's sustainable consumption related activities have links with climate change mitigation (participants made references to ambitious climate targets in line with the Paris agreement as well as Agenda 2030 and the SDGs), their work on sustainable food consumption appears not to be initially motivated or defined by climate change mitigation efforts. However, this has been gaining increasing importance and has further motivated their work on addressing unsustainable food consumption patterns and reducing negative impacts from food consumption. As one participant mentions:

> "*One area where we started early on is our travel policy and we have also worked for a long time with meals and food. [Initially] not for climate reasons but as knowledge has increased about the climate impacts from food it [the climate issue] has been woven into that work.*"

The nationwide survey did not include a question about goals of objectives for sustainable food in general, but instead asked specifically whether municipalities had agreed targets for the percentage of organic food or reducing the amount of animal products in the meals of their operations (such as schools or elderly care). The results give an indication of the breadth of work in this area across Sweden, with over 90% of the 103 respondents stating that they have targets for the share of organic food they purchase and 62% have targets to reduce the amount of animal products in their meals.

3.2.2 Municipal policy instruments

The municipal policy instruments identified in the nationwide survey and case studies' municipal strategy documents were analyzed by the target group and the type of instrument selected to implement the policy.

3.2.2.1 Policy instruments

Swedish municipalities were found to have a variety of policies in place to support sustainable food consumption. The case studies revealed the extent of policy related to food consumption, with over 40 policies identified across the two case studies. The nationwide survey showed that a majority of municipalities do have some policies in place, with over 80% of the survey respondents saying that they worked with specific policies such as vegetarian and vegan food in catering.

At the case study level, interventions related to food consumption were identified and linked to the categorization of their goals (see Table 3). There is some variation between the cases, with one coming from the perspective of waste reduction and the other from a wider sustainability viewpoint.

In the nationwide survey, municipalities were asked whether they made any of four policy interventions: fairtrade or environmental certification of meals, training of staff in climate-smart or vegetarian cooking, and the use of the 'vegonorm' (vegetarian or vegan food as standard) in their conferences and events. Figure 2 shows the percentage of respondents that answered positively (either "completely," "to a large extent," "or to some extent") to these questions. The most common measure was the use of "vegonorm," with over 80% of the 103 respondents stating that they had this intervention in place, indicating that a significant proportion of municipalities in Sweden do have at least some policy in place to support sustainable food consumption.

3.2.2.2 Target groups

The data show that at the nationwide level, the most common target group for municipalities' food policy are the municipalities' staff working to address sustainable food consumption in their own operations. However, the two case studies revealed that they also have a significant proportion of activities, largely information campaigns, targeting private individuals.

Categorizing the policy instruments identified in the case study policy documents and transcripts by the target group shows that the most common target group for sustainable food consumption policy is the municipalities' own operations and services, with 45% of the measures targeting municipal officials or municipal operations. However, this was closely followed by individuals, which were the target of 39% of activities, largely through information campaigns, and businesses at 16%. From the nationwide survey however, municipal operations, such as schools and elderly care, are by far the most common target group for sustainable

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TABLE 3 Examples of policy instruments related to sustainable food consumption in case study municipalities.

Goal category	Examples of policy instruments
General environmental sustainability/waste that would include elements related to food. (e.g., environmental teaching)	• Rolling exhibition with cargo bike, books about sustainability, environment, and climate. Participation in municipal events such as harvest festival, culture night • Environmental issues in teaching at some schools and preschool
Food waste	• Implement projects to monitor food waste (e.g., measuring coffee waste in older persons residents' home) • A discount on the waste tax if ordering collection of food waste • Food waste competition for all schools within the regional waste management company municipalities, in 2019 or 2020 • Information mailings on waste quantities
Procurement	• Setting climate and energy requirements in procurement
Food consumption (including organic food)	• Employ a meal strategist to reduce waste and improving the municipality's meals by increasing the proportion of organic food, vegetarian in the menus and helping businesses reduce food waste • Training and dialog with kitchen staff and food suppliers on, among other things, an increased share of vegetarian food • Include a specification of competencies on meal policies when recruiting staff or making procurements
Supporting sustainable food production systems	• Develop processing operations for a local or regional market to meet increased demand for locally produced goods • Collaborate with food chains to increase the number of climate-smart food options in stores

food policies, and this practice is also relatively widespread in Sweden (Figure 3). Of the municipalities that responded to the nationwide survey, 86% reported that they work with this issue and collect data to support their work. This closely reflects the influence and mandate that municipalities have over the different target groups, with actions concentrated in their area of most direct influence.

Several municipalities (including the case of Upplands Väsby) outsource some of their food servings operations to external actors, resulting in less direct control, and raising the importance of contractual specifications. One example of how this works in practice was mentioned by participants in the focus group discussions, where they explained how they placed a contractual requirement on the food caterer in schools to weigh any food waste. Participants noted that it was relatively straight forward to specify this for an external contractor. The nationwide survey suggests that half of those municipalities that outsource some or all of their operations (50 municipalities in total) put demands on their external actors to provide vegetarian or organic options or reduce waste (Figure 4).

Target groups were a topic of discussion in the case studies, with participants stating that they could have large impacts on sustainable food consumption through school meals. Although, they discussed this in terms of potential, rather than current impact and raised several limiting factors such as the size or availability of kitchens and the cost of running on-site kitchens. There was also some discussion of the different target groups, with one participant noticing variation in ease of engagement by different age groups.

> *"I wrote [in answers to questions in the focus group] that parents and the elderly are a challenge to [target and address] the meat norm. But young citizens are an opportunity, it feels like they are our hope when it comes to food [they are more positive towards vegetarian and vegan food]."*

3.2.2.3 Policy instrument type

The instrument type used by municipalities to facilitate sustainable food consumption are mainly information provision and administrative (rule- or regulatory-based instruments, spatial planning and long-term agreements, surveillance). This was the same in both the case studies and the nationwide survey.

For the case studies, Figure 5 shows the categorization of the policy instruments, with the majority classed as either informative (44%) or administrative (38%). This finding is supported by the transcript analysis, with the analysis revealing that the most discussed instruments are informative or administrative. In some cases, the policy intervention and type of instrument was not specified at all in the policy documents, with just the overall objective included. There was little use of economic instruments or research and development for food and some limited use of networks and investment or infrastructure. These measures may be less relevant for sustainable food consumption or less available to municipalities. Alternatively, they may be deemed less acceptable for political reasons. They may also be used to a limited extent but not formally recognized in municipality policy documents.

3.3 Putting local food policy into practice

The case study transcripts were further analyzed to explore what participants thought were the most constraining and enabling factors for implementing sustainable food consumption policy. This revealed the following key themes: mandate, competence, support, how they govern, data collection, impact, supply/food system, relationships, and target groups. These topics were described in the discussions in an enabling way, constraining way, in both or in a neutral way. Competence, governance approach, impact, and support for the municipalities' work were the mostly commonly encountered topics. Participants described data collection mostly as an enabling factor whereas competence and mandate they described as constraining. There was little discussion about the target groups of policies in general terms, although this topic was closely linked with conversation on impact. Here participants talked about the groups where they believed they had most impact such as school children and staff, or with those they said that had little impact on such as adult residents.

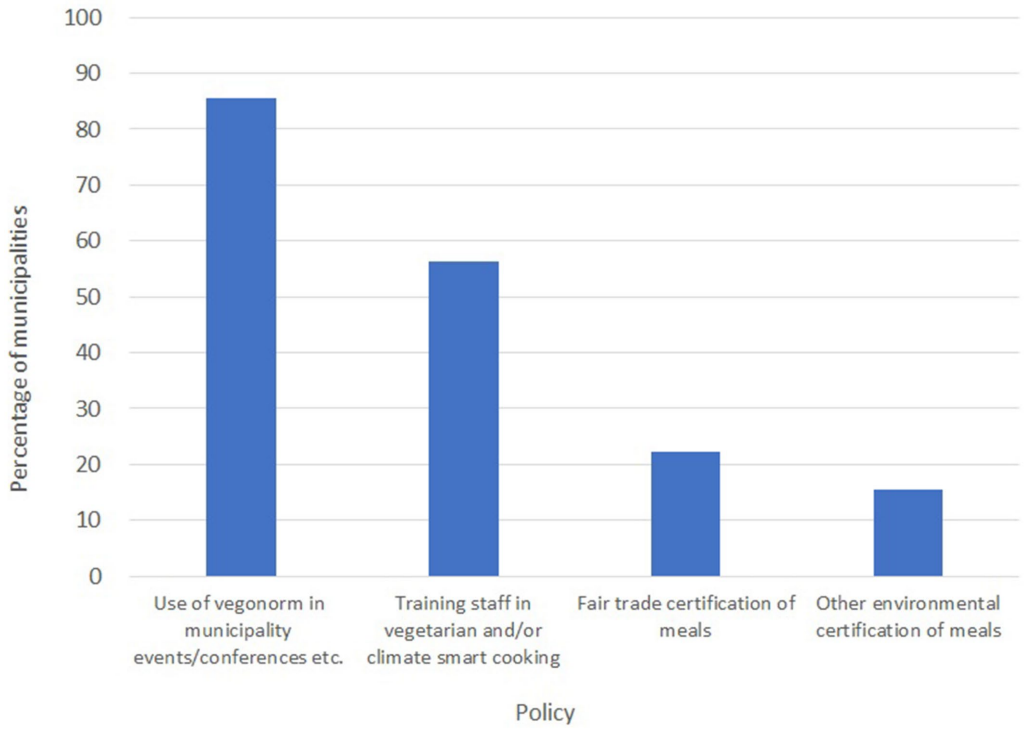

FIGURE 2
Percentage of survey respondents who answered positively to whether they have each of the interventions in place.

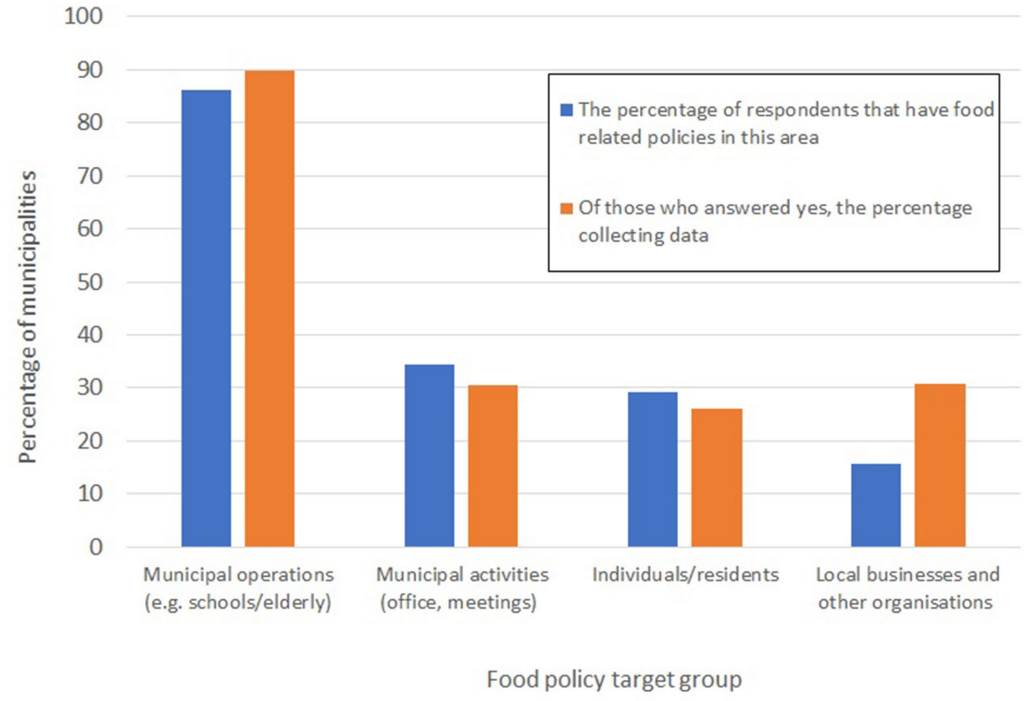

FIGURE 3
The percentage of respondents in the nationwide survey who work with food for each target group.

3.3.1 Infrastructure and mandate from national government

Both case studies identified factors that support their work with reducing food waste. One important factor was related to availability of appropriate infrastructure (coded as supply/food system), such as having smaller on-site kitchen facilities. This allows the caterers to save and reuse from one day to the next, as opposed to schools with centralized kitchens for example, which

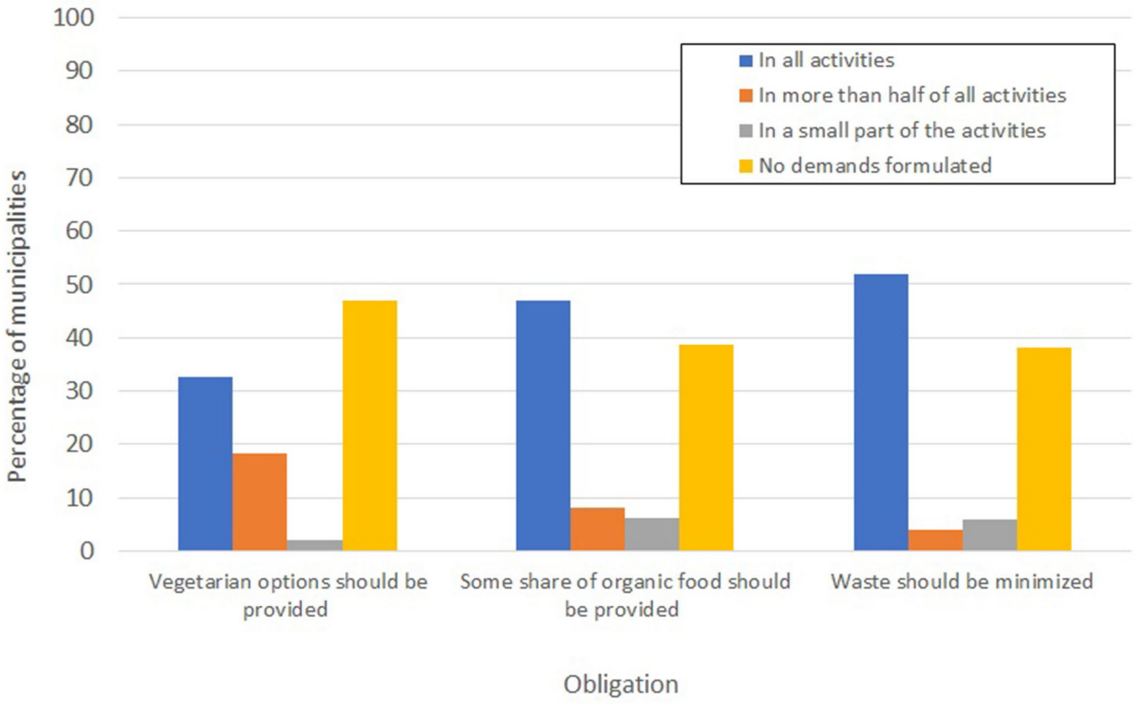

FIGURE 4
The percentage of respondents in the nationwide survey who place certain obligations on their outsourced food suppliers.

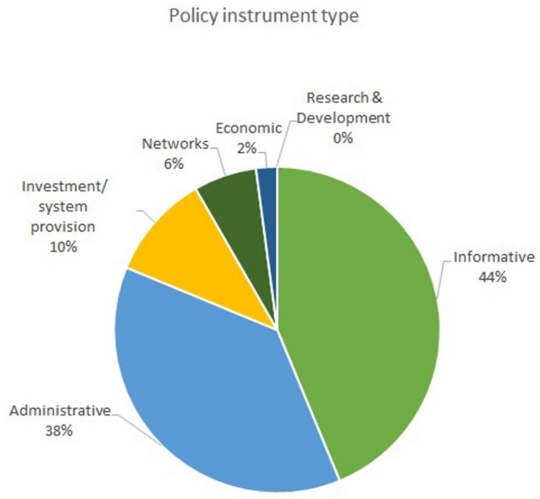

FIGURE 5
Types of policy instruments used by the case study municipalities to facilitate sustainable food consumption according to the case study focus group transcripts and document analysis.

cannot save the food on-site and it therefore becomes waste. A smaller on-site kitchen also gives more flexibility to try different vegetarian options without the risk of having to discard uneaten food if it is not successful. However, as a participant notes,

> *"smaller kitchens in schools or elderly care homes creates more flexibility but it could also mean a higher cost than having off site larger facilities and deliver out food."*

A second enabling factor is support and mandate from national government. New national standards for measuring food waste have supported the work for meal strategists in the municipality. It helps them compare data with other municipalities and follow up on measures taken.

> "*I followed up on [the catering firm's] measurements of food waste,* i.e., *production waste, serving waste and plate waste. But what I have been missing, which has now finally come just last week, was a national measurement standard, which means that I can suddenly compare the data with other activities and municipalities…*".

However, a constraining factor in this case was the lack of resources to collect data on food waste. One participant gave the example of needing designated staff to measure the amount of food waste in a school or care home. Participants also noted the difference between the possibilities to implement certain actions in the own operations versus when they rely on caterers, related to their mandate to take action.

3.3.2 Political support and support from networks and colleagues

Several participants raised the work environment, political support, support from networks and good relationship with contractors and/or catering staff as important supportive factors for their work with sustainable food consumption. Participants discussed the importance of having colleagues that are champions for improving the sustainability of food consumption in the municipality, especially if there is no written policy for purchasing organic food. Having one dedicated person with a holistic view over meals, environmental issues, food waste, etc., helps to take forward action

and can guide other colleagues in their work. The champions themselves explained that having a food policy decided by the politicians in the municipality helps them feel empowered. Therefore, changes in the political support, such as decreased focus on sustainability in the municipality, impacts the engagement of champions negatively and reduces their possibilities to enhance the sustainability work.

The support from networks created by national agencies and networks between several municipalities addressing sustainable consumption, was discussed among the participants as being very supportive and as improving their own work with this issue. As described by participants;

> *"we have a working group [in this network]…, there are courses as well as exchange of experiences."*
>
> *"I think the procurement authority gives a lot of support to us."*

A good relationship with contractors or staff that handle meal planning and preparation is a clear policy success factor. It is seen as even more important than the structure and mandate of the municipality, regardless of whether catering for local care homes or schools is within their own operations or not. A good relationship enables discussions about food waste and plant-based meals, and change can be more easily initiated compared with if the municipality only uses the procurement process for steering towards more sustainable food consumption.

3.3.3 Delivering impact now and in the future

During the discussions, participants were asked to reflect on the impacts from their policy and potential future measures that would be effective. Overall, their responses were predominantly positive in terms of impact and effectiveness of their policies and activities. One area or target group where the participants said that they were more constrained was with residents, emphasizing that despite some measures in place, they found them a difficult group to reach. However, in both case studies, participants stated that they hoped to reach the general population via their work with school children. Reaching school children was seen in both case studies as an effective way of impacting citizens in the municipality. Their belief is that by nudging children away from the meat norm, to more sustainable alternatives, it will spill over to their parents, as well as creating habits that the children will continue to have as adults.

The procurement process was seen as an important tool for impacting the sustainability of the purchased products and services within the municipality. But it was also described as complex and resource demanding. The participants discussed the need for knowledge and data about available products to make the most sustainable choice and that the rules within the procurement system limited, rather than enabled, sustainable choices in some cases. The procurement work was also described as something that can create tension between departments, as well as between departments and local politicians. One example explained by a participant was when politicians decide a new standard for a product or product segment without considering the increased cost associated with it, for example the higher price of 'organic' versus 'regular' products. This leads to challenges for the officials, and they would like to see a budget increase to be able to reach the new standard. Increasing the communication between departments and within departments, for example with working groups with representatives from all levels, was discussed by several participants to address this barrier.

4 Discussion

4.1 Policy mix and instruments for sustainable food consumption at the local level

The results of this study revealed a breadth of policies for sustainable food consumption in Sweden and instances of successful policy implementation in practice, particularly around food for municipal operations such as school meals. This section discusses how these policies correspond to or diverge from some of the core recommendations in the scientific literature for sustainable consumption policy and some of the latest local government food policies internationally.

4.1.1 The importance of a policy mix

Previous findings in the sustainable consumption literature state that a mix of policy measures is usually required to deliver on any objective or goal (Grubb et al., 2020). These policy mixes should have a longer-term strategic component (a combination of policy objectives and the principal plans for achieving them) and incorporate policy processes. They should also have certain characteristics such as coherence of processes, consistency of elements, credibility, and comprehensiveness (Rogge and Reichardt, 2016). Our case studies indicate evidence of the beginnings of a policy mix to deliver sustainable food consumption, with around 40 relevant local policies identified in the two municipalities studied. According to some of the latest policy reviews, municipalities in Sweden appear to be pursuing similar strategies to cities and local governments at the forefront of sustainable food policy development internationally. The review report from The Barcelona Challenge for Good Food and Climate (Milan Urban Food Policy Pact, 2022) and European Parliament Sustainable Food Systems briefing (Margaras et al., 2023) give several examples of the latest municipal food policy. This including a practices-like approach to delivering sustainable and healthy school meals in Barcelona, Spain; a collective catering scheme to reduce urban food waste in Le Havre Seine Métropolis in France; and municipal supported farmers markets and food citizenship meetings in Bogotá, Colombia. However, despite the encouraging individual policies, several participants in our case studies mentioned difficulties they faced in developing coherent and comprehensive policy mixes due to the constraining factors such as competence and mandate and lack of strategic components for many areas. This has been identified in other food policy studies, with Filippini et al. (2019) finding that actions for food security carried out by cities are not always included in a comprehensive strategy and are often isolated.

4.1.2 Varied but consistent policy instruments

The sustainable consumption literature highlights the need for use of a variety of policy instruments to generate the most effective change (Grubb et al., 2020). Consistency in the instrument mix is important

to ensure that policy instruments reinforce rather than undermine each other (Rogge and Reichardt, 2016). A particular critique of sustainable food consumption policy is that it is too reliant on softer policy instruments (Reisch et al., 2013; Ammann et al., 2023). Municipalities in the Netherlands for example, were found to be heavily reliant on non-legally binding soft measures to implement their food policy, using mainly strategic planning of informative policy instruments (Sibbing et al., 2019). Candel's (2020) study of 163 signatory cities to the 2015 Milan Urban Food Policy Pact (MUFPP) found that cities strategies vary in level of detail and with differences in instrument choices. Some cities express distinct steering philosophies, by employing coercive measures while others focus more on facilitation. Few strategies were found that set clear targets and timelines.

This was found to be similar in our study, with considerable focus on the less intrusive instruments of information provision. The findings show, however, that to some extent municipalities can use regulatory or contractual measures to ensure that their sustainability objectives are met, especially when operational activities are outsourced to different providers. Yet there was limited use of economic, investment or network instruments. There was one economic example related to waste tax reduction for food waste, but this appeared to be rather isolated. One example of the use of multiple and consistent policy instruments was in the policy for sustainable school meals in a successful project, with a variety of policy instruments used, including: staff training in climate-smart cooking (information), job specification requirements and contractual obligations (administrative), employing meal strategists (administrative), providing on-site kitchens (infrastructure provision/resources), and the maintenance of relationships with catering staff (network).

4.1.3 Targeting social practices and systems

Several studies have highlighted that to deliver sustainable consumption policies must intervene in social practices and systems rather than focusing on individual behaviors and decision-making (Spurling et al., 2013; Welch and Southerton, 2019). Hennchen (2019), for example, found that for the case of food waste in the food service sector, knowledge about food waste, food provision and portioning is embedded in the organization and tools, and shaped by the local environment and operating infrastructures. This is evident in our study, with case study participants noting the importance of combining infrastructure in the form of local kitchens, waste weighing tools, resources to employ staff, training and knowledge of staff, and good relationships with meal providers or contractors to reduce food waste in schools. However, this study showed little evidence of municipalities applying this approach in other areas such as residents' food consumption. For this, participants report that they feel less agency and rely more on information provision rather than interventions at the whole system or practice level. For example, one policy measure was to distribute information about food waste to residents in the mail. However, as many studies have shown, drivers of consumer waste often happen upstream by other actors, such as packaging, promotional offers, restaurant portion sizes, fast food consumption habits, and are even actively encouraged through overprovisioning and stimulating excess demand (Evans, 2011; Göbel et al., 2015; Langen et al., 2015; Mylan et al., 2016). The results of this study showed little evidence of municipalities taking a broader policy mix or intervening at a systems-wide level in this area.

4.1.4 Policy area gaps – procurement

This study found several objectives or targets for sustainable food procurement, but few policies to deliver on these aims. The literature has several recommendations for sustainable public procurement (see Testa et al. (2016) and Uttam and Le Lann Roos (2015) more generally and Agyepong and Nhamo (2017) or Lehtinen (2012) for sustainable food procurement). These suggest a series of mechanisms such as informing and educating staff, setting targets, criteria and monitoring, and legislative provisions. There was little evidence of this happening in practice in the case study municipalities of this study. Procurement was seen as an important tool, but when it came to implementation, officials faced several constraining factors that limited their ability to act. These include lack of knowledge and data to know what the most sustainable options were, lack of resources to opt for more costly selections, and tension between different departments and politicians. Participants noted that the existing procurement system itself was a constraining factor and that this had to be 'worked around' to better deliver on sustainability goals, rather than an aid or enabling factor to deliver on sustainable consumption.

4.1.5 Target group gaps – individuals and businesses, broadening participation

There were few policy goals or measures aimed at businesses in this study. For business or community actors, the sustainable consumption initiatives recommendations are for policy to support niche developments (Geels et al., 2015) such as alternative food networks (Kontothanasis, 2017), technological developments, or new business models. Examples in the food sector include Bui et al. (2016), Hinrichs (2014), and Moragues et al. (2013). More recently, the *Nature Food* editorial Democratizing Food Systems (2020) listed citizen-centerd innovations such as supporting communal urban gardens or kitchen-sharing facilities, provision of experimental spaces, and social innovations for sustainable consumption that municipalities support in order to transform food systems. In terms of governance, networks and actor engagement, there are proposals for initiatives such as Food Policy Councils (Michel et al., 2022; Schiff et al., 2022) or the use of participatory food governance structures (Mattioni et al., 2022) to support sustainable food system governance and new approaches to food. One example of this type of approach revealed in this study was the intention of one case study to develop processing operations for a local or regional food market to meet increased demand for locally produced goods. However, there was little information on if or how this might come about or whether this was linked to a broader food systems transformation agenda and strategy as given in the examples above. Likewise, the objective to work with food chains and to increase the number of climate-smart options in stores was stated in one case study document, but with no detail on what measures would be put in place to deliver this objective.

4.1.6 Enabling and constraining factors

The enabling and constraining factors of sustainable food consumption policy implementation that were identified in this study are similar to those found in other studies (e.g., Dawkins et al., 2019; Valencia et al., 2019; Galli et al., 2020). For example, political buy-in and advocacy from high-level politicians are an important feature of effective policy implementation at the local level, along with a mandate to promote policy coherence. Inclusivity; capacity for effective communication; accountability towards stakeholders; and an adequate budget are also all noted

in the literature (Valencia et al., 2019). Likewise, our findings contribute to a growing body of evidence that local level public officials are constrained by resources and funds, and lack of political support, and enabled by the data they can collect and their networks and relationships that they are able to maintain.

4.2 From national to local policies for sustainable food consumption

The need for better collaboration between local, regional, national and international levels has been identified as a core requirement to advance the work on sustainable consumption in Sweden (Moraeus, 2015), for sustainable food systems (Government Offices of Sweden, 2021) and across the EU (De Schutter et al., 2020). However, previous research points to several challenges that complicates this work, including translating policies between levels (Leventon and Antypas, 2012; van Stigt et al., 2013); coordination between levels (Nilsson et al., 2009); and differing timeframes that affect political incentives to take action (Wibeck et al., 2006). Lack of national-level guidance can also stall local work. Valencia et al. (2019), for example, found that where concrete national initiatives had been slow to emerge, some cities were hesitant to implement major initiatives independently in case they had to backtrack or redesign their strategies to follow national-level instructions. Local food actors can also be constrained by competing policies or regulations that are set at the national or international (e.g., EU) levels (Lever et al., 2019; De Schutter et al., 2020).

The evidence in this study indicates that Sweden does have a somewhat linked system of policies in place to encourage some aspects of sustainable food consumption. Some ambitions and goals at the national level can be seen in policy at the local level. For example, the focus areas of sustainable and healthy food consumption through municipal operations (schools and elderly care for example) in the National Food Strategy, purchasing organic food in the National Sustainable Consumption Strategy, and the aim to reduce food waste at the national level (waste strategy) were all apparent in sustainable food consumption work at the municipal level. Municipalities themselves report that political support, networks, and national-level goals or targets are important enabling factors for their work. Our analysis reveals links between these national priorities and operationalized policy measures at the local level. National standards for food waste, for example, were cited by participants as a supporting factor in their work for reducing food waste.

However, while coordination between local and national-level policy exists in specific areas, a broad and overarching vision for sustainable food consumption and for comprehensive policy seems to be lacking at both levels. Instead, both national and local levels have several quite disparate policies, targeting certain aspects of sustainable food consumption. The participants of this study did not spend a lot of time reflecting on the challenges, such as translating policies between levels, divergent priorities and interests, or lack of coordination and differing timeframes. However, this may reflect the focus of the conversation, rather than be an indication that municipalities do not face these obstacles to their policymaking. It is difficult therefore to determine whether this is the case in our study. The UN Food Summit dialogs in 2021 (Government Offices of Sweden, 2021) revealed that lack of coordination between governance levels remains a key constraining factor in delivering sustainable food systems in Sweden. Other European municipalities have used pressure and advocacy, building reputational capital through the construction of a network of alliances, and strengthening their horizontal links with nearby municipalities to obtain more voice at the national level (Mattioni et al., 2022), which may be necessary to improve coordination between national and local government in Sweden in the future.

4.3 Limitations, policy recommendations, and future research

The mixed method approach used in this study provides the opportunity for corroboration and triangulation of results, along with a breadth and depth of research. The work did not reveal any major disagreements in results between the different methods and findings were largely aligned. They did however offer different insights, with the case study focus groups, interviews and workshops adding considerable detail on policy implementation and constraining and enabling factors that would be difficult to determine from a nationwide survey or document analysis alone.

One limitation of the study is the sole focus on local government officials working at the municipality. To deliver more specific insights on the implementation of policy, it may be useful to interview contractors or other agencies involved in the delivery, especially for those municipalities that outsource some of their service provision to external providers. In addition, the framing of the data collection was sustainable consumption, but to analyze specific policy areas in-depth, across all information sources, this study focused on a specific category of consumption – food. A more detailed study on food policy specifically may result in a greater number of food-relevant insights and details, but it might also miss the broader perspective in how municipalities deal with the multiple aspects of sustainable consumption as a whole.

For future research, studies such as Colona (2023) offer a method to further explore the policy processes of municipal authorities, which could be used to shed more light on some of the success factors and policy implementation. Building on the finding that a lack of political support can be a key constraining factor for municipality progress on sustainable food consumption, further research into political tensions and power asymmetries in local food systems governance could provide additional policy-relevant insights (see for example Fuchs et al., 2016; Lever et al., 2019; Swinburn, 2019; Mattioni et al., 2022). This study could also be extended by engaging policy makers and citizens in whole systems analysis, using techniques such as participatory systems mapping to help identify policy clashes or trade-offs, synergies and levers for transformation (Penn et al., 2022).

Recommendations for future policy include a stronger and broader national-level sustainable food consumption vision (Gong and Maltais, 2022), which could then steer local level actions and, with high-level political buy-in, that could garner greater political support at the local level. Individual measures such as organic food procurement targets must be combined with other elements to take a more system-wide view. Basnet et al. (2023), for example, conclude that for Sweden, changing towards organic agriculture is only of advantage when combined with transformative strategies to promote environmental sustainability across multiple sections, such as changed consumption, better production and food waste practices. A broader vision could be combined with an expansion of policies, goals, and measures to address sustainable food consumption, to target multiple parts and actors of the food system simultaneously.

Innovative ways to engage those target groups on which municipalities have less focus, such as businesses and residents, may help expand the reach of sustainable food consumption policy and encourage a more systemic perspective. The municipalities also tend to heavily rely on informative and administrative policy instruments; the use of a greater range of instruments may also help speed up progress toward sustainable food consumption. The most successful policies to induce more sustainable food consumption targeted multiple aspects of practice, such as cooking school meals. Meal providers were given the necessary training, resources, and obligations to enhance their preparation of climate-smart meals. This more 'practices-oriented' approach (Spurling et al., 2013; Hausknost et al., 2018) could be expanded to address other areas of food consumption. In addition, studies have shown that even wider systemic school food reform has the potential and power to generate structural changes through the entire food system (Lever et al., 2019). Likewise, Sonnino and Milbourne (2022) describe how a place-based approach can be used to transform food systems, or how municipalities might use material, discursive and organizational powers to challenge the dominant food regime and build on existing alternative food narratives (Mattioni et al., 2022).

What was considered a strength and enabling factor by participants in this study – committed municipal officials and food policy champions – is also a risk if success is too reliant on single individuals or extensive work of committed activists. Our findings concur with others that show that if there is a change in political support, end of specific program funding, or loss of a policy champion any new food partnerships or networks can come to an abrupt end limiting the opportunity for long-term food systems change (Lever et al., 2019). These constraining factors may be overcome by local and national coordination, work to highlight coordinated positions between diverse food system actors for example (Lever et al., 2019) or bringing together a range of individuals, groups and organizations that encompass a desire to move towards more sustainable systems (Coulson and Sonnino, 2019). The city of Milan for example, is recognized internationally for its local food policy (Minotti et al., 2022) and where stakeholders, private funders, and policy entrepreneurs have played crucial roles in shaping the policy's agenda, adoption, and implementation.

Local governments call for greater support in their efforts to support sustainable food procurement and see the potential impact of sustainable food procurement in achieving their sustainable consumption goals. However, when it comes to implementing sustainable food procurement in practice, they appeared hampered in the same way as private consumers in making sustainable decisions – constrained by knowledge, lack of tools and resources. Hence, novel approaches to sustainable procurement may be required – thinking more broadly about the food system as opposed to individual procurement or consumption decisions. In a study of green public procurement in Sweden, Nilsson Lewis and Machlowska (2022) recommended increased resources, more systematic follow-up on awarded tenders to ensure they follow standards, and increased collaboration among public procurers, as well as suppliers and private procurers. The authors also noted that success factors include the development of tools to support green public procurement efforts, developing purchase centers and buyers' clubs, and dedicated agencies to support and monitor progress that could also be expanded for sustainable food procurement.

5 Conclusion

Policy to support sustainable consumption in Sweden has grown over the past decade, with a national strategy, proposed targets and several policy measures in place to deliver on relevant environmental goals. Municipalities have taken on the challenge to deliver sustainable consumption in their local areas, and with that, they have designed and implemented several policies and initiatives to tackle the growing problems that unsustainable consumption poses.

This study explored how municipalities address food consumption as part of their sustainable consumption-related actions. Using both a nationwide survey of all Swedish municipalities and two municipal case studies to examine the issue in breadth and depth across Sweden, the study revealed that certain sustainable food consumption policies such as vegetarian or vegan purchasing for municipal events were widely adopted. School meals and food waste had received particular attention, with municipalities using multiple policy instruments to deliver more sustainable practices.

There is evidence of coherence and support between national and local levels for organic food purchasing and food waste. Yet, municipalities face the same constraining factors in expanding and implementing their policies identified in other sustainability policy analyzes – chiefly, lack of resources and competence or knowledge in key areas such as procurement, along with political support and mandate which, if lacking, can be a major inhibiting factor to their work.

Enabling factors include available data, support of colleagues, and strong local networks and stakeholder relationships. The mixed method approach used in this study provided breadth and depth in the research results, but it was limited by the sole focus on public officials. Future work could expand the range of food system actors engaged, as well as exploring policy processes in more depth.

In future policy work, there remains scope for developing stronger visions for future sustainable food consumption and introducing a more comprehensive policy mix for sustainable food at the municipal level. This should build on the existing policy base and be supported by national-level strategy and high-level political buy-in. Using innovative methods to engage groups beyond those involved in municipal operations and, a movement towards more systems and practices thinking in policy design is also recommended for effective policy for sustainable food consumption going forward.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Author contributions

ED: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Validation, Writing – original draft. KAn: Conceptualization, Data curation,

Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Writing – original draft. EL: Data curation, Formal analysis, Validation, Writing – original draft. KAx: Conceptualization, Funding acquisition, Methodology, Validation, Writing – original draft. ÅGS: Conceptualization, Funding acquisition, Methodology, Supervision, Validation, Writing – original draft.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/frsus.2023.1265733/full#supplementary-material

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