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Sufficiency Initiatives and Municipalities: Opportunities and Limitations for Bringing People and Politics Together

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Abstract

This article examines the potential and challenges of sufficiency initiatives within the urban environment, focusing on their ability to bring people and politics together. Drawing on research from the EU-funded "FULFILL" project, which includes surveys, interviews and case studies in five EU Member States, this study explores the role of civil society initiatives in fostering sufficiency—a concept that advocates for meeting human needs within planetary boundaries by altering lifestyles, societal norms, and regulatory frameworks. Sufficiency initiatives find themselves in a precarious position against a backdrop of growth-oriented urban development and face barriers such as lack of resources, legal and regulatory challenges, measurement difficulties, and inertia of municipalities. However, the study also identifies examples of fruitful cooperation between municipalities and initiatives and identifies enablers for successful collaboration, including aligned goals, engaged individuals, and effective communication. By providing an outlook for short-, mid-, and long-term governance perspectives, this article argues for strategic niche management in the short term, development of metrics for sufficiency in the medium term, and a systemic shift in urban dynamics in the long term. As urban sufficiency initiatives offer services and infrastructure to promote sustainable living, they are critical players in guiding cities towards ecological and social resilience. This article contributes to the discourse on urban sustainability by highlighting the importance of municipalities in nurturing sufficiency initiatives that can drive social well-being and environmental stewardship.

Keywords

civil society; initiatives; local governance; municipalities; planetary boundaries; social innovations; sufficiency; transformative governance; urban sustainability

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1. Introduction

Cities are accountable for a significant share of energy consumption and contribute approximately 70% of global greenhouse gas emissions (European Commission, 2019). Consequently, they are at the forefront of climate action. However, cities' growth-oriented policies often conflict with their sustainability goals (Böcker et al., 2020).

Sufficiency is increasingly acknowledged as an essential complement to prevailing efficiency and consistency measures in combating the climate crisis (IPCC, 2022; Sachverständigenrat für Umweltfragen, 2024). This article builds upon the conceptual groundwork established within the "FULFILL" project (Pagliano et al., 2023), defining three key areas of impact on sufficiency based on Sahakian and Wilhite (2014): habits, infrastructure, and the societal framework. Thus, the researchers of the "FULFILL" consortium have worked on the basis of a common understanding that sufficiency aims at creating social, infrastructural, and regulatory conditions to change individual and collective lifestyles in ways that reduce energy demand and greenhouse gas emissions to an extent that they remain within planetary boundaries and simultaneously contribute to societal well-being.

Initiatives aiming at sufficiency challenge how communities meet their needs and advocate a conscious shift in consumption and infrastructure towards less resource-intensive lifestyles (Moser et al., 2018). This shift may not always align with the prevailing patterns of urban development and municipal agendas which commonly focus on growth. Yet, if initiatives for sufficiency weave their way into the urban fabric and find synergy with municipal policies, they can incite significant changes in societal norms, practices, individual behaviours, and the built environment. This is where civil society initiatives can bring people and politics together. Through developing and testing innovative solutions, sufficiency initiatives not only reduce the environmental footprint of citizens but can also maintain—or even enhance—quality of life and social equity (Moser et al., 2018).

This study addresses two interconnected research questions:

1. How are the lifestyles of individuals and communities affected towards more sufficiency by initiatives promoting sufficiency?
2. How do municipal structures and policies influence the work of these initiatives, including the impacts of the first research question?

In this article, we suggest that sufficiency initiatives can serve as a focal point for municipalities, offering opportunities to shift away from the contemporary growth-oriented urban paradigm towards a more sustainable, equitable, and resilient city life. We delve into the transformative potential of urban sufficiency initiatives and their capacity to forge stronger bonds between citizens and urban policymaking and planning. Through an exploration of findings from the EU-funded research project "FULFILL," this article examines the opportunities and limitations of cooperation between municipalities and sufficiency initiatives, highlighting the impacts in various urban settings across Europe.

While the research design employed a multi-method approach to capture a broad spectrum of sufficiency initiatives across the EU, the generalizability of the findings may be limited. First, the selection of initiatives, although diverse, may not fully represent the total population of sufficiency initiatives within the EU. Second, the study relies on self-reported data from the initiatives themselves, potentially introducing bias

and hindering a comprehensive understanding of the actual impact of the initiatives and the perspectives of collaborating municipalities.

2. Sufficiency in the Urban Environment

Mainstream economic theory is characterised by a remarkable paradox: the more economies become dependent on natural resource exploitation, the more economic theory and practice disregarded nature as a primary source of productivity (Immler, 1985, 1990, 2014). This led to an economic core belief system that established productivity, growth, and expansion as an end in itself and thus as indication of economic success. Even though this theoretical construct makes no sense in a physically limited world, it prevailed as a hegemonic dogma of mainstream economic theory, repressing notions of sufficiency, human scale, or meaning. Economic system rationality progressively colonised human life and interactions (Habermas, 1987), and has been contested by various authors (Bahro, 1977; Polanyi, 1975; Schumacher, 1974). In particular, the underlying assumption that ever-increasing production and consumption of a growing amount of goods and services indicated by GDP (Lepenies, 2013) would increase quality of life was challenged (Fromm, 1976; Illich, 1973) and gave rise to the modern conceptualisation of sufficiency contesting hegemonic core beliefs, norms, and values (Princen, 2005; Sachs, 1999; Sachverständigenrat für Umweltfragen, 2024). Meanwhile, sufficiency discourse has matured into a broad scientific debate (Jungell-Michelsson & Heikkurinen, 2022). There is increasing consensus about the potential of sufficiency for achieving climate neutrality (Faber et al., 2012; IPCC, 2022; Samadi et al., 2017), and first attempts to quantify this have been made (Akenji et al., 2019; Creutzig et al., 2021; Vita et al., 2019). Additionally, sufficiency is characterised by a dual focus including multiple effects on (mental) health and urban attractive spaces (Wiese et al., 2022). Conversely, sufficiency discourse acknowledges potential drawbacks for gender equality. It argues that individual behavioural changes may lead to a greater dependence on unpaid care work, thereby reinforcing traditional gender roles (Spitzner & Buchmüller, 2016).

Cities are examined as venues where the challenges of social transformation are evident and competing rationalities of responses to global environmental changes materialise (Hodson & Marvin, 2017). Transition research focuses on cities and towns where sustainable lifestyles are initiated and tested (Wolfram & Frantzeskaki, 2016; Wolfram et al., 2016). With regard to climate change, local responses have become vibrant fields of experimentation (Castán Broto & Bulkeley, 2013; von Wirth et al., 2019). Experimenting on sustainability transitions is perceived as an "inclusive, practice-based and challenge-led initiative designed to promote system innovation through social learning under conditions of uncertainty and ambiguity" (Sengers et al., 2019, p. 161), taking into account local heterogeneity and interactions between actors and structures (Sengers et al., 2019, p. 161). In this context, Lam et al. (2020) refer to the "sustainability initiative" as an umbrella concept for manifestations of urban sustainability experimentation, such as grassroots innovations, social innovations, transition experiments, and transition initiatives. Led by local actors, they provide new ways of thinking, doing, and organising local solutions to sustainability problems with global relevance (Lam et al., 2020). Transition research has analysed the conditions and context under which local initiatives emerge as well as their potential for scaling (Augenstein et al., 2020; Moore et al., 2015; Naber et al., 2017; Westley et al., 2011), including options for policy interventions to increase their impact (Wiek & Lang, 2016).

This article is about a specific subgroup of urban sustainability initiatives, namely, those that contribute to sufficiency. Thus, we use the term "local sufficiency initiatives" as an umbrella concept for urban

experimentation where citizens test routines and actions using new technologies, infrastructure, and social practices at the local level despite the restrictive external conditions and incentive structures that make these lifestyles difficult. Moser et al. (2018) assessed the potential of sufficiency initiatives in the areas of housing, mobility, nutrition, and everyday consumption. In line with Best et al. (2013), they perceive sufficiency not only as an individual but also as a political challenge to transform framework conditions so that the realisation of sufficient lifestyles in cities and towns becomes simple, attractive, and accessible to all. While Moser et al. (2018) only considered sufficiency initiatives in the vicinity of Zurich and comparable regions, "FULFILL" has expanded the scope of research to five EU Member States with the expectation of producing knowledge and insights for the EU.

When approaching the relationships of sufficiency initiatives within the urban system, we must consider that sufficiency initiatives have emerged in urban and rural town settings that are anything but sufficient. Physically, the metabolism of cities or rural towns almost completely depends on the primary productivity of their environments. Cities and towns absorb growing quantities of material and energy from complex, globally organised production and supply chains and excrete harmful emissions and waste in return. In sum, modern cities have the ecological properties of parasites (Rees, 1997) and seem to follow their reproductive behaviour, by definition, at the expense of their host systems. Cities and towns tend to expand and spread as a dominating manifestation of human colonisation of the planet (Kraas et al., 2016). The paramount objective of municipalities seems to be economic and physical growth. An analysis of municipal spatial policies in Germany has shown how the governance of cities and towns of industrialised societies is characterised by a number of mutually reinforcing inherent political, fiscal, and legislative rationalities that drive their physical expansion (Knak, 2021).

Local initiatives aiming for sufficiency are essentially utopian, defying the core values and structures of their growth-oriented urban environments. Can sufficiency initiatives thrive in a system that is inherently hostile to its cause? Our hypothesis is that because economic and physical expansion is a systemic property of modern cities and towns, urban sufficiency initiatives are characterised by inherent vulnerability. By design, sufficiency initiatives represent a vulnerable group, not because their members suffer from material deprivation or social exclusion, but because they are continuously fighting an uphill battle against an unsustainable system. For reasons we will further explore in the article, we argue that they deserve special attention and protection in modern cities and towns.

3. Methodology

This research on sufficiency initiatives was carried out across five EU Member States represented by the "FULFILL" project consortium. Denmark, France, and Germany represent the wealthier north-western countries in the EU (Eurostat, 2022), with different energy and political foci. These countries demonstrate well-established efficiency measures and greater potential for sufficiency interventions compared to further efficiency gains (Lorek & Spangenberg, 2019). Italy represents a southern EU Member State, facing distinct economic challenges, particularly in the wake of the COVID-19 pandemic (Zeneli & Santoro, 2023). Lastly, Latvia is a relatively new EU Member State with the transitional experience of a former Soviet republic.

This study employed a sequential, multi-method research design to refine the analysis from a broad overview to an in-depth examination. Each method built upon the preceding one, ensuring that the

approach and selection of sufficiency initiatives for subsequent stages were informed by the findings of the previous phase.

1. *Mapping*: Identifying sufficiency initiatives across participating EU Member States.
2. *Survey*: Using sufficiency initiatives identified during mapping.
3. *Workshops*: One in each of the five EU Member States. Deepening key themes identified from survey.
4. *Case Studies*: Five case studies, one in each EU Member State. Validating and enriching the insights from the survey and workshops.

Our research had two main objectives:

1. *Qualitative analysis of the impact of urban sufficiency initiatives in the EU*. The design and questions employed in the survey, workshops and case studies aimed to identify the self-perceived impact of these initiatives on the environmental footprint, quality of life, and social equity (Moser et al., 2018). Statements from the workshops and case studies were extracted to not only solidify the survey findings with concrete examples but also to uncover further unforeseen impacts. Due to the open-ended discussion format and the initiatives' primary focus on drivers and barriers, the workshops provided less data for impact analysis than the survey and case studies.
2. *Identifying enablers of and barriers to cooperation between municipalities and EU sufficiency initiatives*. The design of the survey, workshops, and case studies also aimed at identifying perceived barriers to and enablers of initiatives regarding their cooperation with municipalities. Specifically, the survey employed a predefined list of categories (e.g., financing, public acceptance, time, etc.) inspired by the findings of Moser et al. (2018) to enable participants to categorise the encountered barriers and enablers. Workshops and case studies adopted a semi-structured discussion format, intentionally omitting predefined categories, to explore whether additional, unforeseen barriers and facilitators might emerge. By analysing survey responses alongside protocols and recordings from the workshops and case study interviews, the most prevalent barriers and enablers faced by the initiatives were identified.

3.1. Mapping

The objective was to identify 45 initiatives across the participating countries (see Table 1) to be included in the survey, workshops, and case studies. The target number aligns with the research design of the "FULFILL" project (45 initiatives with nine per participating EU country). It is important to note that this list does not represent an exhaustive list of sufficiency initiatives but rather serves as a foundation for subsequent research stages.

The selection of the initiatives aimed to achieve a broad spectrum of topics and sectors, thereby reflecting the diversity identified in previous research in Moser et al. (2018). Consequently, the definition of "sufficiency initiatives" within this study encompasses both volunteer-driven and professional initiatives, along with other similar types of organisations such as intentional communities and non-governmental organisations. The primary criterion for inclusion was the initiatives' contribution to promoting sustainable and sufficient lifestyles in a broad sense. This approach resulted in the selection of sufficiency initiatives across five key sectors, as defined by Zell-Ziegler et al. (2021): housing, mobility, food, consumption, and cross-sectoral.

Table 1. Initiatives from the mapping by sector.

Sector	Number of initiatives	Type or topic	Sufficiency in terms of
Housing	14	eco-village, coworking, community, tiny house, shared housing, education on energy and housing, co-housing, reuse/refurbishment of (abandoned) buildings	reduction of waste, reducing energy consumption, reusing buildings, sharing space
Mobility	9	car sharing, cargo-bike sharing, ride sharing, mobility transition	sharing, reduction of car use, transition to eco-friendly mobility
Food	11	food bank, food sharing, food saving, urban gardening, agriculture, permaculture and traditional practices, community-shared agriculture	reduction of waste, cultivation, land preservation, ecological agriculture
Consumption	8	clothes sharing, repair cafe, phone repair, reusable packaging, zero waste, free shop	reduction of waste, repairing items, reusing products, sharing
Cross-sectoral	3	education, research, transition towns, biodiversity conservation, climate change mitigation	sufficient behaviour, community building, outreach

3.2. Survey

The survey addressed two main subjects: (1) the aims and impacts of the initiatives and (2) their interaction with municipalities and city administrations. Closed and open-ended multiple-choice questions provided initial insights and hypotheses for the subsequent workshops. Participants were also offered the opportunity to complement the survey by providing more detailed information. The survey was translated into five languages (German, French, Italian, Latvian, and Danish). The surveys were completed online, except for the Italian survey which was completed through in-person interviews to enhance response rates. Based on the initial mapping of sufficiency initiatives, a target of approximately ten survey responses per participating country was established. This target proved to be largely achievable, as most countries successfully attained it (see Table 2). However, Denmark and Germany encountered minor difficulties in achieving this goal. Even though the research team invested a significant amount of time, not all of the initiatives identified in the mapping were willing or able to respond to the survey; one possible reason could be that some initiatives are run by volunteers. To reach the target of ten surveys per country, additional initiatives were contacted, resulting in 64 responses with an overshoot of 16 additional responses from Germany (see Table 2).

Table 2. Survey responses per country.

Country	Answers	Initiative sector (listed in descending order of frequency)
Denmark	8	Consumption, housing, food, cross-sectoral, mobility
Germany	26	Mobility, consumption, cross-sectoral, food, housing
France	10	Housing, consumption, cross-sectoral, food, mobility
Italy	10	Food, mobility, cross-sectoral, consumption, housing
Latvia	10	Cross-sectoral, food, consumption, housing, mobility
Total	64	

3.3. Workshops

Following the survey, the research team organised five workshops (online and in-person) in each participating EU Member State, inviting local policymakers and representatives of initiatives to validate and complement the survey results. While engaging with the identified sufficiency initiatives, the research team observed significant variations across national contexts. These discrepancies included factors such as local-level political structures, types of initiatives encountered, and responsiveness and availability of participants. To address this heterogeneity, each participating country developed a workshop design specifically adapted to its national circumstances (details provided in Table 3). Following the completion of the workshops, each partner prepared two summaries in English: one focusing on identifying the impacts of the sufficiency initiatives and another exploring the barriers and drivers. These summaries were then reviewed and the results subsequently compared across the EU Member States. This analysis aims to identify common topics across the EU and specific differences between the participating countries.

3.4. Case Studies

To deepen the insights gained through the survey and workshops, five case studies on sufficiency initiatives were completed. The case studies were selected from a pool of sufficiency initiatives identified in the previous research steps. The primary objective of this selection process was to achieve comprehensive coverage of the diverse content areas. The selection was subject to discussion among the project consortium to ensure a balanced sample. Furthermore, preference was given to initiatives demonstrating a degree of success or established experience, particularly those with strong and ongoing connections to their respective municipalities. Finally, pragmatic considerations led to the selection of responsive initiatives with whom good contact had already been established during the previous research phases. This prioritisation aimed to enhance the quality and depth of the data extracted from the case studies (Table 4).

To comprehensively address the research questions for each case study, the consortium developed a project-specific questionnaire and an impact chain model based on Zell-Ziegler and Thema (2022). The questionnaire was designed to facilitate comparative analysis across cases and provided guidance for semi-structured interviews conducted with members of initiatives and respective municipalities, as well as for completing the impact chain model.

Table 3. Workshops.

Country	Participants (thematic focus of initiatives)	Format	Workshop structure
Denmark	7 (housing, mobility)	online + in-person	First part: Open discussion about identifying barriers.
			Second part: Open discussion about identifying drivers.
			Additional statements obtained through direct contact with initiatives that could not attend the workshop.
France	21 (housing, mobility, consumption, cross-sectoral)	online	Two workshops:
			Workshop 1: First meeting, classifying actions, drivers and barriers relevant for participants.
			Workshop 2: Sharing personal experience gained from interactions between initiatives and municipalities, exploring recommendations.
Latvia	12 (consumption, mobility, food)	in-person	First part: Open discussion about the impacts achieved by participant initiatives.
			Second part: Open discussion about barriers and drivers to cooperation with municipalities.
Germany	15 (housing, mobility, food, cross-sectoral)	online	First part: Open discussion about impacts achieved by participant initiatives.
			Second part: Open discussion about barriers and drivers in the cooperation with municipalities.
Italy	10 (housing, cross-sectoral)	online + in-person	Open discussion of research topics: impacts, barriers, and drivers. No given structure.

Table 4. Case studies.

Country	Initiative
Denmark	Eco-village
Germany	Cargo-bike initiative
France	Tiny house initiative
Italy	Clean air advocacy group
Latvia	Freecycling initiative

The impact chain model was derived from Zell-Ziegler and Thema's (2022) model for analysing energy sufficiency policies, which shares a conceptual foundation with other forms of theory-based evaluations commonly known as theory-of-change or program logic models. These approaches have been widely used for evaluating and planning projects and processes since the 1970s (see, for instance, Rogers & Weiss, 2007; Weiss, 1972). The developed impact chain model guided the analysis and improved visualisation of sufficiency drivers, barriers, and intricate interactions across micro-, meso-, and macro-policy levels by visualising inputs, outputs, outcomes, and the multifaceted impacts of each sufficiency initiative (see Figure 1).
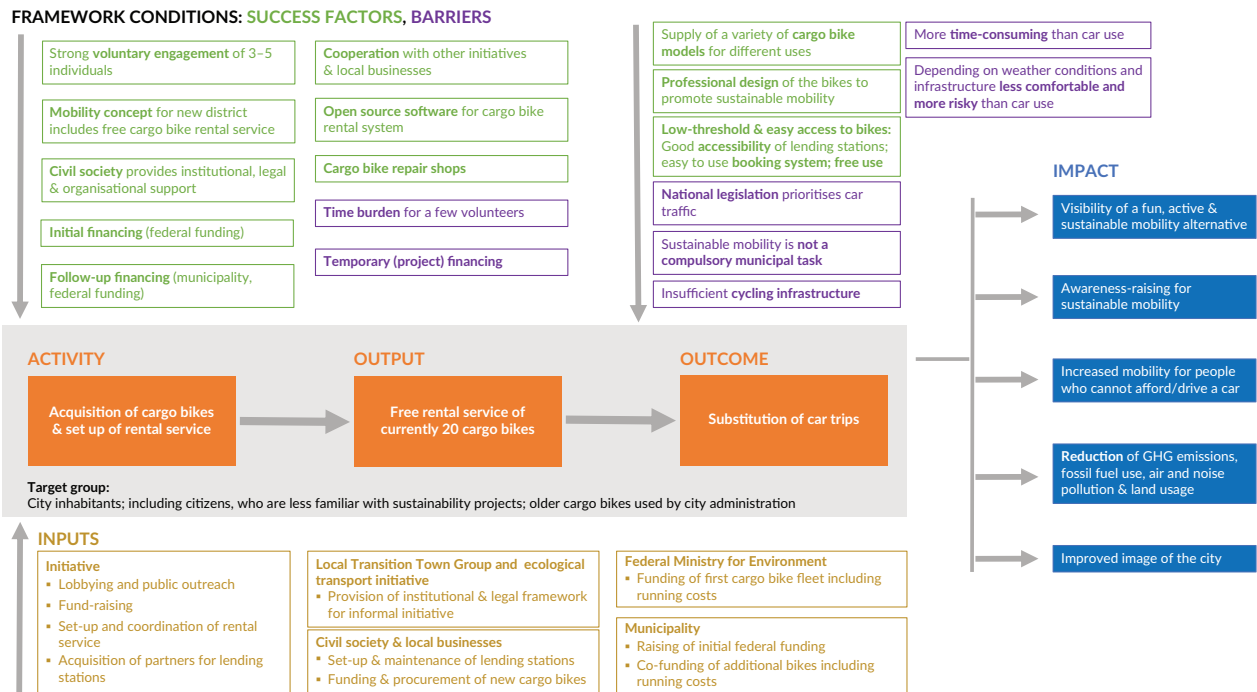
FRAMEWORK CONDITIONS: SUCCESS FACTORS, BARRIERS

Strong **voluntary engagement** of 3–5 individuals

Cooperation with other initiatives & local businesses

Mobility concept for new district includes free cargo bike rental service

Open source software for cargo bike rental system

Civil society provides institutional, legal & organisational support

Cargo bike repair shops

Initial financing (federal funding)

Time burden for a few volunteers

Follow-up financing (municipality, federal funding)

Temporary (project) financing

Supply of a variety of **cargo bike models** for different uses

More **time-consuming** than car use

Professional design of the bikes to promote sustainable mobility

Depending on weather conditions and infrastructure **less comfortable and more risky** than car use

Low-threshold & easy access to bikes: Good **accessibility** of lending stations; easy to use **booking system; free use**

National legislation prioritises car traffic

Sustainable mobility is **not a compulsory municipal task**

Insufficient **cycling infrastructure**

IMPACT

Visibility of a fun, active & sustainable mobility alternative

Awareness-raising for sustainable mobility

Increased mobility for people who cannot afford/drive a car

ACTIVITY → **OUTPUT** → **OUTCOME**

Acquisition of cargo bikes & set up of rental service → Free rental service of currently 20 cargo bikes → Substitution of car trips

Reduction of GHG emissions, fossil fuel use, air and noise pollution & land usage

Improved image of the city

Target group:
City inhabitants; including citizens, who are less familiar with sustainability projects; older cargo bikes used by city administration

INPUTS

Initiative
- Lobbying and public outreach
- Fund-raising
- Set-up and coordination of rental service
- Acquisition of partners for lending stations

Local Transition Town Group and ecological transport initiative
- Provision of institutional & legal framework for informal initiative

Civil society & local businesses
- Set-up & maintenance of lending stations
- Funding & procurement of new cargo bikes

Federal Ministry for Environment
- Funding of first cargo bike fleet including running costs

Municipality
- Raising of initial federal funding
- Co-funding of additional bikes including running costs

Figure 1. Example of an impact chain (cargo-bike initiative, Germany). Source: Own figure based on Zell-Ziegler and Thema (2022).

After the initial round of semi-structured interviews, members of the initiatives were presented with the model's initial versions, allowing them to suggest changes through an iterative process to prevent misunderstandings or the omission of crucial information. Consequently, the model not only guided the analysis but also informed the methodology by shaping questions for the semi-structured interviews.

4. Results

The surveys, workshops, and case studies in the five EU Member States informed the results, which allow the impacts of local sufficiency initiatives as well as drivers of and barriers to sufficiency in their urban environment to be outlined. While the results from the participating countries exhibited a high degree of similarity, Latvia presents a noteworthy exception. Its historical background appears to have exerted an influence on the acceptance of certain sufficiency measures (see Section 4.2.2).

The findings from the survey, workshops, and case studies demonstrate high convergence levels, with all methods pointing in the same direction. While the survey provided quantitative data and baseline information, workshop discussions and interviews facilitated a deeper understanding of the survey results and allowed for a more profound exchange. This was particularly relevant for clarifying terminology, for example "sufficiency" and the distinction between individual habit changes and societal framework shifts, which presented interpretation challenges for some initiatives. The open dialogue format of the workshops enabled discussions on both barriers and drivers. Interestingly, the workshops revealed high interest among the initiatives in discussing barriers, suggesting a preference for addressing challenges rather than drivers.

4.1. Impact of Initiatives on Lifestyle Changes

The survey results indicate that the participating initiatives mainly aim to influence sufficiency habits ($n = 28$) and infrastructure ($n = 20$). Although a relatively small number of initiatives directly identified societal frameworks ($n = 5$) as their main target, responses to detailed questions regarding the nature of their influence overwhelmingly pointed towards "demonstrating to society and decision makers that more sustainable and sufficient ways to live are possible" ($n = 41$). This suggests that initiatives take a bottom-up approach to promoting broader societal change, prioritising the transformation of individual or small-group habits. The workshop discussions showed a similar tendency, with participants primarily expressing concern regarding the scalability of their bottom-up approaches to achieve a "broad impact."

The survey responses identified "explaining and showing the benefits of a more sustainable and sufficient lifestyle to individuals" ($n = 37$) as a key strategy for influencing individual habits. Many sufficiency initiatives within the sample appear to cultivate environmental and social values, potentially impacting the mindsets and behaviours not only of initiative members but also of individuals beyond the organisational boundaries. For instance, one case study initiative provides accessible data on urban air quality and the health effects of pollution, coupled with practical solutions for mitigating these issues.

Another important impact of sufficiency initiatives on individual habits is enabling active participation and engagement. Most of the initiatives analysed, especially those from the workshops and case studies, are volunteer-driven grassroot initiatives that encourage personal investment in collective efforts to live sustainably. A noteworthy example from the case study interviews is the concept of shared decision-making employed by one eco-village. This approach requires a commitment of effort from all residents, particularly regarding financial and management choices. Moreover, this can generate positive spillover effects, resulting in active citizenship and additional pro-environmental behaviour beyond the initially targeted impacts (Elf et al., 2019). For example, residents of an eco-village who were interviewed are not only provided with sustainable housing but also access to sharing services such as car sharing and shared tools that further reduce consumption. However, some initiative services may pose a risk of negative side-effects. For instance, an interview with a freecycling initiative revealed that the availability of free items sometimes leads users to acquire more than they would if they had to pay for them, eventually encouraging additional consumption.

Furthermore, sufficiency initiatives can offer various benefits to participants beyond environmental impact. Consistent with the dual focus of sufficiency, sufficiency initiatives can provide health advantages such as improved (mental) well-being (Wiese et al., 2022). This can be seen in initiatives fostering a sense of community and belonging. For example, a resident from an eco-village stated that:

> It gives me so much meaning living here. In contrast to living in the city, when it comes to the climate agenda, it just makes so much sense being part of working the land, living more sustainably. Feeling like I am a part of this. I felt more alienated before, and more powerless.

Promoting "the tiny house way of life" is another example from a tiny house initiative. This initiative emphasises that the collaborative construction of tiny houses not only fosters the acquisition of new skills but also strengthens community. Such collaboration reinforces shared values and promotes connectedness among participants.

In terms of infrastructure, sufficiency initiatives can offer resources to facilitate sufficiency habits on a small scale, both for their members and the public. The case study involving a cargo-bike initiative exemplifies this approach. The initiative provides citizens free access to cargo bikes and related service infrastructure without membership requirements, promoting sustainable transportation of goods. Similarly, the freecycle initiative from the case studies demonstrates an alternative to consuming new goods. This platform facilitates the circulation of unwanted items within the community with the aim of waste reduction by offering citizens the opportunity to acquire free items and dispose of unwanted goods.

4.2. Barriers to Cooperation Between Initiatives and Municipalities

Through an inductive analysis comparing the results of the survey, workshops, and case studies, four key areas emerged as potential barriers to cooperation between initiatives and municipalities.

4.2.1. Lack of Human and Financial Resources

A significant challenge identified for sufficiency initiatives within the sample is the lack of financial and human resources. This is evidenced in the survey data, where the most commonly cited barriers include "financing" ($n = 36$), "finding motivated staff or volunteers" ($n = 32$), and "too little time/overload of members" ($n = 30$).

While the workshop and case study participants generally reported positive experiences when securing funding, two key obstacles emerged. First, many initiatives identified the process as time-consuming and lacking transparency, further compounded by a lack of available information regarding potential funding opportunities. Second, participants expressed concerns about the structure of public funding. Typically, public funds are provided as one-time project grants, which initiatives perceive as less beneficial than continuous support, particularly for staffing needs.

Although most of the initiatives presented in the workshops and case studies do not have difficulties recruiting volunteers, they experience a high membership turnover rate. Some administrative tasks are often described as very time-consuming and require a certain level of experience, which is why the initiatives would like to have paid staff dedicated to these tasks and for communicating with authorities.

4.2.2. System Inertia

The survey further highlighted the lack of "support by politicians and administrations" ($n = 28$) as a significant barrier, particularly considering that 34 initiatives rated such support as "very important." Workshop discussions and case studies revealed a similar pattern: local authorities are often reluctant to support initiatives, and initiatives struggle to identify appropriate municipal contacts. The interviewed initiatives attributed this lack of support to potential risk aversion among municipal employees or limitations in their capacity. Historical factors may also play a role. In the Latvian workshops, participants noted that the country's Soviet past has significantly impacted public acceptance of single sufficiency measures like communal living and food sharing, potentially influencing municipal attitudes towards related activities. While our analysis did not extend to a detailed historical examination of all five countries, Latvia stood out in this respect. Nevertheless, we assume that national contexts, including historical and socio-cultural factors like social trust and economic equality, likely influence participation in voluntary organisations and

interactions with local governments (Rothstein & Uslaner, 2005). By exploring these national contexts, future research may contribute to a deeper understanding of the underlying system dynamics.

4.2.3. Regulatory and Legal Hurdles

Depending on the sector, the collaboration between initiatives and municipalities is also affected by legal and administrative issues ($n = 13$). For instance, the workshops revealed that eco-villages and community-supported agriculture initiatives face challenges related to local zoning regulations and city planning processes. In addition, workshop discussions highlighted how existing insurance policies, such as those designed for individual car ownership, and utility regulations can hinder car-sharing initiatives.

4.2.4. Lack of Independent Evaluation and Measurable Success

The case study analyses revealed another challenge for initiatives: the limited resources available for conducting independent evaluations of their impact. Specifically, initiatives often lack the capacity to quantify their contributions in terms of avoided carbon emissions, resource savings, and citizen well-being. The absence of robust evaluation metrics hinders efforts to demonstrate results and, consequently, can impede the acquisition of municipal support.

4.3. Enabling Cooperation Between Initiatives and Municipalities

By comparing the survey, workshop, and case study results (see also Section 4.2), we identified two main enablers to good cooperation between initiatives and municipalities.

4.3.1. Engaged Individuals and Effective Communication

The survey, workshops, and case studies consistently identified two key enablers of the initiatives' success: engaged individuals and effective communication. The survey data reflected this, with several initiatives selecting "motivated staff/volunteers" ($n = 32$) and "shared vision within the initiatives" ($n = 38$) as facilitators. These findings are supported by workshop discussions and case studies. Representatives from local initiatives emphasised that the quality of cooperation with municipalities is often driven by individual motivation and engagement by municipal staff. Additionally, good communication and established personal contact points were identified as beneficial factors. Networking with other initiatives, both within and beyond their sector ($n = 45$), was also viewed as crucial for the success of initiatives within the sample.

4.3.2. Aligning Goals

Successful cooperation between initiatives and municipalities are facilitated by common interests. For example, municipalities struggling with housing market challenges may be more willing to collaborate with housing initiatives to address related legal and regulatory issues, as demonstrated by the case studies. Municipal decarbonisation strategies and reduction targets were also identified as a helpful element for motivating cooperation with sufficiency initiatives, as initiatives can help municipalities reach their sustainability targets.

5. Discussion

This article delves into the transformative potential of sufficiency-oriented initiatives and their capacity to reshape habits, infrastructure, and societal frameworks as the three main impact areas for a more sustainable and sufficient urban future. By drawing upon the insights gleaned from the "FULFILL" research project, the discussion explores our two interconnected research questions.

5.1. Impact of Initiatives on the Lifestyles of Individuals and Communities Towards More Sufficiency

The findings highlight the multifaceted impact of sufficiency initiatives. They primarily target a shift in consumption habits (e.g., sharing goods) and influence existing infrastructure (e.g., provision of cargo bikes). They represent and demonstrate, in their specific domains, a frugal lifestyle as an alternative to the dominant lifestyle of abundance (Sachs, 2022). While not directly targeting societal frameworks, sufficiency initiatives usually represent an approach to social change that works under the assumption that bottom-up diffusion of changes in individual behaviour and lifestyles accumulate in a critical mass that can induce cultural shifts and eventually set the right conditions for change (Lage, 2022). Similar to previous studies like Moser et al. (2018), this research identifies significant benefits for participants beyond environmental gains. Initiatives can foster a sense of community, belonging, health, and improved well-being.

5.2. Influence of Municipal Structures and Policies on the Work of Initiatives

Given their potential societal and environmental benefits, sufficiency initiatives can make valuable contributions to the challenges faced by urban systems during the climate crisis. However, these initiatives are inherently vulnerable because they operate contrary to the prevailing rationalities of growth-oriented societies (see Section 2). The analysed cooperation between sufficiency initiatives and municipalities reveals numerous barriers that confirm their vulnerability in urban systems. This is particularly evident in the lack of support, manifested by the often reluctant behaviour of municipalities towards these initiatives and their difficulty in identifying appropriate contacts. Furthermore, funding, regulatory, and legal frameworks are generally unsupportive of these initiatives. The few successful initiatives underscore the substantial benefits of effective and supportive cooperation while simultaneously highlighting the systemic inequalities present in other cases. These successful collaborations are primarily facilitated by engaged individuals on both sides, effective communication, and a dedicated municipal contact. Moreover, the alignment of goals between the initiatives and municipalities can significantly enhance their effectiveness.

5.3. Policy Recommendations

Based on the findings of our survey, workshops, and case studies, as well as a review of the literature, we have developed a set of policy recommendations with a subsequent short-, medium-, and long-term perspective.

In the short term, municipalities can support local sufficiency initiatives through strategic niche management, protecting them from the full force of prevailing selection pressures within unsustainable urban systems (Kemp et al., 2000). In the medium term, the challenge lies in translating sufficiency concepts into measurable metrics and indicators essential for evidence-based policymaking. In the long term, the aim is to redirect urban system dynamics towards favouring sufficient solutions over growth-oriented approaches.

This requires a comprehensive policy approach that integrates price signals, infrastructure development, legal frameworks, and social norms to foster systemic change.

6. Conclusion

This research contributes to a better understanding of sufficiency at the local level and its impacts at the individual and community levels and provides insights into the necessary conditions for sufficiency initiatives to be upscaled. The rich tapestry of civil society initiatives across European cities showcases the multifaceted potential to contribute to climate neutrality goals set by the European Green Deal, as emphasised by the growing body of literature. However, the inherent vulnerability of these initiatives stemming from their opposition to the prevailing growth paradigm of modern cities necessitates special attention and protection.

Our research collaboration highlighted a key resource constraint: the time and personal investment required by initiative members, many of whom are volunteers. While their interest was evident, limited time availability sometimes hindered their full engagement. Financial compensation, e.g., for attending workshops, can boost motivation.

Additionally, our research identified the need for further investigation of the complex impacts of sufficiency initiatives on gender equality. Similar to the concerns raised by Spitzner and Buchmüller (2016), reliance on volunteer work may unintentionally reinforce gender disparities. Conversely, some initiatives, such as eco-villages, can alleviate the burdens associated with unpaid care work by promoting fairer task distribution. Furthermore, the presence of women in leadership roles in some initiatives suggests the potential to challenge traditional gender norms.

This study builds upon the findings of Moser et al. (2018) by extending their analysis to the EU level and opens doors for deeper research in the EU and other global contexts. Understanding the diverse approaches and impacts of sufficiency initiatives across the world can be a crucial asset.

In conclusion, this research provides a foundation for further investigation of sufficiency initiatives. By fostering their growth and collaboration with municipalities, we can accelerate the path towards a future where cities prioritise sufficiency and can positively contribute to climate change and justice.

Conflict of Interests
The authors declare no conflict of interests.

Data Availability
Additional research data can be found at https://fulfill-sufficiency.eu.

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