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Transitioning toward sustainable consumption at the Swedish local governance level

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Municipalities have a prominent role to play in the transition to the sustainable society by governing changes at the local level. Based on a quantitative survey of Swedish municipalities, this study has given us a broad perspective on barriers and enablers in Swedish municipalities' efforts to plan, develop, and implement measures for governing the transition to sustainable consumption. By using a classification of municipalities belonging to certain groups, we find that municipalities characterized by having a city at their cores seem to have progressed further in their work to address sustainable consumption than municipalities characterized as more rural or as commuting municipalities near cities or towns. We also find that, though a large share of municipalities in Sweden report working systematically on sustainable consumption, their potential appears to not be fully realized, limited primarily by a lack of political support and key resources. We identify opportunities to establish more responsive governance structures as important for addressing these issues, where interactions at multiple levels are required to achieve successful governance of Sweden's work on sustainable consumption and address the barriers identified by this study. Higher levels of governance should offer greater support and guidance to municipalities in their work. We also advocate for more robust collaborations between municipalities to prevent them from working in isolation, build capacity, and foster greater knowledge exchange between municipality groups. This would strengthen municipalities' ability to catalyze transformational change, which is crucial if they are to meet their own high ambitions related to sustainable consumption and help institute the changes needed to enable the fulfillment of the long-term sustainability challenges we face, such as those articulated in the Paris Agreement and the 2030 Agenda for Sustainable Development.

KEYWORDS

sustainable consumption, multi-level governance, sustainability transition, climate action, role of municipalities, local governments and cities

1. Introduction

Unsustainable consumption patterns are one of the main drivers behind sustained high global emissions levels (IPCC, 2022). Meeting today's sustainability challenges requires fundamentally transforming our societies (see, e.g., Shove and Walker, 2007; Linnér and Wibeck, 2020; Loorbach et al., 2020) and major changes to current consumption practices (e.g., Lorek and Vergragt, 2015; Köhler et al., 2019). Awareness is growing that transformation toward more sustainable consumption patterns is crucial to addressing the global climate crisis (UNEP, 2019). Ensuring sustainable consumption is also one

of the 17 Sustainable Development Goals (SDGs) developed under the 2030 Agenda for Sustainable Development.

Governments from the local to the national level have key roles in driving this transition, not only by supporting changes in citizens' consumption practices but also within the public sector itself. To a considerable extent, efforts to achieve sustainable consumption have focused on national policies and programs. Indeed, the rationale is clear for introducing key policy instruments for sustainable consumption at the national scale, such as green taxes, tax code revisions, public procurement guidelines, building codes, etc., and national governments have the necessary legal competencies and mandates (Hennlock et al., 2015; Persson et al., 2015; Swedish Environmental Protection Agency, 2019b). Several countries have undertaken initiatives to understand and address the environmental effects of consumption at the national level (Swedish County Administrative Board, 2015; Defra, 2018; Swedish Government, 2020). Still, more fundamental changes are needed to support the emergence and institutionalization of "innovative, co-beneficial and long-term solutions and actions" (Hölscher et al., 2019, p. 186) for sustainable societies. This calls for the engagement of a broad set of stakeholders at different levels.

This study focuses on the role of local governments in the transition to sustainable consumption. Local governments are commonly responsible for providing a wide range of welfare services and for the lion's part of the public consumption (Swedish Competition Authority, 2020). They also enforce many of the policies and measures established at the national level (Van de Kerk and Manuel, 2008; Kuhlman and Farrington, 2010; Purvis et al., 2019). Local governments have stepped forward as important facilitators for sustainability (Parnell, 2016; Amundsen et al., 2018; Palm et al., 2019) and there is a growing body of research that focuses on understanding their key role in the transition as planners, procurers, enforcing authorities and role models at the local level (Rotmans et al., 2001; McCormick et al., 2013; Palm et al., 2019). In particular, this perspective emerges in research on multi-level governance and sustainability transitions, which has delved deeper to improve our understanding of the capabilities of local governments and cities to plan and implement sustainability measures (Bulkeley and Kern, 2006; Kern and Alber, 2008; Bulkeley et al., 2009; Jabareen, 2013; Kiss et al., 2018; Palm et al., 2019).

The role of local government actors for establishing sustainable consumption practices at the local level is, however, relatively understudied in the scientific literature and policy discourse (Castán Broto et al., 2019; Dawkins et al., 2019). This study aims to help fill that gap by examining municipalities' abilities to plan, develop and implement measures to govern the transition toward sustainable consumption with a focus on the municipalities' own consumption. We take a broad view of governance as an essential approach to guiding societal transitions, recognizing that many actors at different levels and with different agency engage and interact with each other and the problems at hand (Fischer and Newig, 2016; Fenton and Gustafsson, 2017). We base our analysis on a quantitative survey of Swedish municipalities to investigate what characterizes local governments' current work on sustainable consumption and to identify enabling and constraining factors experienced by the local governments in their work to advance sustainable consumption at the local level. We also reflect on differences between municipalities characterized by their different

levels of urbanity and rurality as well as population size, to explore if this has an influence on municipalities' abilities to address sustainable consumption.

2. Governing sustainable consumption

Unsustainable consumption of goods, services, and natural resources are recognized as one of the most important global sustainability challenges (United Nations, 1973, 1993). Sustainable consumption as a concept has been around since 1994 (Ofstad et al., 1994). As noted by Dawkins et al.'s (2019a; see also Mont, 2019), the concept is broad, which has led to different interpretations. A popular definition of the concept was proposed in 1994 at the Oslo Symposium: "*the use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations*" (IISD, 2023, section 1.2).

For a long time, measures to address this challenge focused on technological improvements as well as consumer power, but over time came the realization that this was not enough (Mont, 2019). Today, the delineation of strong and weak strategies to address sustainable consumption is often used to clarify the desired pathway to ensure the fulfillment of the concept (Hobson, 2013; Lorek and Fuchs, 2013; Fischer et al., 2021). Weak strategies emphasize improvements in production efficiency or increased awareness among consumers yet do not necessarily lead to reduced environmental pressure. Strong strategies, on the other hand, address both levels and patterns of consumption as well as profound changes in lifestyles (Fuchs and Lorek, 2005; Lorek and Fuchs, 2013). Mont et al. (2022, p. 3) identify three overarching and complementary perspectives of what is needed to ensure sustainable consumption: (1) *improve* by consuming better, (2) *change* by a "shift to other means of consumption" and (3) *reduce* the volume of goods and services consumed.

Many different approaches have been applied and reported in the scientific literature to understand what should be transformed and how, as well as the processes, roles and agency needed to drive a transition forward and to influence it over time (Loorbach et al., 2017; Scoones et al., 2020).

The concept 'transformative capacity' has been used by e.g. Wolfram et al. (2019) to point to the varied range of institutions, resources, skills, and interactions necessary to empower actors, both individually and collectively, in order to bring about significant systemic change effectively. Transformative capacity is needed for adapting and establishing new system configurations when the current one has become unsustainable (Wolfram, 2016). Similarly, Castán Broto et al. (2019, p. 450) refer to Wolfram et al. (2019) when defining urban transformative capacity "as the ability of an urban system (inclusive of physical and human dimensions) to reconfigure and move toward a new and more sustainable state."

Linnér and Wibeck (2020) point to political leadership, learning and education as the most important drivers of transformation to a sustainable society. They discuss learning and education as an intervention that is needed across society and describe transformative learning as a "long-term intervention aimed at empowering actors to be adaptive in a transforming world and to

create a knowledge base for enduring change” (Linnér and Wibeck, 2020, p. 225).

Another concept often used to describe the radical shifts needed to address the challenges created by longstanding patterns of unsustainable consumption and production is “sustainability transition”. Scholars suggest that profound changes such as the sustainability transition cannot be governed entirely top-down; instead, they require the engagement of multiple actors who collaborate to solve problems and establish normative societal foundations (Kooiman, 2003; Frantzeskaki et al., 2012; Köhler et al., 2019; Palm et al., 2019; Scoones et al., 2020). Similarly, Mont (2019, p. 3) emphasizes that successful governance to enable the paradigm shift toward sustainable consumption is more about “the processes, activities and practices of governing by societal actors” rather than the role of the state and governmental institutions. This form of polycentric governance (Ostrom, 2010; Morrison et al., 2019), commonly referred to as multi-level governance (MLG) (Marks, 1993; Zürn, 2010; Stephenson, 2013), is characterized by pluralistic and dispersed policymaking, involving interactions between different interests and societal actors such as government, nongovernmental organizations, civil society and businesses (Daniell and Kay, 2017).

Actors at different levels are often constrained by established structures that prevent them from responding swiftly to changes in the surrounding society (Loorbach et al., 2017). Köhler et al. (2019, p. 3) suggest that because sustainability is a public good, “... private actors (e.g., firms, consumers) have limited incentives to address it owing to free-rider problems and prisoner’s dilemmas.” Public policy thus has a central role to play in setting clear rules to govern the sustainable consumption transition, including the mechanisms to be used, such as taxes, standards and environmental regulations, as well as what the sustainability transition is aiming to achieve (Köhler et al., 2019).

From the perspective of local governments, key vertical interactions typically include those with national and regional governments, while typical horizontal interactions involve citizens, nongovernmental organizations, businesses and other local governments (see, e.g., Gustafsson and Mignon, 2019). Networks and partnerships are also often considered to be critical components of MLG, particularly in relation to sustainability issues such as climate change or sustainable consumption (Hooghe and Marks, 2003; Kern and Alber, 2008; Ansell and Torfing, 2016; Gustafsson and Mignon, 2019; Palm et al., 2019). Wolfram (2016) also point to the importance of networks by emphasizing that transformative capacity is all about empowering stakeholders to facilitate and contribute to a profound shift toward sustainability by engaging stakeholders in networks and generate a collective understanding of the identified problems to be able to find innovative solutions.

2.1. Local governments’ role and agency

Local governments in particular have a key role to play in the transition to a sustainable society (Fenton and Gustafsson, 2017; Kiss et al., 2018; Castán Broto et al., 2019; Palm et al., 2019). A field of research within MLG and sustainability transitions aims

to identify the different roles or functions of local governments in contributing to the transition to a sustainable society, often with a focus on climate change or sustainable development in general (see, e.g., Bulkeley and Kern, 2006; Kern and Alber, 2008; Bulkeley et al., 2009; Kiss et al., 2018; Schröder et al., 2019) which is also relevant to sustainable consumption.

For local governments’ abilities to plan, develop and implement measures to mitigate climate or consumption-based impacts, earlier work by Bulkeley et al. (2009) highlighted four factors as particularly important: (1) Leadership – emphasizing the importance of individuals that take on leading roles to institutionalize agenda, as well as highlighting leading roles to peer municipalities; (2) Competencies – relating to the municipality’s powers and duties (rather than formal competence) that define their capacity to develop and implement policy measures and take action; (3) Resources – which translate into a greater ability to take action on sustainable consumption; and (4) Political economies – which points to the need to give priority to the issue at the political level, despite limited resources and pressing agendas. This factor also emphasizes the importance of reframing the problem for the local level and that this has often also proven to be effective for highlighting additional benefits, for instance linking climate change to air quality. These four factors correspond well with work by Roberts (2008) that suggested that before an issue, such as sustainable consumption, can be said to have been fully institutionalized at the local level, it needs to be prioritized and integrated into policymaking to ensure that sufficient financial and human resources are in place. Sustainable consumption also needs to be integrated into municipal plans and stakeholders and networks mobilized. To enable that, there is a need for champions that drive the agenda and have access to local data (Roberts, 2008).

Building on Bulkeley and Kern (2006), Kern and Alber (2008) as well as Bulkeley et al. (2009), Palm et al. (2019) describes different roles and functions of local governments in governing sustainable consumption where (1) Self-governing emphasizes the municipality’s ability to govern its own operations; (2) Governing by provision emphasizes the municipality’s role as provider of different goods and services; (3) Governing by authority relates to traditional forms of governing through use of regulations and enforcing sanctions to achieve desired behaviors in contrast to; (4) Governing by enabling that relates more to the municipality’s role as facilitator of partnerships and community engagement at the local level; and lastly (5) Governing by partnership and networks which relates to the municipality’s relationship with other actors, where the municipality has no formal power. In contrast to governing by enabling, this role is more outward-looking and more about learning from as well as influencing external partners and peers.

In summary, Palm et al. (2019) perspective diverges from Bulkeley et al. (2009) and Roberts (2008) by emphasizing the external actions and local-level opportunities of municipalities to foster sustainable consumption. In contrast, Bulkeley et al. (2009) and Roberts (2008) have larger focus on the internal needs of municipalities, including financing and competency enhancement and political backing, to effectively fulfill their mission. Both Bulkeley et al. (2009) and Roberts (2008) recognize the importance of leadership and champions on the part of civil servants as well

as the political level, and that municipalities must acquire the necessary human and financial resources to be able to prioritize and take action. [Bulkeley et al. \(2009\)](#) point to municipalities' powers and duties and their capacity to take action and implement policy measures. On a similar note, [Roberts \(2008\)](#) identify the importance of integrating the topic in municipal plans. Further, they both point to the need to mobilize stakeholders and networks to ensure sharing of experiences and reaching higher impact as well as the importance of reframing the problem as something that affects the local level and that this has often also proven to be effective for highlighting additional benefits, for instance linking climate change to air quality.

In the discussion of this paper, we will build primarily on [Bulkeley et al. \(2009\)](#) to explore our central aim of this paper and increase our understanding of municipalities' abilities to govern the transition toward sustainable consumption with a focus on their own operations.

3. Materials and methods

3.1. Case selection

Our study focuses on Sweden, which is regularly referred to as a country with a strong environmental sustainability performance. Looking at Sweden's consumption-based emissions, however, we find that emissions generated in other countries to make products for final consumption in Sweden have increased by almost 50% since 1995 ([Schmidt et al., 2019](#)), and are today more than 60% higher than Sweden's territorial emissions ([Swedish Environmental Protection Agency, 2022a,b](#)).

At the government level, Sweden has been working actively to address consumption-based emissions for the last 10 years or so. In 2016, Sweden adopted a national strategy for sustainable consumption ([Government Offices of Sweden, 2016](#)) and, as one of the first countries in the world to do so, Sweden is currently investigating setting consumption-based emission reduction targets at the national level ([Government Offices of Sweden, 2022](#)). Insights from Sweden and the perspectives of local governments may thus be interesting to other countries looking to address consumption-based impacts.

The Swedish public sector is responsible for about 15% of the country's total consumption-based greenhouse gas emissions ([Swedish Environmental Protection Agency, 2017, 2019a, 2020](#)). Almost 70% of the total number of procurements by the public sector in Sweden are commissioned by municipalities and municipal companies ([Swedish Competition Authority, 2020](#)), who are also responsible for the majority of the greenhouse gas emissions generated by the public sector ([Swedish Procurement Agency, 2020](#)).

Multi-level interactions and multi-actor involvement is an important part of Swedish decision-making. At the same time, local self-government is enshrined in the Swedish constitution ([Government Offices of Sweden, 2004](#)). The Swedish governance model is designed to strengthen citizens' abilities to influence decision-making at the local level such as the provision of services or use of taxes ([SALAR, 2020](#)).

Swedish municipalities are mandated to provide a wide range of services, including schools, waste collection, spatial planning and housing ([SALAR, 2020](#)). They often also provide services that are considered voluntary, such as culture and leisure activities and energy supply. Through many of these services, municipalities are able to facilitate sustainable consumption among households and other local actors, even if their agency to directly influence other actors' consumption varies across consumption domains and is often considered weak and mainly limited to informative measures ([Dawkins et al., 2019](#)). The role and responsibilities of the Swedish municipalities in contributing to the welfare society is most similar to the arrangements in the other Nordic countries, but also to those in many other European countries, even if specific strategies and solutions vary across countries ([Sandberg, 2022](#)). According to an analysis by [Borrett et al. \(2021\)](#); also see [European Committee of the Regions, 2021](#)), Sweden, along with three other EU Member States (MS), scores slightly above average compared to other MS when it comes to local administrative decentralization.

Municipalities finance their activities mainly through the municipal tax system. Swedish municipalities differ greatly in their tax powers, as well as their populations' needs for services, due to differences in demographics and other structural factors such as geographic structure (sparseness), socio-economic factors and employment rate, differences that also translate to different capacities to act on consumption-based emissions. To ensure equal municipal services for the population, the government has put in place a municipal economic equalization system with the aim to create a level playing field for all municipalities, regardless of tax power and structural conditions ([Swedish Government Offices, 2021](#); [Ekonomifakta, 2022](#); [SALAR, 2022](#)). Norway and other Nordic countries have similar equalization systems in place ([Idso et al., 2018](#)) although the Swedish Association of Local Authorities and Regions consider the Swedish system to be one of the most far reaching in Europe ([SALAR, 2022](#)).

3.2. Data collection

This study is based on findings from a web-based survey conducted among Sweden's municipalities in late 2018, targeting municipality officials responsible for sustainability, climate and/or environmental issues (one per municipality). Using a quantitative survey (see, e.g., [Wolf, 2016](#)) allowed us to get a high sample size and a broad understanding ([Seale, 2004](#)) of how Swedish municipalities engage with sustainable consumption.

The survey provided a quantitative assessment of municipalities' work with sustainable consumption based on participants' own estimates (as in, e.g., [Bertrand and Mullainathan, 2001](#); [Lam and Bengo, 2003](#)), meaning that the responses might not necessarily correspond with the municipalities' official policy. The survey results show the percentage of municipalities that, for example, reported engaging in specific activities, working with specific actors, or having specific needs, but they do not allow us to evaluate the quality of the work, the nature of relationships or the factors that influence the different responses. For further details see [Supplementary material, Annex A](#).

3.2.1. Survey design

The survey questions were developed based on current research on local governments' work on sustainable consumption (Dawkins et al., 2019) and preliminary findings from in-depth case studies of two Swedish municipalities implemented in parallel. A practitioner workshop also helped frame the survey by identifying activity areas for sustainable consumption at the local level (André et al., 2021). Following the recommendations of survey methodology set out by Seale (2004), four public authorities and three municipalities reviewed and provided input to the questionnaire beforehand to ensure relevance and clarity of survey questions. In addition, one interest organization and one academic actor also provided valuable feedback on the survey structure and questions.

To ensure a common understanding of the term "sustainable consumption" among the survey respondents, the survey provided the following, somewhat simplified, definition of sustainable consumption (see section 2 for an elaboration of the concept): *Reducing the environmental and climate impact of consumption through the long-term sustainable use of different types of goods and services for different purposes.*

The survey was designed to capture features of municipalities' current work to address sustainable consumption and understand what the most important enabling and constraining factors are. The questionnaire included 25 main questions and eight optional questions (see [Supplementary material, Annex B](#) for the full questionnaire): a mix of multiple-choice questions; several questions for which respondents were asked to rate their answers on a scale ranging from "to a large extent" to "not at all"; and some open-ended questions. Most questions that were not open-ended offered the option to provide additional free-text comments. Several questions focused on what municipalities are currently doing on sustainable consumption, including specific activities, actors with whom they are engaging, consumption areas addressed, data collection, targets and progress monitoring. Several questions focused on enabling and constraining factors.

3.3. Data analysis

The survey was sent out to all of Sweden's 290 municipalities during the autumn of 2018. Of those, 119 municipalities responded to the full survey, corresponding to a response rate of 41%. In addition, 61 partial responses were received which were excluded from the analysis. For the remaining 110 non-respondents, we hypothesize that sustainable consumption may not be an area of work in which they are actively engaged and that they therefore chose not to respond even if the reason for not engaging in the topic will likely differ. The results may therefore overrepresent municipalities with stronger engagement and/or available resources for working on sustainable consumption at the municipal level. However, the full responses received indicate a great variety of municipalities' work and different levels of progress and ambition. See [Supplementary material, Annex A](#) for more details about the non-responses.

The survey results were coded and analyzed in Excel, tabulating overall results. To allow for a comparison between different municipality characteristics we then grouped the results based on

municipalities' population size and level of urbanity and rurality following a classification of nine different municipality groups developed by the Swedish Association of Local Authorities and Regions (SALAR, 2016). As illustrated by [Table 1](#), the total number of municipalities belonging to the nine different groups differed, as did the response rates for each group. Group A1 (Large city) had a response rate of 100% but only consists of three municipalities in total. With 13%, group C9 (Rural municipality with tourist industry) had the lowest response rate (2 out of 15 municipalities responded). Consequently, group C9 was excluded from the analysis about differences between the municipality groups but was still included in the analysis looking at the total number of responses. For the other seven groups, response rates varied between 30 and 62%. Following this, descriptive analyses of the responses were conducted for all questions.

To explore our central aim, we analyzed our results (see section 5) by drawing on the framing provided by Bulkeley et al. (2009) and Roberts (2008) on key features for municipalities' abilities to take action and institutionalize work such as on sustainable consumption. We also related our findings to Palm et al.'s (2019) work on local governments' roles and functions to govern sustainable consumption (see Section 2).

4. Results

In this section, we present the results from our survey of Swedish municipalities, including findings on the characteristics of their work on sustainable consumption and what could be identified as enabling and constraining factors. We also reflect on how municipalities belonging to different municipality groups according to SALAR's classification (2016) (i.e., population size and level of urbanity and rurality, see [Table 1](#)) differ in their responses. Question numbers will be referred to throughout the text (see [Supplementary material, Annex B](#) for details).

4.1. What characterizes municipalities' work on sustainable consumption?

4.1.1. Systematic work with sustainable consumption

Of the 119 Swedish municipalities that completed the survey, nearly 60% reported working systematically with sustainable consumption (Q2), defined as having integrated sustainable consumption in strategies, action plans, environmental programs or the equivalent. In addition, almost a quarter indicated that initiatives to develop a strategy or plan for their municipality's work on sustainable consumption were ongoing. Systematic work on sustainable consumption appeared less common in municipality groups B5 (*Commuting municipalities*) and C8 (*Small rural municipalities*); for both, on average only around 40 percent responded working systematically with sustainable consumption.

All (100%) municipalities that reported working strategically with sustainable consumption primarily did so with a focus on their own operations (Q3); 32% reported working strategically with sustainable consumption also toward citizens and 24% with the business community and other actors. All municipalities belonging

TABLE 1 Municipality groups and sub-groups. The total number of municipalities belonging to each group (SALAR, 2016) and the number and percentages from each group that responded to the survey.

Municipality groups and sub-groups	Total number in group	Total no. responses from group	Response rate (%) per group
A. Large cities and municipalities close to cities	46	28	
A1. Large city <i>At least 200,000 inhabitants in the municipality's largest urban area</i>	3	3	100%
A2. Commuting municipality near the largest cities <i>At least 40% commuting to a city or municipality close to a city</i>	43	25	58%
B. Major cities and municipalities near major cities	108	42	
B3. Major city <i>At least 40,000 and less than 200,000 inhabitants in the municipality's largest urban area</i>	21	13	62%
B4. Commuting municipality near major city <i>At least 40% commuting to a larger city</i>	52	18	35%
B5. Low commuting municipality near major city <i>Less than 40% commuting to a larger city</i>	35	11	31%
C. Smaller cities/urban areas and rural municipalities	136	49	
C6. Smaller town / urban area <i>At least 15,000 and less than 40,000 inhabitants in the municipality's largest urban area</i>	29	17	59%
C7. Commuting municipality near a small town/urban area <i>At least 30% commuting to a smaller town/city</i>	52	18	35%
C8. Rural municipality <i>Less than 15,000 inhabitants in the municipality's largest urban area, low commuting pattern</i>	40	12	30%
C9. Rural municipality with tourist industry <i>Rural municipality with at least two criteria for the tourist industry, ie. number of guest nights, turnover in retail/hotel/restaurant in relation to the number of inhabitants</i>	15	2	13%
	290	119	

NB, Due to low response rate, group C9 was excluded from the analysis of differences between the municipality groups.

to group A1 (*Large city*) reported working strategically with citizens, followed by group B3 (*Major city*), where 54% reported doing the same. Work toward citizens was least common in group C8 (*Small rural municipalities*) (17%). Working strategically with the business community was again most common in group A1 (67%), followed by group B3 (46%) and least common in group C8 (8%).

Almost one quarter of the municipalities had established a consumption-based emissions target for the municipality as a geographical unit (Q20) – that is, a target that takes into account emissions along the entire supply chain, from all the goods and services consumed within the municipality's boundaries. Another 16% said preparations to adopt such a target were ongoing. Having a target was most common in municipalities in group B3 (*Major city*) (38%) and least common in group B5 (*Commuting municipalities*) (9%). Over one third of municipalities in group C8 (*Small rural municipalities*) responded that work was ongoing to prepare for such a target. All groups expressed similar needs to be able to advance their work on establishing a consumption-based target (Q22), where tools (77%) and resources to collect and process data (75%) appear to be most needed.

4.1.2. Consumption areas in focus and monitoring

The consumption areas within municipalities' own operations for which it was most common to have consumption-related measures in place (Q4) were *municipal vehicles* and *food services (for schools/elderly)*, both of which were reported by close to 90% of respondents, followed by *heating* and *electricity* (around 75%) and *waste* (almost 65%) (Figure 1). Municipalities in group A1 (*Large city*) and B3 (*Major city*) reported working with a larger number of measures (77% and 75% respectively) than the other groups. Group B5 (*Low commuting municipality near major city*) and C7 (*Commuting municipality near a small town/urban area*) reported working with the lowest number of the listed measures (both 31%). For sustainable consumption interventions targeting citizens, the consumption areas most commonly addressed through different measures were *energy* and *waste* (70% and just over 60%, respectively) followed by *recycling and reuse* (close to 60%). *Energy for heating* and *electricity use* were the focus of most interventions targeted to businesses and other actors at the local level (around 80%). Interventions connected to *waste* were the third most common in the business realm, reported by about 35% of respondents (Q4).

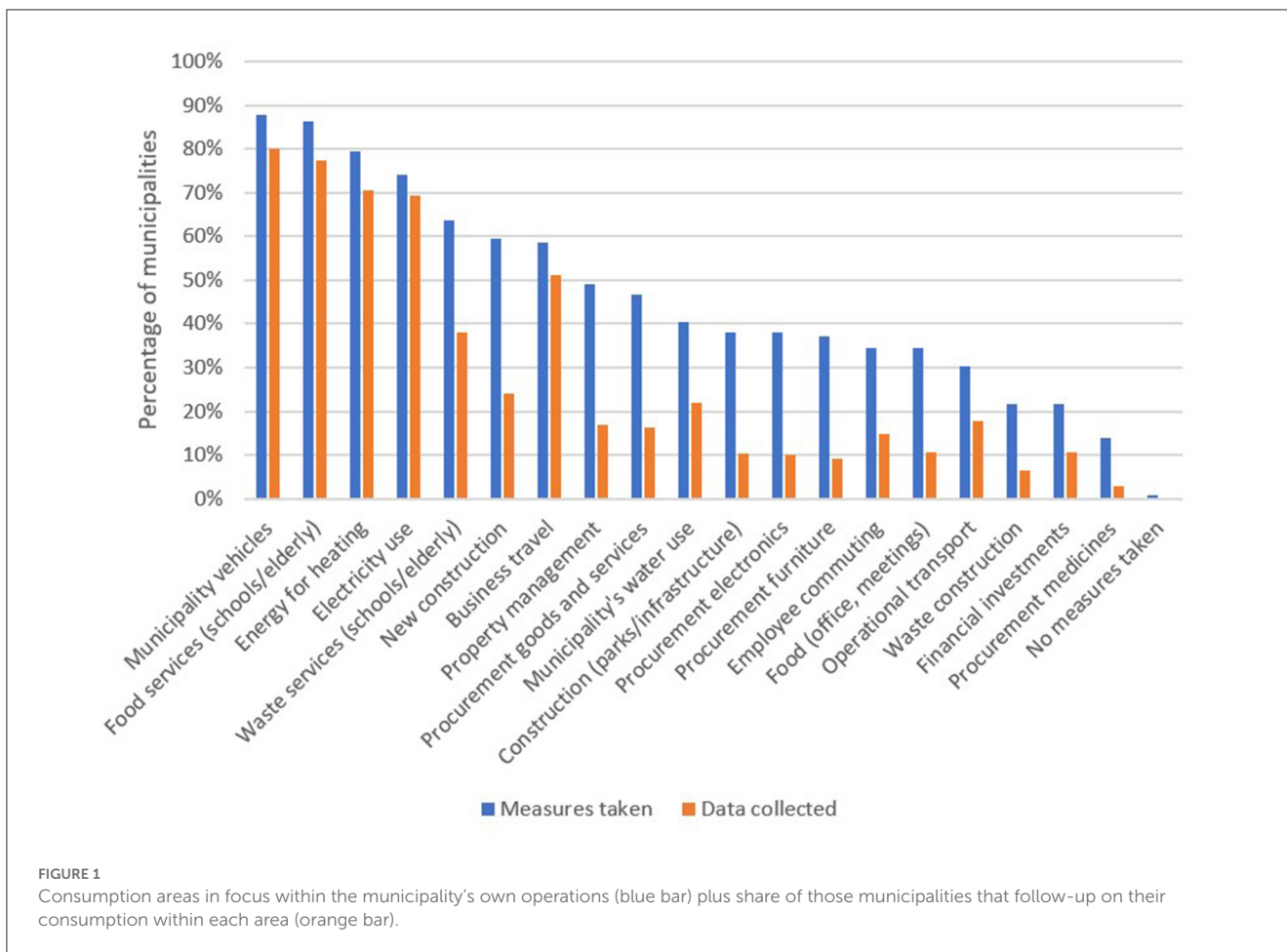


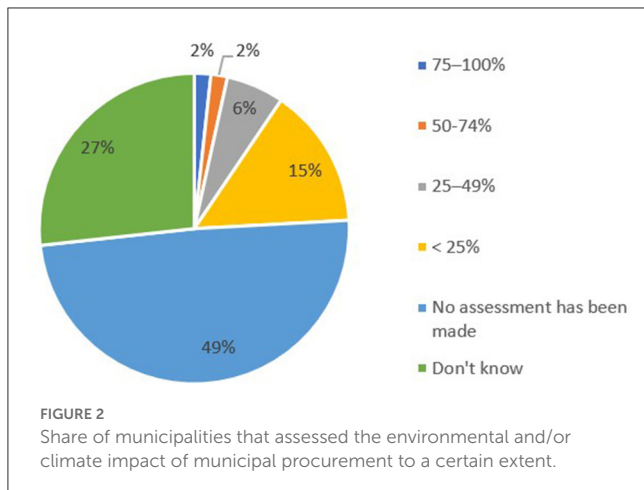
Figure 1 also shows the consumption areas in municipalities' own operations for which data to monitor environmental and climate impacts and trends was most commonly collected (Q5). From these results, it is evident that the consumption areas most often targeted with different interventions are also the ones for which they usually collect data to monitor impact such as transport, food and energy. We note that monitoring of several consumption areas, such as procurement of different types of goods and services, operational transport and construction, appears limited even if these should be easily monitored. This indicates that the municipalities have limited understanding of their own consumption levels, and that decisions about measures to address consumption often must be made without the support of such data.

In response to what type of tools, statistics or data the municipalities use to understand consumption-based impacts (Q21), several referred to national statistics. A few answered that they followed up on their energy consumption through so-called "energy balances," which allow them to monitor the use of energy and fuel used within the municipality's geographical area every 4 years. Local waste statistics were also mentioned. Hence, the answers indicate that locally specific consumption-focused data were only available for a few consumption areas.

4.1.3. Procurement

As they are responsible for a large share of public consumption, municipalities have important opportunities to influence the market to establish sustainable production practices through their own procurement. The first step toward understanding how to best reduce a municipality's overall environmental impact is to gain control over the procurement process and understand how consumption patterns may be changed.

The survey included several questions to understand how the municipalities work with procurement as a means to monitor their own consumption patterns and understand the environmental impact associated with it. Only two municipalities answered that they had assessed the environmental and/or climate impact of 75–100% of the municipality's procurement (Q13). Nearly half had not made any assessment of the environmental or climate impact associated with the municipality's procurement in the past year (see Figure 2). Almost 30% did not know whether such assessments had been done; thus, we assume that the share of municipalities that do not make an assessment is likely to be substantially higher than 50%. Municipalities in groups C8 (*Rural municipality*) and B4 (*Commuting municipality near major city*) appear to follow up on their own procurement to a lesser extent than the other groups; in group C8, 75% responded "no" and 25% "don't know", while in group B4, 72% responded "no" and 6% "don't know". One of the



three municipalities in group A1 (*Large cities*) responded following up on 50–74% of their purchases.

Almost half of the respondents (50 in total) submitted free-text responses commenting on why they had not made any assessment of the environmental impact of their procurement. About two-thirds referred to resource shortages in terms of time available and competence. Many also indicated that there is a lack of tools for assessing the environmental impact of their procurement, which is also connected to a lack of resources. About a quarter mentioned that the task was not a political priority or demand. Selected responses were formulated as follows:

- *No resources. Neither time nor competence.*
- *Because we lack tools to measure this in a good way.*
- *It has not been a prioritized work due to lack of interest in the organization.*
- *There is a lack of mandate, tools and resources.*
- *Environment is not a political interest with us. Unfortunately!*

Just over a fifth reported that they had a policy (or equivalent) to reduce their procurement needs by reducing material consumption within the municipality's own operations (Q14). Among those who indicated that they had such a policy, efforts to promote the recycling and reuse of furniture were common (Q15). Just over half of these responses referred to efforts to encourage the sharing of products between different parts of the administration. Just as many indicated that they had an ambition not to replace furniture or electronics as often.

The survey also included a question about whether the municipalities had practiced innovation procurement for products or services that are not yet available on the market (Q16). Only 15 percent responded that they had practiced this once or more. 48 percent did not know if it had been practiced and 36 percent responded no. Free-text responses that commented on why this had not been practiced included several comments about the limited resources available, perhaps especially for small municipalities as illustrated by these quotes:

- *Not a priority area. Small municipality.*
- *Difficulties for small municipality*
- *Resources and knowledge are lacking*

- *Lack of knowledge, courage, and initiative*
- *To carry out an innovation procurement, it is necessary that there is good competence [...] and that procurement is used as a strategic tool, but this is not the case in our case.*

4.2. What are considered enabling and constraining factors?

4.2.1. Enabling factors – drivers, important actors, and collaboration

With regards to which policies, agreements or other measures at the national and international levels that were perceived by the municipalities to be drivers and enabling factors for their work on sustainable consumption (Q9) it was found that *Economic incentives* (defined as cost savings or increased revenue) were considered the most important driver of the options listed (62% regarded these important “to a large extent”) (see Figure 3). The same is true for *national guidelines and policies*, which 55% of respondents said are important “to a large extent” and which was also fairly consistent across all groups. *Policy instruments at county level* and *EU guidelines and policy instruments* were both considered important by almost 35% of respondents.

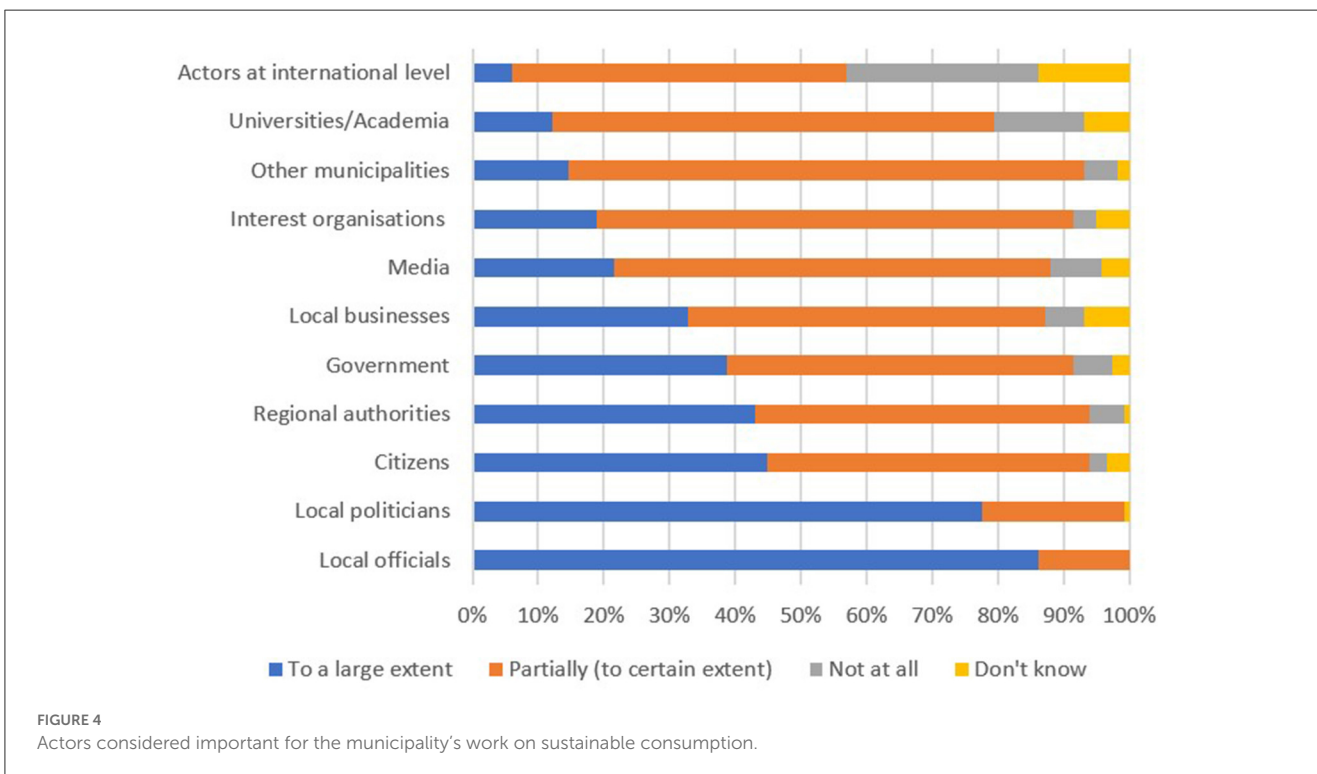
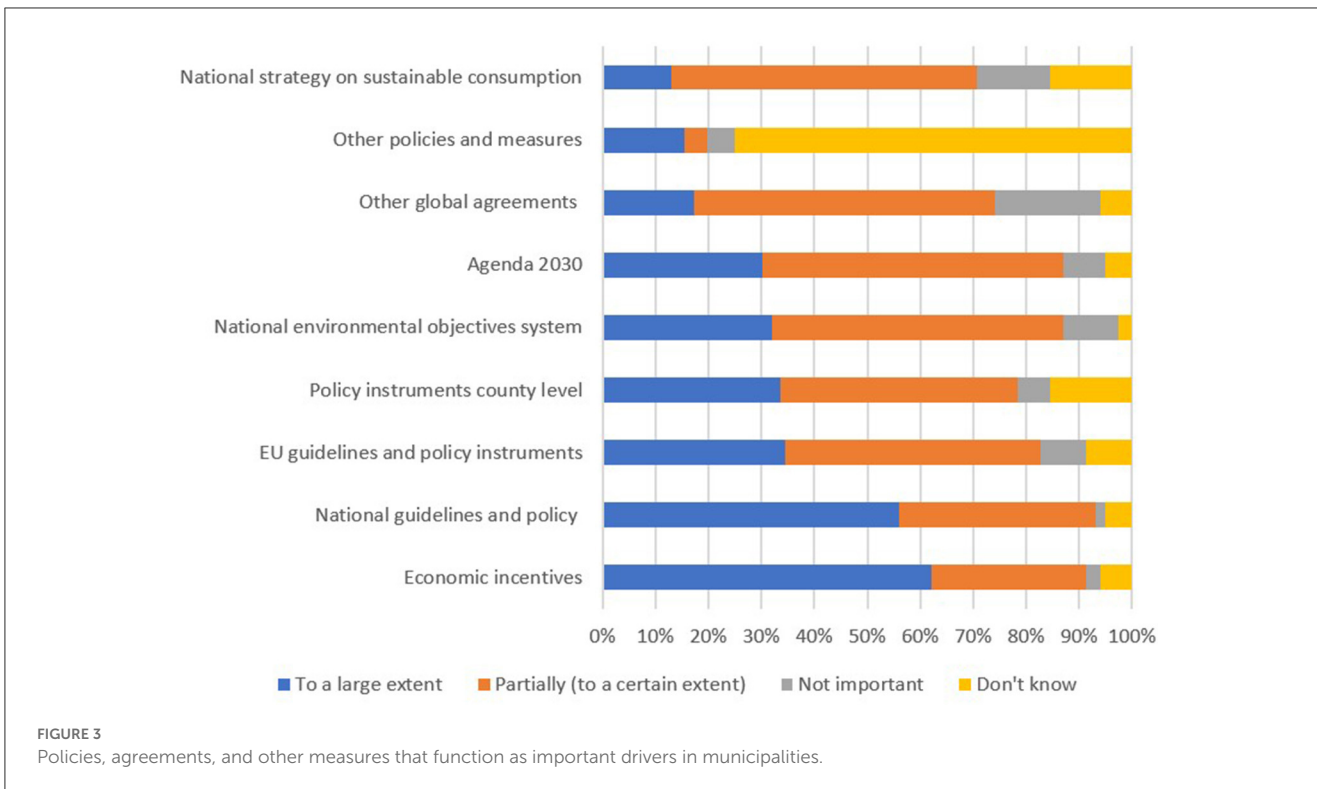
Other policies and measures than those listed were regarded important “to a large extent” by 16%. Free-text responses revealed that local strategies and plans were what several respondents had in mind here, as illustrated by this quote:

Local and national goals must be translated into the local context to function in municipal activities, both in terms of the municipal autonomy and the concretization of what is needed to achieve goals.

Political interest and political agendas were also mentioned as important drivers in this context. Sweden's *National strategy on sustainable consumption* and *Other global agreements* were regarded the least important.

Looking at what actors the respondents found most important for driving the sustainable consumption agenda forward (Q10), the survey showed that *local officials* on average were considered the most important actors (by 85%), followed by *local politicians* (78%). *Citizens*, meanwhile, ranked a distant third, at 45%, closely followed by *regional authorities* (such as the County Administrative Board). *Other municipalities* were regarded as an important actor by 15% of the respondents, although almost 80% referred to them being “partially” important. *Actors at the international level* were considered the least important (29% responded “Not at all” important), followed by *universities/academia* (14% responded “Not at all” important) (Figure 4).

Looking across the different municipality groups, responses show that almost all groups regard *local officials* and *local politicians* to be most important. Unlike all other groups, municipalities in group A1 (*Large cities*) find the *national government* important “to a large extent,” as well as *actors at the international level*. They also rank *media* and *universities* higher than most other groups. Conversely, there is indication that the more rural municipality groups C7–C8 place larger importance on *regional authorities* than



the more urban municipalities, apart from group B4 (*Commuting municipality near major city*) which put higher importance on the regional authorities than all other groups.

Engaging with networks was also considered an enabling factor (Q6). A majority of the participating municipalities (79%)

answered that they engaged with networks to support their work on sustainable consumption, and this was a consistent answer across all municipality groupings.

Given a list with a dozen different Swedish and international networks operating in the climate and consumption domains

(Q24), almost 60% of the municipalities reported engagement with two or three of the networks listed, 9% reported membership in five, and some said they were members of more than five. Networks based in Sweden were most common for all municipality groups, as was their considered importance in relation to the international ones. Over 70% reported membership in a national network for energy and climate advisors. The *Covenant of Mayors* was the most frequently cited international network (27%), followed by ICLEI (9%). Municipalities operating in urban contexts (*A1 Large cities* and *B3 Major cities*) were involved in a larger number of networks relating to sustainable consumption than the other groups. This could indicate that engaging with networks is perceived to require a lot of staff capacity which is often limited in smaller and more rural municipalities, even if the idea with networking is often to learn from each other and thus save capacity in the longer perspective. However, on average, it seems that getting involved in networks is not regarded as necessary to drive the municipalities' work on sustainable consumption forward (Q11).

In response to Q23 about which other actors the municipalities collaborated most with around sustainable consumption, *other municipalities* were rated highest. More than a quarter reported such collaboration "to a large extent" in the past 3 years (Figure 5). The second most frequent answer was *municipality organizations* (20%), followed by the *County Administrative Board* (16%). Several of the listed actors were noted as "not at all" common to collaborate with on average, especially *media*, *central authorities* and *universities/academia*.

The responses from group A1 (*Large cities*) differ from the others also in relation to this question, where it is apparent that A1 municipalities collaborate more with *businesses*, *organizations*, *media* and *universities* compared to the other groups. As a larger number of companies and universities are located in larger metropolitan areas, this is expected. However, municipalities in group B5 (*Low commuting municipality near major city*), followed by C6 (*Smaller town*) and B3 (*Major cities*), place higher importance on local businesses than all other groups. This could suggest that groups with fewer collaborations value them more than do those in Group A1 where this type of collaboration is more common. Cooperation with the County Administrative Board and County councils is more common among the more rural municipalities in groups C7 and C8 than in groups A and B, which can possibly be linked to the fact that these municipalities in comparison have fewer municipal employees and therefore a larger need for support from other authorities.

4.2.2. Constraining factors – need for resources and support measures

In terms of resources and support measures, municipalities reported that *political support* was what they needed most to be able to initiate or advance their efforts on sustainable consumption (Q11). Almost 80% suggested this was needed "to a large extent," and only 2% said it was already fulfilled. On the hierarchy of needs, *political support* was followed by *financial resources* (68%) and *information and education of employees* (57%), which was about

as important as *legislation* (55%). Around half of the respondents also indicated that they need better access to *tools* for following up on their consumption-based impact, as well as more *procurement support* "to a large extent" (see Figure 6).

When analyzing how responses differ between municipality groups, we find that all groups place highest importance on *political support* (79%) and *financial resources* (68%), whereas the other types of resources and support needed have a more diverse set of responses among the groups. In contrast to all other groups, group A1 (*Large city*) put equal importance to the following: *collaboration with other actors and networks*; *improved access to tools to follow up work*; and *investments in more environmentally friendly technology*. Group C6 (*Smaller town*) placed equally high importance on *information and education* and B3 (*Major city*) on *supporting legislation*.

As illustrated by Figure 6, few respondents identified any of the listed resources and support measures as "not important" or "already fulfilled." Most options were considered vital either "to a large extent" or "partially." As the following quote illustrates, emphasis was placed on the municipalities' perceived lack of resources:

The municipality needs financial resources to be able to increase activities and investments in the area. We are a severely afflicted municipality financially, with a declining population, lower tax revenues and with a deficit of [xx] million [SEK] [...] We have knowledge, we have ideas, and we have the will. We need money to make our ideas a reality!

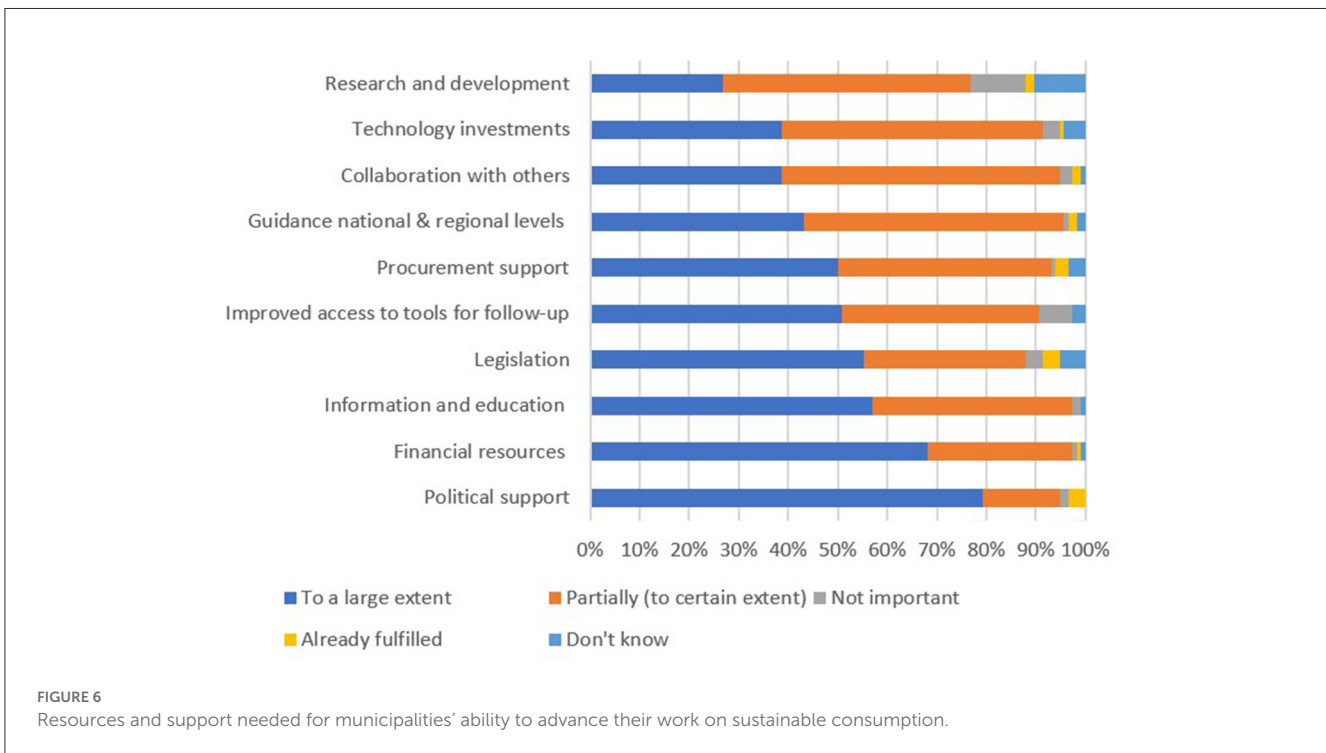
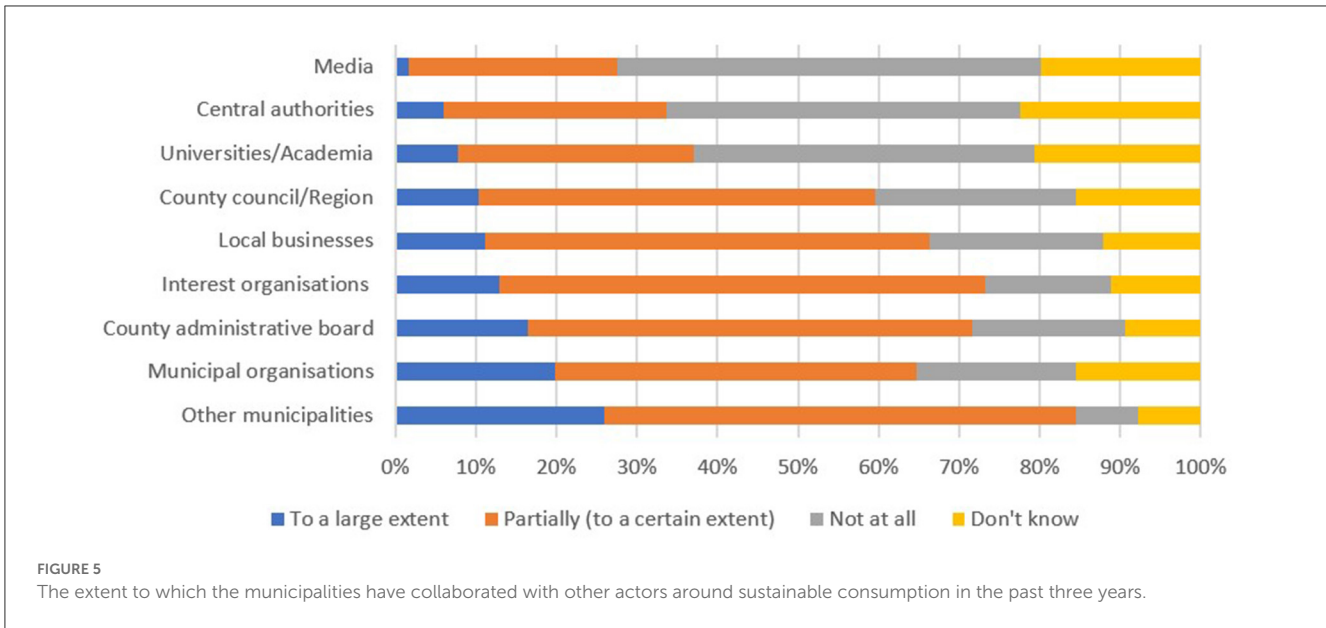
Other free-text responses pointed to a need for more support from the outside:

- *New ways of collaborating - make sure collaboration leads to concrete results*
- *Network for follow-up. We can't travel the world and follow up*
- *Help with doing current situation analysis from universities/students*
- *Research and reports showing the profitability and social benefits*

Other barriers cited were insufficient drive within the business community; the municipality's limited authority; and the need for more research and guidance about the potential economic gains and societal benefits of sustainable consumption. The need for local statistics and for new ways to collaborate were also mentioned several times.

The final survey question provided an opportunity to add a free-text response if there was anything the respondent wanted to add (Q34). This generated several interesting responses pointing toward both opportunities and barriers, such as the perceived conflict between sustainable consumption and growth and the challenge of bringing all actors together as illustrated by these quotes:

- *There is an internal conflict between sustainable consumption and growth goals/social planning. We are a politically controlled organization.*
- *There is no one who works in a coordinated way with sustainable consumption as a whole, but work is done here and there in the various boxes that lead to a more sustainable consumption*



overall. Sustainable consumption is an important development area, especially the work with procurement [...], but we are not used to looking at sustainable consumption in general, neither in the idea nor how that work would be organized in the existing organization.

- The work has been under-prioritized, but with the new environmental plan, it will hopefully be better!
- We have started and it feels as if both politicians and civil servants are on board.
- The politicians [...] must be made to join the journey going forward [...].

5. Discussion

In this section, we begin with relating our findings to the key features identified by Bulkeley et al. (2009) but also Roberts (2008) (see Section 2) as important for municipalities' abilities to plan, develop and implement measures to mitigate consumption-based impacts with a focus on municipalities own operations and consumption. Table 2 illustrates and summaries the main findings in relation to the concepts used. We also discuss how the survey results relate to local governments' roles and functions to govern sustainable consumption as outlined by Palm et al. (2019). The

TABLE 2 Summary of how the survey results relate to the key features identified by [Bulkeley et al. \(2009\)](#) as important for municipalities' abilities to take action and institutionalize work such as on sustainable consumption.

Factor	Feature	Key results
1. Leadership	A. Ability to institutionalize sustainable consumption	(A1) 59% work 'systematically'* with sustainable consumption within their own operations *defined as having integrated sustainable consumption in strategies, action plans, environmental programs or the equivalent
		(A2) 23% have established a sustainable consumption target for GHG or CO2 emissions
	B. Policy entrepreneurs and political champions	(B1) 86% recognize own staff most important actor for driving sustainable consumption agenda forward, followed by local politicians (78%)
	C. Networking and peer pressure	(C1) 78% suggest networks are important for sustainable consumption
(C2) Other municipalities most common collaborator (26%)		
2. Competence and responsibilities	A. Ability to address sustainable consumption through powers and duties	(A1) Measures to address and follow-up on consumption patterns most common in areas where municipalities have a clear mandate and perceived ease to collect data
		(A2) Limited control and understanding of procurement impact: Between 49 and 76% do not estimate the climate or environmental impact of procurement.
		(A3) 22% had a policy in support of reduced procurement and material consumption
		(A4) Competence highlighted as a limiting factor for monitoring procurement impacts
	B. Create enabling environment: Ability to facilitate action of others	(B1) 32% make efforts to facilitate sustainable consumption among citizens consumption among businesses and other actors
		(B2) 24% make efforts to facilitate sustainable consumption among businesses and other actors
	C. Well-functioning vertical relations	(C1) 39% consider national and 43% regional authorities to be important actors "to a large extent"
		(C2) 56% regarding national policies and guidelines as an important driver "to a large extent"
		(C3) 55% point to a need for more supportive legislation
3. Resources	A. Human and financial assets	(A1) 68% point to the need for more financial resources (A2) 57% point to the need for more information and education of employees
4. Political priorities and support	A. Political priorities and support	(A1) More political support is what municipalities need the most (79%) in terms of support and resources
	B. Reframe as a local problem	(B1) Strong need for local consumption-related data
		(B2) Majority point to a need for more resources (72%) and tools (74%) to enable the collecting and processing of data about local targets
		(B3) Local strategies and plans important driver

section ends with a discussion on the importance of inclusive governance to support the sustainability transition.

5.1. High ambition, but low capacity to catalyze transformational change

Today, municipalities are widely recognized to have a key role in driving the sustainability transition ([Vergragt et al., 2016](#); [Amundsen et al., 2018](#); [Global Taskforce of Local Regional Governments, 2018](#)). Our survey analysis indicates that a significant portion of Swedish municipalities align with the roles outlined by [Palm et al. \(2019\)](#) in terms of *self-governance, provision-based governance* with sustainable consumption strategies in

place or under development, and sometimes also targets. While most municipalities demonstrate awareness and systematic efforts within their own operations, their capacity to drive forward sustainable consumption at the local level remains generally weak, with challenges to fully *institutionalize* the work on sustainable consumption ([Roberts, 2008](#)). We found several indications of this, including selective focus on certain areas, resource limitations, and insufficient political support. This is common among all municipality groups.

[Bulkeley et al. \(2009\)](#) discuss competence and responsibilities from the perspective of municipalities' *powers and duties*. The survey finds that sustainable consumption measures in most municipality groups are concentrated to consumption areas within their own operations, where they have a clear mandate and can easily monitor their progress related to areas such as transport,

food and energy. This could also reflect that transformative capacity mainly emerges in consumption areas for which municipalities already have existing visions or strategies in place (Castán Broto et al., 2019; Wolfram et al., 2019).

We also observe that a relatively small share of municipalities work systematically on sustainable consumption among citizens, businesses and other actors, or with a *governing by enabling* approach (Palm et al., 2019). We interpret this as a result of municipal officials perceiving limited authority in relation to other societal actors and an emphasis still on weak rather than strong approaches to address sustainable consumption (Hobson, 2013; Lorek and Fuchs, 2013; Fischer et al., 2021). Findings from other studies suggest that engaging with households and initiatives to create more enabling approaches (Scoones et al., 2020) to address their consumption behavior is often also considered a sensitive topic at all levels of government (Dawkins et al., 2021). The largest cities are the notable exception, where responses reflect a more active engagement with citizens and other local actors compared to other groups.

With regards to municipalities' efforts to monitor their own procurement impact and collect data to help understand their own consumption patterns and consumption-based environmental impacts, the study reveals significant limitations. All municipality groups have limited control over their procurement impacts.

While data, indicators and targets alone are not enough to identify trade-offs and identify the necessary measures to achieve sustainable consumption (McCool and Stankey, 2004; Chelli and Gendron, 2013; Elgert, 2018) they can be important for pushing the sustainable consumption agenda forward (Dawkins et al., 2021). We found support for Bulkeley et al.'s (2009) recognition of the importance of reframing sustainable consumption as a local issue to create engagement and advance sustainable consumption efforts. This suggests that what is needed is a balance between investments in data collection and analysis, as well as capacity-building for stronger policy responses to support such analysis.

Absence of consumption-related targets does not necessarily demonstrate a lack of institutionalized work (Roberts, 2008) on sustainable consumption work or a lack of leadership (Bulkeley et al., 2009). However, we would suggest that establishing and communicating a consumption-based emissions target demonstrates the municipality's ability to show leadership, and that this often supports the process to institutionalize sustainable consumption efforts, as achieving the target will require a strategic plan and designated responsibilities. These conclusions are confirmed in other reports suggesting that indicators and targets are regarded as important among the municipalities for creating a stronger commitment to sustainable consumption and for communicating credibly about it (e.g., Swedish County Administrative Board, 2015; Klimatkommunerna, 2019; Dawkins et al., 2021).

Governing by partnership and networks (Palm et al., 2019) is broadly recognized as key to a successful sustainability transition (see also Hooghe and Marks, 2003; Ansell and Torfing, 2016; Scoones et al., 2020). In a case study of five Swedish cities' engagement with different kinds of networks, it was found that networks in general are capable of fostering innovation and sharing of best practices, but that the benefits are difficult to evaluate

(Mejía-Dugand et al., 2016). Similarly, our findings suggest that a majority of the municipalities recognize that networks provide important support for their work on sustainable consumption, but less than half express a large need for more networking and collaborative efforts. This possibly indicates that the benefits of engaging in networks are difficult to evaluate, as Mejía-Dugand et al. (2016) suggest, or simply that the existing networks work well to respond to municipalities' needs for collaboration and peer pressure. This would have been interesting to explore further and an idea for future research could be to explore if there is scope for improved networking and collaboration among the Swedish municipalities and how they should be set up to provide optimal transformative support.

5.2. Strong need for more resources and political support

Financial and local political support (Roberts, 2008; Bulkeley et al., 2009) as well as guidance from the national government come across as some of the most important enablers for the municipalities' work on sustainable consumption across all municipality groups. Currently, these are lacking and thus function as a barrier for strengthening municipalities' abilities to govern the transition to sustainable consumption.

Similar to Hult and Larsson (2016), we found that more extensive political engagement at the local level appears to be critical to advance municipalities' work on sustainable consumption. We have also identified a strong need for enhanced capacity to support sustainable consumption work, which relates to both financial and human resources (Roberts, 2008; Bulkeley et al., 2009). Respondents refer to a lack of formal (technical) competence to perform certain tasks, noting that the municipalities do not have the capacity or skills to carry out certain tasks, such as monitoring their consumption-based emissions or the impacts of procurement. This acts as a barrier to effective implementation of sustainable consumption measures; conversely, when that capacity is in place, it is seen as an enabling condition. This lack of resources has a negative influence on municipalities' powers and duties (Bulkeley et al., 2009) and for fulfilling the different roles outlined by Palm et al. (2019) as discussed in Section 2.

Political leadership, learning and education have been recognized as the most important drivers of transformation to a sustainable society (Bulkeley et al., 2009; Linnér and Wibeck, 2020). The availability of resources for capacity development is also key for an actor's transformative capacity as well as for the "wider processes of institutional- and social-learning" (e.g., Castán Broto et al., 2019, p. 449). These descriptions relate well to our findings, where respondents from most municipality groups pointed to a strong need for more education among their employees to be able to advance the work on sustainable consumption.

We also found strong evidence for the recognition that champions (Bulkeley et al., 2009; Palm et al., 2019) are key for driving the municipal sustainable consumption agenda. Having champions in place has also been recognized as one important element of the process to institutionalize an issue (Roberts, 2008).

The importance attributed to municipalities' own staff and political leadership could be understood to reinforce the conclusion that municipalities' work with sustainable consumption is not yet sufficiently institutionalized (Roberts, 2008).

Despite differences, we found that municipalities overall struggle with the same problems and have similar needs. A number of fundamental barriers that prevent Swedish municipalities from pushing forward their work was identified, which included lack of political support, financial resources and competence as discussed above. One limitation of our research was the low response rate from Group C9, one of the nine municipality groups (see Table 1). To address this, we could have complemented our study with telephone interviews to ensure better participation and gain deeper insights into their abilities to address sustainable consumption. By doing so, we would have enriched our findings and been able to better distinguish differences among especially rural municipality groups. Notwithstanding the low response rate in Group C9, our findings unequivocally underscore the significance of stronger formal and institutional structures to secure stronger political buy-in and bring about the transformation needed.

5.3. Inclusive governance supports the sustainability transition

Policymakers at different levels play a vital role in guiding the transition to a sustainable society and promoting mainstream sustainable consumption (Mont et al., 2022). European municipalities exhibit heterogeneity, reflecting differences due to geographic situations, climate, demography, industrial activities, governance aspects, and more (Aksoy et al., 2016). These differences necessitate tailored governance responses to facilitate sustainable consumption among households, businesses and within municipalities' own operations.

Sweden is one of a handful of European countries with a high degree of local autonomy, mature democracy and effective collaboration between different governance levels, coupled with financial strength (Ladner et al., 2015). This suggests that Sweden is well-positioned compared to many other European countries to define its own transition pathway. However, despite these advantages, we found that Swedish municipalities are only at the beginning of their transition pathway, not fully realizing their potential to create an enabling environment at the local level, and face many challenges before they can "act as a catalyst for transformation locally" (Amundsen et al., 2018, p. 23).

According to Bache et al. (2016), successful governance requires interactions at multiple levels, both vertically and horizontally (also see Marks, 1993; Stephenson, 2013). The emphasis on local autonomy in the Swedish governance model may challenge the notion of the importance of vertical and horizontal networking, which are key characteristics of multilevel governance. Many municipalities in our study appear to work in isolation even though they face similar challenges and could benefit from knowledge sharing, peer learning and partnerships. To optimize limited resources and ensure the widespread adoption of effective solutions, support and guidance are needed to bring about the transformation needed and embrace the principles of multilevel

governance in practice (Fischer and Newig, 2016; Fenton and Gustafsson, 2017).

The survey reveals that larger municipalities with urban characteristics have made more progress in addressing sustainable consumption compared to commuting or rural municipalities. The availability of greater resources, including staff capacity and diverse work tasks, plays a role in this discrepancy. Smaller municipalities with a lower tax base face more resource challenges in their sustainability work, even with the municipal equalization system aiming for fair funding per capita. The largest municipalities express less need for information and education of their staff and elected representatives but still express, similar to all groups, that they require additional financial resources.

This suggests that evident horizontal collaborations in larger municipalities with diverse urban characteristics contribute to enhancing their progress on sustainable consumption. Conversely, vertical-level interactions become more important for municipalities with less diverse actor representation. Strengthening the current governance structure could focus on enhancing collaborations between municipalities and the County Administrative Board. Similar to the potential role of regional governments highlighted by Birchall et al. (2023) for coordinated planning and institutions, the County Administrative Board, acting as a link between the national and local levels, could play a more explicit role in the work to address sustainable consumption despite the lack of a specific mandate (Swedish Government, 2021, 2022).

Hofstad and Torfing (2015) analyze the potential of collaborative innovation through regional governance in Norway and find that collaborative efforts across governance levels holds immense potential to provide solutions to complex issues. They found that networking showed preliminary signs of stimulating problem-solving, strategic thinking and innovative policymaking, but also suggest that further research is needed, as the role of regional governance levels remains understudied. A more responsive governance (e.g., Hyle, 2016; Bennett and Satterfield, 2018) between regional and local levels could also enhance municipal action, institutional capacity and the effectiveness of policies and measures to address sustainable consumption. Similarly, we suggest that the Swedish regional governance level also has an opportunity to strengthen regional leadership to facilitate knowledge-sharing and mutual learning among municipalities, while at the same time serving as a strong link between local and national efforts on sustainable consumption.

How to foster a more extensive collaboration between different governance levels to strengthen local capacity and advance the transition to sustainable consumption would be a valuable topic for future research.

6. Conclusions

Municipalities have a prominent role to play in the transition to the sustainable society by governing changes at the local level. This study offers a broad perspective on barriers and enablers in Swedish municipalities' efforts to plan, develop and implement measures for governing the transition to sustainable consumption.

Overall, we found that the Swedish municipalities currently have weak abilities to govern the transition toward sustainable consumption. Three main findings emerged: First, most municipalities' work on sustainable consumption reflects high ambitions, but limited capabilities to push forward transformational change. Second, the municipalities have a strong need for more political support as well as different kinds of resources to scale up their work. Third, we suggest there are opportunities to establish more responsive governance structures to address these issues.

Our analysis testifies to how different municipality groups express similar ambitions, drivers, barriers and needs overall, even if the more urban and larger municipalities (population-wise) appear to have progressed a bit further. Interactions at multiple levels are required to achieve a successful governance of Sweden's work on sustainable consumption and address the barriers identified by this survey. There appears to be room for expanded collaborations also between municipalities to prevent them from working in isolation, to build capacity, and to foster a greater knowledge exchange between municipality groups. This would strengthen the municipal ability to catalyze transformational change, which is crucial for meeting high ambitions related to sustainable consumption and help institute the changes needed to enable the fulfillment of the long-term sustainability challenges we face, such as those articulated in the Paris Agreement and the 2030 Agenda for Sustainable Development.

Data availability statement

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

Author contributions

KAx: conceptualization, methodology, investigation, validation, formal analysis, data curation, writing – original draft, visualization, and funding acquisition. KAn: conceptualization, methodology, investigation, validation, formal analysis, writing – review and editing, project administration, and funding acquisition. ED: conceptualization, methodology, validation, formal analysis, writing – review and editing, and funding acquisition. ÅG: conceptualization, methodology, validation,

References

- Aksoy, E., Gregor, M., Fons, J., Garzillo, C., Cugny-Seguin, M., and Löhnertz, M. (2016). City typologies of Europe: a tool to support urban sustainability studies and practices. *WIT Trans. Ecol. Environ.* 204, 1–15. doi: 10.2495/SCI60171
- Amundsen, H., Hovelsrud, G. K., Aall, C., Karlsson, M., and Westskog, H. (2018). Local governments as drivers for societal transformation: towards the 1.5°C ambition. *Curr. Opin. Environ. Sust.* 31, 23–29. doi: 10.1016/j.cosust.2017.12.004
- André, K., Axelsson, K., Dawkins, E., and Gerger Swartling, Å. (2021). *Drivkrafter för Hållbar Konsumtion på Lokal Nivå - Svenska kommuners Roll Och Möjligheter. 6960. Swedish Environmental Protection Agency*. Available online at: <https://www.naturvardsverket.se/om-oss/publikationer/6900/drivkrafter-for-hallbar-konsumtion-pa-lokal-niva/> (accessed January 3, 2023).

writing – review and editing, and funding acquisition. MX: methodology, formal analysis, writing – review and editing, and visualization. All authors contributed to the article and approved the submitted version.

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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.2023.1196373/full#supplementary-material>

- Bertrand, M., and Mullainathan, S. (2001). Do people mean what they say? Implications for subjective survey data. *Am. Econ. Rev.* 91, 67–72. doi: 10.1257/aer.91.2.67
- Birchall, S. J., Bonnett, N., and Kehler, S. (2023). The influence of governance structure on local resilience: Enabling and constraining factors for climate change adaptation in practice. *Urban Climate* 47, 101348. doi: 10.1016/j.uclim.2022.101348
- Borrett, C., Tugran, T., Gancheva, M., and Zamparutti, T. (2021). Developing a decentralisation index for the committee of the regions division of powers portal. *Eur. Committ. Regions* 27, 2022. doi: 10.2683/841455
- Bulkeley, H., and Kern, K. (2006). Local government and the governing of climate change in Germany and the UK. *Urban Studies* 43, 2237–2259. doi: 10.1080/00420980600936491
- Bulkeley, H., Schroeder, H., Janda, K., Zhao, J., Armstrong, A. Chu, S. Y., et al. (2009). *Cities and Climate Change: The Role of Institutions, Governance and Urban Planning*. Available online at: https://www.researchgate.net/publication/254888120_Cities_and_Climate_Change_The_role_of_institutions_governance_and_urban_planning (accessed July 31, 2023)
- Castán Broto, V. C., Trencher, G., Iwaszuk, E., and Westman, L. (2019). Transformative capacity and local action for urban sustainability. *Ambio* 48, 449–462. doi: 10.1007/s13280-018-1086-z
- Chelli, M., and Gendron, Y. (2013). Sustainability ratings and the disciplinary power of the ideology of numbers. *J. Bus. Ethics* 112, 187–203. doi: 10.1007/s10551-012-1252-3
- Daniell, K., and Kay, A. (2017). “Multi-level Governance: An Introduction,” in *Multi-Level Governance: Conceptual Challenges and Case Studies From Australia*, eds K. Daniell and A. Kay (Acton: Australian National University Press), 3–32.
- Dawkins, E., André, K., Axelsson, K., Benoist, L., Swartling, Å. G., and Persson, Å. (2019). Advancing sustainable consumption at the local government level: A literature review. *J. Cleaner Prod.* 231, 1450–1462. doi: 10.1016/j.jclepro.2019.05.176
- Dawkins, E., Larsen, R. K., Andre, K., and Axelsson, K. (2021). Do footprint indicators support learning about sustainable consumption among Swedish public officials?. *Ecol. Indic.* 120, 106846. doi: 10.1016/j.ecolind.2020.106846
- Defra (2018). *A Green Future: Our 25 Year Plan to Improve the Environment*. London, UK: Department for Environment Food and Rural Affairs, UK. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf (accessed September 11, 2020).
- Ekonomifakta (2022). *Kommunala Utjämningsystemet, Ekonomifakta*. Available online at: <https://www.ekonomifakta.se/Fakta/Offentlig-ekonomi/kommunal-ekonomi/kommunala-utjamningssystemet/> (accessed January 3, 2023).
- Elgert, L. (2018). Rating the sustainable city: ‘Measurementality’, transparency, and unexpected outcomes at the knowledge-policy interface. *Environ. Sci. Policy* 79, 16–24. doi: 10.1016/j.envsci.2017.10.006
- European Committee of the Regions (2021). *Division of Powers*. Available online at: <https://portal.cor.europa.eu/divisionpowers/Pages/default.aspx> (accessed July 10, 2023).
- Fenton, P., and Gustafsson, S. (2017). Moving from high-level words to local action: governance for urban sustainability in municipalities. *Curr. Opin. Environ. Sust.* 2017, 129–133. doi: 10.1016/j.cosust.2017.07.009
- Fischer, D., Reinermann, J. L., Mandujano, G. G., DesRoches, C. T., Diddi, S., and Vergragt, P. J. (2021). Sustainable consumption communication: a review of an emerging field of research. *J. Clean. Prod.* 300, 126880. doi: 10.1016/j.jclepro.2021.126880
- Fischer, L. B., and Newig, J. (2016). Importance of actors and agency in sustainability transitions: a systematic exploration of the literature. *Sustainability* 8, 476. doi: 10.3390/su8050476
- Frantzeskaki, N., Loorbach, D., and Meadowcroft, J. (2012). Governing societal transitions to sustainability. *Int. J. Sust. Dev.* 15, 19–36. doi: 10.1504/IJSD.2012.044032
- Fuchs, D. A., and Lorek, S. (2005). Sustainable consumption governance: a history of promises and failures. *J. Consum. Policy* 28, 261–288. doi: 10.1007/s10603-005-8490-z
- Global Taskforce of Local and Regional Governments (2018). *Towards the Localization of the SDGs: Local and Regional Governments’ Report to the 2018 HLPF. 2nd Report. United Cities and Local Governments*. Available online at: https://www.global-taskforce.org/sites/default/files/2018-07/Towards_the_localization_of_the_SDGs.pdf (accessed August 10, 2018).
- Government Offices of Sweden (2004). *The Swedish Local Government Act*. Available online at: <https://www.government.se/legal-documents/2004/09/ds-200431/> (accessed September 14, 2021).
- Government Offices of Sweden (2016). *Strategi för Hållbar Konsumtion. Fi 2016, 6. Vällingby, Sweden*. Available online at: <https://www.regeringen.se/4a7e12/globalassets/regeringen/dokument/finansdepartementet/pdf/2016/strategi-for-hallbar-konsumtion/strategi-for-hallbar-konsumtion--tillganglighetsanpassad.pdf> (accessed June 6, 2021).
- Government Offices of Sweden (2022). *Sveriges Globala Klimatavtryck, The Governments Official Investigations*. Available online at: <https://www.regeringen.se/rattsliga-dokument/statens-offentliga-utredningar/2022/04/sou-202215/> (accessed January 3, 2023).
- Gustafsson, S., and Mignon, I. (2019). Municipalities as intermediaries for the design and local implementation of climate visions. *Eur. Plan. Stu.* 28, 1161–1128. doi: 10.1080/09654313.2019.1612327
- Hennlock, M., Tekie, H., and Roth, S. (2015). *Styrmedel för Hållbar Konsumtion - Perspektiv från ett urval av Utvärderingar. Report Issued by the Swedish Environmental Protection Agency 6658. Bromma, Sweden*. Available online at: <http://www.naturvardsverket.se/Documents/publikationer6400/978-91-620-6658-1.pdf?pid=14533> (accessed May 11, 2020).
- Hobson, K. (2013). “Weak” or “strong” sustainable consumption? Efficiency, degrowth, and the 10 year framework of programmes. *Environ. Plan. Gov. Policy* 31, 1082–1098. doi: 10.1068/c12279
- Hofstad, H., and Torfing, J. (2015). Collaborative innovation as a tool for environmental, economic and social sustainability in regional governance. *Scand. J. Pub. Admin.* 19, 49–70. doi: 10.58235/sjpa.v19i4.14992
- Hölscher, K., Frantzeskaki, N., McPhearson, T., and Loorbach, D. (2019). Capacities for urban transformations governance. *Cities* 94, 186–199. doi: 10.1016/j.cities.2019.05.037
- Hooghe, L., and Marks, G. (2003). Unraveling the central state, but how? Types of multi-level governance. *Am. Polit. Sci. Rev.* 97, 233–243. doi: 10.1017/S0003055403000649
- Hult, A., and Larsson, J. (2016). Possibilities and problems with applying a consumption perspective in local climate strategies – the case of Gothenburg, Sweden. *J. Clean. Prod.* 134, 434–442. doi: 10.1016/j.jclepro.2015.10.033
- Hyle, M. A. (2016). Conceptual reflection on responsive environmental governance. *Int. J. Public Admin.* 39, 610–619. doi: 10.1080/01900692.2015.1034320
- Idso, J., Årethun, T., and Bhatta, B. P. (2018). The income equalization system among municipalities in norway: strengths and implications. *Economies* 6, 34. doi: 10.3390/economies6020034
- IISD (2023). *Oslo Roundtable on Sustainable Production and Consumption, International Institute for Sustainable Development (IISD), Linkages: A Multimedia Resource for Environment and Development Policy Makers*. Available online at: <https://enb.iisd.org/consume/oslo001.html> (accessed July 10, 2023).
- IPCC (2022). “Summary for policymakers,” in *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, eds P. R. Shukla, J. Skea, A. Reisinger, R. Slade, R. Fradera, M. Pathak, A. Al Khouridjia, M. Belkacemi, R. van Diemen, A. Hasija, G. Lisboa, S. Luz, J. Malley, D. McCollum, S. Some, and P. Vyas. (Cambridge; New York, NY: Cambridge University Press). doi: 10.1017/9781009157926.001
- Jabareen, Y. (2013). Planning the resilient city: concepts and strategies for coping with climate change and environmental risk. *Cities* 31, 220–229. doi: 10.1016/j.cities.2012.05.004
- Kern, K., and Alber, G. (2008). “Governing climate change in cities: modes of urban climate Governance in multi-level systems,” in *OECD Conference on Competitive Cities and Climate Change*. Milan, Italy: OECD.
- Kiss, G., Pataki, G., Köves, A., and Király, G. (2018). Framing sustainable consumption in different ways: policy lessons from two participatory systems mapping exercises in Hungary. *J. Consum. Policy* 41, 1–19. doi: 10.1007/s10603-017-9363-y
- Klimatkommunerna (2019). *Klimatnyckeltal för Svenska Kommuner - en Förstudie Gjord av Klimatkommunerna med Finansiering av SKL*. Lund. Available online at: <https://klimatkommunerna.se/wp-content/uploads/2019/10/klimatnyckeltal-for-svenska-kommuner-en-forstudie-gjord-av-klimatkommunerna.pdf> (accessed July 31, 2023)
- Köhler, J., Geels, F. W., Kern, F., Markard, J., Onsongo, E., and Wiecek, A. (2019). An agenda for sustainability transitions research: State of the art and future directions. *Environ. Innov. Soc. Trans.* 31, 1–32. doi: 10.1016/j.eist.2019.01.004
- Kooiman, J. (2003). *Governing as Governance*. London: SAGE Publications, Inc.
- Kuhlman, T., and Farrington, J. (2010). What is sustainability? *Sustainability* 2, 3436–3448. doi: 10.3390/su2113436
- Ladner, A., Keuffer, N., and Baldersheim, H. (2015). *Self-rule Index for Local Authorities (1990–2014) Release 1.0*. Brussels: European Commission. Available online at: https://ec.europa.eu/regional_policy/en/information/publications/studies/2015/self-rule-index-for-local-authorities-release-1-0 (accessed August 1, 2023).
- Lam, T. C. M., and Bengo (2003). A comparison of three retrospective self-reporting methods of measuring change in instructional practice. *Am. J. Eval.* 24, 65–80. doi: 10.1177/109821400302400106
- Linnér, B. O., and Wibeck, V. (2020). Conceptualising variations in societal transformations towards sustainability. *Environ. Sci. Policy* 106, 221–227. doi: 10.1016/j.envsci.2020.01.007
- Loorbach, D., Frantzeskaki, N., and Avelino, F. (2017). Sustainability transitions research: transforming science and practice for societal change. *Ann. Rev. Environ. Res.* 42, 599–626. doi: 10.1146/annurev-environ-102014-021340

- Loorbach, D., Wittmayer, J., Avelino, F., von Wirth, T., and Frantzeskaki, N. (2020). Transformative innovation and translocal diffusion. *Environ. Innov. Soc. Trans.* 35, 251–260. doi: 10.1016/j.eist.2020.01.009
- Lorek, S., and Fuchs, D. (2013). Strong sustainable consumption governance – precondition for a degrowth path?. *J. Cleaner Prod.* 38, 36–43. doi: 10.1016/j.jclepro.2011.08.008
- Lorek, S., and Vergragt, P. J. (2015). “Sustainable consumption as a systemic challenge: inter- and transdisciplinary research and research questions,” in *Handbook of Research on Sustainable Consumption*, eds L.A. Reisch and J. Thøgersen (Cheltenham: Edward Elgar Publishing Ltd).
- Marks, G. (1993). “Structural policy and multi-level governance in the EC,” in *The State of the European Community Volume 2: The Maastricht Debates and Beyond (European Community Studies Association)*, eds A. Cafruny W., and G. Rosenthal (Richmond: Ergodebooks), 391–409.
- McCool, S. F., and Stankey, G. H. (2004). Indicators of sustainability: challenges and opportunities at the interface of science and policy. *Environ. Manage.* 33, 294–305. doi: 10.1007/s00267-003-0084-4
- McCormick, K., Anderberg, S., Coenen, L., and Neij, L. (2013). Advancing sustainable urban transformation. *J. Cleaner Prod.* 50, 1–11. doi: 10.1016/j.jclepro.2013.01.003
- Mejia-Dugand, S., Kanda, W., and Hjelm, O. (2016). Analyzing international city networks for sustainability: a study of five major Swedish cities. *J. Cleaner Prod.* 134, 61–69. doi: 10.1016/j.jclepro.2015.09.093
- Mont, O. (2019). “Introduction to a research agenda for sustainable consumption governance,” in *A Research Agenda for Sustainable Consumption Governance* (Cheltenham: Edward Elgar Publishing). doi: 10.4337/9781788117814
- Mont, O., Lehner, M., and Dalhammar, C. (2022). Sustainable consumption through policy intervention—A review of research themes. *Front. Sust.* 3, 921477. doi: 10.3389/frsus.2022.921477
- Morrison, T. H., Adger, W. N., Brown, K., Lemos, M. C., Huitema, D., Phelps, J. (2019). The black box of power in polycentric environmental governance. *Global Environ. Change* 57, 101934. doi: 10.1016/j.gloenvcha.2019.101934
- Ofstad, S., Westly, L., Bratelli, T., and Miljøverndepartementet, N. (1994). *Symposium: Sustainable Consumption: 19-20 January 1994 : Oslo, Norway*. Oslo: Ministry of Environment.
- Ostrom, E. (2010). Polycentric systems for coping with collective action and global environmental change. *Global Environ. Change* 20, 550–557. doi: 10.1016/j.gloenvcha.2010.07.004
- Palm, J., Smedby, N., and McCormick, K. (2019). *The Role of Local Governments in Governing Sustainable Consumption and Sharing Cities. A Research Agenda for Sustainable Consumption Governance*. Available online at: <https://www.elgaronline.com/view/edcoll/9781788117807/9781788117807.0021.xml> (accessed February 11, 2020).
- Parnell, S. (2016). Defining a global urban development agenda. *World Dev.* 78, 529–540. doi: 10.1016/j.worlddev.2015.10.028
- Persson, L., Persson, Å., and Nykvist, B. (2015). *Styrmedel och andra insatser för att minska svensk konsumtions påverkan på hälsa och miljö i andra länder*. Stockholm Environmental Institute. Available online at: <https://www.sei.org/mediamanager/documents/Publications/NEW/sci-2015-workingpaperswedishconsumption.pdf> (accessed July 31, 2023).
- Purvis, B., Mao, Y., and Robinson, D. (2019). Three pillars of sustainability: in search of conceptual origins. *Sust. Sci.* 14, 681–695. doi: 10.1007/s11625-018-0627-5
- Roberts, D. (2008). Thinking globally, acting locally — institutionalizing climate change at the local government level in Durban, South Africa. *Environ. Urban.* 20, 521–537. doi: 10.1177/0956247808096126
- Rotmans, J., Kemp, R., and van Asselt, M. (2001). More evolution than revolution: transition management in public policy. *Foresight* 3, 15–31. doi: 10.1108/14636680110803003
- SALAR (2016). *Swedish Association of Local Authorities and Regions, Kommungruppsindelning 2017 - Omarbetning av Sveriges Kommuner och Landstings kommungruppsindelning*. Available online at: <https://webbutik.skr.se/bilder/artiklar/pdf/7585-455-7.pdf?issuusi=ignore> (accessed May 12, 2020).
- SALAR (2020). *Swedish Association of Local Authorities and Regions, Kommunernas Åtaganden*. Available online at: <https://skr.se/skr/tjanster/kommunerochregioner/faktakommunerochregioner/kommunernasataganden.3683.html> (accessed September 25, 2022).
- SALAR (2022). *Swedish Association of Local Authorities and Regions, Local Self-Government*. Available online at: <https://skr.se/skr/tjanster/englishpages/municipalitiesandregions/localselfgovernment.1305.html> (accessed January 3, 2023).
- Sandberg, S. (2022). “Den kommunala självstyrelsen i Norden: motståndskraftig och anpassningsbar men inte längre självklar?,” in *Förvaltning och rättssäkerhet i Norden*, eds S. Godenhjelm, E. Mäkinen, and M. Niemivuo (Helsingfors: Svenska Litteratursällskapet), 123–149.
- Schmidt, S., Södersten, C. J., Wiebe, K., Simas, M., Palm, V., and Wood, R. (2019). Understanding GHG emissions from Swedish consumption - Current challenges in reaching the generational goal. *J. Clean. Prod.* 212, 428–437. doi: 10.1016/j.jclepro.2018.11.060
- Schröder, P., Vergragt, P., Brown, H. S., Dendler, L., Gorenflo, N., Matus, K. P., et al. (2019). Advancing sustainable consumption and production in cities - A transdisciplinary research and stakeholder engagement framework to address consumption-based emissions and impacts. *J. Clean. Prod.* 213, 114–125. doi: 10.1016/j.jclepro.2018.12.050
- Scoones, I., Stirling, A., Abrol, D., Atela, J., Charli-Joseph, L., Eakin, H. (2020). Transformations to sustainability: combining structural, systemic and enabling approaches. *Curr. Opin. Environ. Sust.* 42, 65–75. doi: 10.1016/j.cosust.2019.12.004
- Seale, C. (2004). *Social Research Methods: A Reader*. London: Routledge Student Readers.
- Shove, E., and Walker, G. (2007). Caution! transitions ahead: politics, practice, and sustainable transition management. *Environ. Plan. Econ. Space* 39, 763–770. doi: 10.1068/a39310
- Stephenson (2013). Twenty years of multi-level governance: ‘where does it come from? What is it? Where is it going?’. *J. Eur. Pub. Policy.* 20, 817–837. doi: 10.1080/13501763.2013.781818
- Swedish Competition Authority. (2020). *Statistik om offentlig upphandling 2020*. Kalmar. Available online at: <https://www.konkurrensverket.se/informationsmaterial/rapportlista/statistik-om-offentlig-upphandling-2020/> (accessed July 31, 2023).
- Swedish County Administrative Board. (2015). *Länsstyrelsernas roll och Ansvaret i Arbetet Med Konsumtion: En Förstudie*. Available online at: <https://www.lansstyrelsen.se/download/18,6ae.610001636c9c68e5544e5/1531211630948/15-07-L%C3%A4nsstyrelsernas%20roll%20och%20ansvar%20i%20arbetet%20med%20konsumtion.pdf> (accessed July 15, 2015).
- Swedish Environmental Protection Agency (2017). *Fördjudat Analys av Svensk Klimatstatistik 2017, 6782. Bromma, Sweden*. Available online at: <https://www.naturvardsverket.se/Documents/publikationer/6400/978-91-620-6782-3.pdf?pid=21185> (accessed May 11, 2020).
- Swedish Environmental Protection Agency. (2019a). *Fördjudat Analys av den Svenska Klimatomställningen 2019: Industrin i fokus. 6911. Bromma, Sweden*. Available online at: <https://www.naturvardsverket.se/Documents/publikationer/6400/978-91-620-6911-7.pdf?pid=25851> (accessed May 19, 2020).
- Swedish Environmental Protection Agency. (2019b). *Temaområde Hållbar Konsumtion och Produktion - En Arbetsrapport Framtagen Inom Ramen för den Fördjudade Utvärderingen av Miljö kvalitetsmålen 2019. NV-06350-18*. Available online at: <https://www.naturvardsverket.se/upload/miljoarbete-i-samhallet/uppdelat-efter-omrade/hallbar-konsumtion-produktion/arbetsrapport-hallbar-konsumtion-och-produktion.pdf> (accessed October 4, 2020).
- Swedish Environmental Protection Agency. (2020). *Fördjudat Analys av den svenska klimatomställningen 2020 - Klimat och luft i fokus. 6945*. Available online at: <https://www.naturvardsverket.se/om-oss/publikationer/6900/fordjudat-analys-av-den-svenska-klimatomstallningen-2020/> (accessed January 3, 2022).
- Swedish Environmental Protection Agency. (2022a). *Konsumtionsbaserade Utsläpp av Växthusgaser i Sverige och Andra Länder, Naturvårdsverket*. Available online at: <https://www.naturvardsverket.se/data-och-statistik/konsumtion/vaxthusgaser-konsumtionsbaserade-utslapp-i-sverige-och-andra-lander/> (accessed December 1, 2022).
- Swedish Environmental Protection Agency. (2022b). *Sveriges Officiella Statistik - Nationella utsläpp och upptag av växthusgaser, Naturvårdsverket*. Available online at: <https://www.naturvardsverket.se/data-och-statistik/klimat/sveriges-utslapp-och-upptag-av-vaxthusgaser/> (accessed December 3, 2022).
- Swedish Government (2020). *Kommittédirektiv: Tilläggsdirektiv till Miljömålsberedningen (M2010:04)-strategi för minskad klimatpåverkan från konsumtion*. Parliamentary inquiry Dir. 2020:110. Available online at: <https://www.regeringen.se/rattsliga-dokument/kommittedirektiv/2020/10/dir.-2020110> (accessed August 1, 2023).
- Swedish Government (2021). *Regleringsbrev 2022 Myndighet länsstyrelserna, Ministry of Finance. Fi2020/02647*. Available online at: <https://www.esv.se/statsliggaren/regleringsbrev/> (accessed January 4, 2023).
- Swedish Government (2022). *Regleringsbrev 2023 Myndighet länsstyrelserna, Ministry of Finance. Fi2021/02746*. Available online at: <https://www.esv.se/statsliggaren/regleringsbrev/> (accessed January 4, 2023).
- Swedish Government Offices (2021). *Kommunal Ekonomi. Regeringen och Regeringskansliet*. Available online at: <https://www.regeringen.se/egeringens-politik/kommuner-och-regioner/kommunal-ekonomi/> (accessed December 4, 2022).
- Swedish Procurement Agency (2020). *Kommunernas Miljöpåverkan*. Available online at: <https://www.upphandlingsmyndigheten.se/om-hallbar-upphandling/miljomassigt-hallbar-upphandling/analysera-inkoppen-med-miljospandanalys/kommunernas-miljopaverkan> (accessed November 27, 2022).

- UNEP (2019). *United Nations Environment Programme, Emissions Gap Report 2019*. Nairobi. Available online at: <http://www.unenvironment.org/resources/emissions-gap-report-2019> (accessed October 15, 2020).
- United Nations (1973). *Report of the United Nations Conference on the Human Environment, Stockholm 5–16 June, 1972*. New York, NY: United Nations. Available online at: <https://digitallibrary.un.org/record/523249> (accessed August 1, 2023).
- United Nations (1993). *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3–14 June 1992, Volume I Resolutions Adopted by the Conference. A/CONF.151/26/Rev.1 (Vol. I)*. New York, NY: United Nations. Available online at: <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N92/836/55/PDF/N9283655.pdf?OpenElement> (accessed August 1, 2023).
- Van de Kerk, G., and Manuel, A. R. (2008). A comprehensive index for a sustainable society: The SSI—the sustainable society index. *Ecolo. Econ.* 66, 228–242. doi: 10.1016/j.ecolecon.2008.01.029
- Vergragt, P. J., Dendler, L., De Jong, M., and Matus, K. (2016). Transitions to sustainable consumption and production in cities. *J. Clean. Prod.* 134, 1–12. doi: 10.1016/j.jclepro.2016.05.050
- Wolf, C. (2016). *The Sage Handbook of Survey Methodology*. London: Sage Publications. doi: 10.4135/9781473957893
- Wolfram, M. (2016). Conceptualizing urban transformative capacity: a framework for research and policy. *Cities* 51, 121–130. doi: 10.1016/j.cities.2015.11.011
- Wolfram, M., Borgström, S., and Farrelly, M. (2019). Urban transformative capacity: from concept to practice. *Ambio* 48, 437–448. doi: 10.1007/s13280-019-01169-y
- Zürn, M. (2010). “Global governance as multi-level governance,” in *Handbook on Multi-Level Governance*, eds H. Enderlein, S. Wälti, and M. Zürn (Cheltenham, UK: Edward Elgar Publishing), 80–99.