



Fundamental decarbonisation  
through sufficiency by lifestyle changes

## **Report on citizen engagement activities**

FULFILL Deliverable D 7.1



# Fundamental decarbonisation through sufficiency by lifestyle changes

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# Project Partners

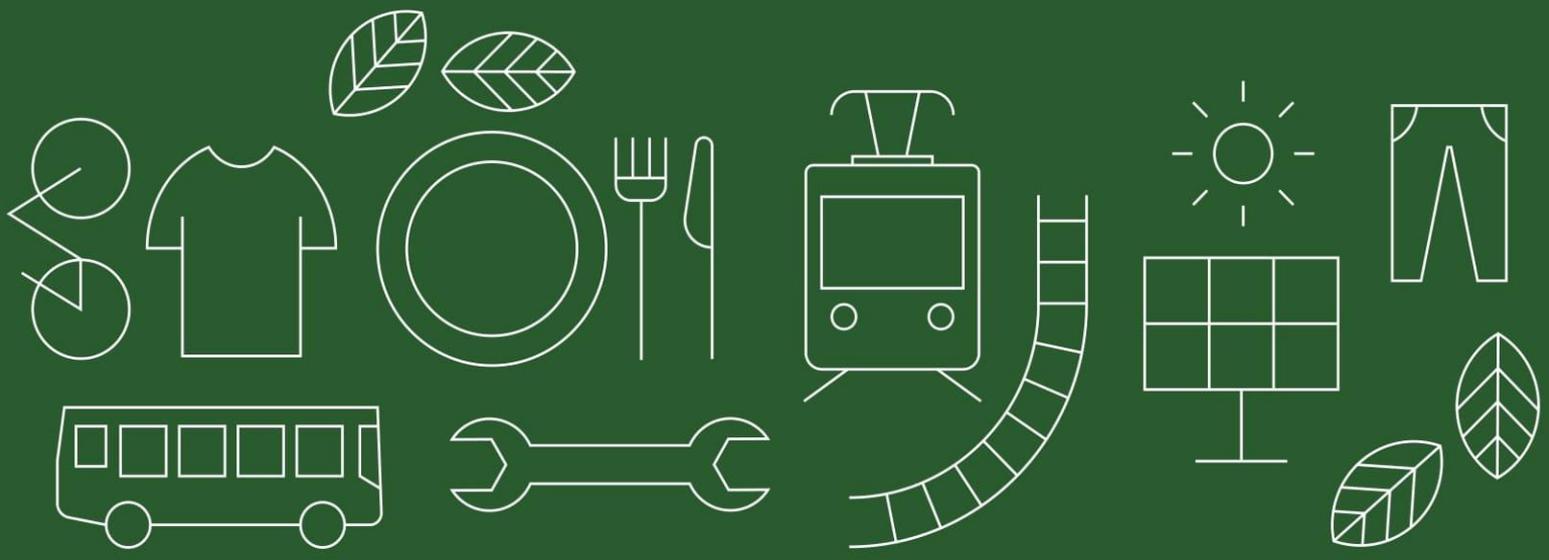
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## List of Abbreviations

<b>EU</b>	European Union
<b>NDC</b>	Nationally Determined Contributions
<b>SSH</b>	Social Sciences and Humanities
<b>NECPs</b>	National Energy and Climate Plans
<b>JDI</b>	Jacques Delors Institute

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## Abstract / Summary

This paper presents the outcomes of Task 7.1 within the FULFILL project. It focuses on citizen engagement and citizen science to enhance the quality and public acceptance of policy recommendations on sufficiency. Led by the Jacques Delors Institute in collaboration with all project partners, this task aimed to engage European citizens in exploring sufficiency lifestyles through a series of three workshops. The workshops provided a platform for participants to critically examine their lifestyles and assess the feasibility and potential benefits of altering daily consumption and investment decisions in alignment with sufficiency principles. Drawing on prior research on citizen science methodologies, the workshops explored drivers, barriers, and co-benefits of sufficiency habits, as well as the impact of communication strategies on behaviour change. This paper outlines the methodologies employed during the workshops, presents key findings and insights generated through participant discussions, and considers the implications of these findings. The paper concludes by highlighting the importance of inclusive, participatory approaches in advancing the green transition, underscoring the relevance of citizen engagement in shaping effective policy interventions.



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## Introduction and Overview

### Purpose of this Document

This report serves as a comprehensive overview of Task 7.1 within the FULFILL project, which focuses on citizen engagement and citizen science to enhance the quality and public acceptance of policy recommendations on sufficiency. At the heart of this task is a series of three workshops designed to engage citizens from diverse backgrounds in exploring sufficiency lifestyles.

The primary objective of this document is to outline the methodologies, outcomes, and implications of the workshops organized under Task 7.1. It begins by introducing the principles of citizen science, providing context for the methodology used in the workshops. Subsequently, it delves into the detailed methodology employed during the workshops, elucidating the approach taken to engage participants and foster inclusive dialogue.

Furthermore, this document presents the outcomes of the workshops, including insights from participant discussions and the impact of various communication strategies on behaviour change. It also highlights how citizen engagement extends beyond the workshops, detailing additional participation possibilities such as through a dedicated blog linked to the project website.

In conclusion, this document encapsulates the main takeaways and key findings of Task 7.1, thereby contributing to the broader objectives of the FULFILL project and strengthening the legitimacy of its recommendations. Through a systematic exploration of citizen engagement and citizen science, this document underscores the importance of inclusive, participatory approaches in advancing the green transition.

### Project Summary

The project FULFILL takes up the concept of sufficiency to study the contribution of lifestyle changes and citizen engagement in decarbonising Europe and fulfilling the goals of the Paris Agreement. FULFILL understands the sufficiency principle as creating the social, infrastructural, and regulatory conditions for changing individual and collective lifestyles in a way that reduces energy demand and greenhouse gas emissions to an extent that they are within planetary boundaries, and simultaneously contributes to societal well-being. The choice of the sufficiency principle is justified by the increasing discussion around it underlining it as a potentially powerful opportunity to achieve progress in climate change mitigation. Furthermore, it enables us to go beyond strategies that focus on single behaviours or certain domains and instead to look into lifestyles in the socio-technical transition as a whole. The critical and systemic application of the sufficiency principle to lifestyle changes and the assessment of its potential contributions to decarbonisation as well as its further intended or unintended consequences are therefore at the heart of this project. The sufficiency principle and sufficient lifestyles lie at the heart of FULFILL, and thus constitute the guiding principle of all work packages and deliverables.

### Project Aim and Objectives

To achieve this overarching project aim, FULFILL has the following objectives:

- Characterise the concept of lifestyle change based on the current literature and extend this characterisation by combining it with the sufficiency concept.
- Develop a measurable and quantifiable definition of sufficiency to make it applicable as a concept to study lifestyle changes in relation to decarbonisation strategies.
- Generate a multidisciplinary systemic research approach that integrates micro-, meso-, and macro-level perspectives on lifestyle changes building on latest achievements from research into social science and humanities (SSH), i.e. psychological, sociological, economic, and political sciences, for the empirical work as well as Prospective Studies, i.e. techno-economic energy and climate research.



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- Study lifestyle change mechanisms empirically through SSH research methods on the micro- (individual, household) and the meso-level (community, municipal):
  - achieve an in-depth analysis of existing and potential sufficiency lifestyles, their intended and unintended consequences (incl. rebound and spillover effects), enablers and barriers (incl. incentives and existing structures) as well as impacts (incl. on health and gender) on the micro level across diverse cultural, political, and economic conditions in Europe and in comparison to India as a country with a wide range of economic conditions and lifestyles, an history which encompasses simple-living movements, and a large potential growth of emissions.
  - assess the dynamics of lifestyle change mechanisms towards sufficiency on the meso-level by looking into current activities of municipalities, selected intentional communities and initiatives as well as analysing their level of success and persisting limitations in contributing to decarbonisation.
- Integrate the findings from the micro and meso-level into a macro, i.e. national and European, level assessment of the systemic implications of sufficiency lifestyles and explore potential pathways for the further diffusion of promising sufficiency lifestyles.
- Implement a qualitative and quantitative assessment of the systemic impact of sufficiency lifestyles which in addition to a contribution to decarbonisation and economic impacts includes the analysis of further intended and unintended consequences (incl. rebound and spillover effects), enablers and barriers (incl. incentives and existing structures) as well as impacts (incl. on health and gender).
- Combine the research findings with citizen science activities to develop sound and valid policy recommendations contributing to the development of promising pathways towards lifestyle
- Generate findings that are relevant to the preparation of countries' and the EU's next NDCs and NDC updates to be submitted in 2025 and validate and disseminate these findings to the relevant stakeholders and institutions for exploitation.
- Consider the relevance and potential impacts of sufficiency lifestyles beyond the EU.



# 1. Introduction

Task 7.1 within the FULFILL project has been dedicated to engaging citizens to enhance the quality and public acceptance of policy recommendations on sufficiency. This endeavour has been realized through a series of three workshops which have been developed by the JDI team based on prior research on citizen science methodologies. These workshops provided a platform for participants to critically examine their own lifestyles and assess the feasibility of altering daily consumption and investment decisions in line with sufficiency principles.

Besides investigating drivers, barriers and co-benefits of sufficiency habits, the workshops further sought to explore the effect of communication strategies extending beyond traditional climate-centric narratives on behaviour change. Through a participatory approach, the workshops set out to identify nuanced pathways towards embracing sufficiency lifestyles, thereby contributing to the FULFILL research and informing the development of future policy recommendations.

The inclusivity of these workshops was underscored by their diverse participant base, encompassing citizens from various European countries, with a commitment to gender parity and fostering inclusive dialogue. Additionally, particular attention was devoted to engaging young adults, aligning with existing programs such as summer schools and educational initiatives across Europe.

This report starts with an introduction of the principles of citizen science (chapter 1) before laying out the methodology used in the workshops (chapter 2). It further details the outcomes of the workshops in chapter 3 and explains how citizens have been engaged beyond the three workshops in chapter 4. In chapter 5, the main take aways are summarized in conclusion.

## 1.1. Participatory Research and Citizen Science in the green transition

Participatory research is at the core of advancement in many fields due to its ability to capture the ideas and experiences of people of various backgrounds, which serves as a benefit to the research itself as well as to those involved. Sufficiency seems to be an especially fruitful topic for participatory research. As citizens are active energy consumers, they have the possibility to adopt sufficiency habits, yet their choices are influenced by larger structures such as legislation, infrastructures, and societal norms.<sup>1</sup> Their ideas and contributions on how sufficiency can be levered as a decarbonization strategy is thus, important to research.

To outline the larger context, citizen participation is essential for ensuring the success, sustainability, and social legitimacy of the energy transition. By engaging citizens as active participants in the process, policymakers and energy stakeholders can harness local knowledge, promote innovation, and build trust, ultimately leading to a more inclusive and effective transition.<sup>2</sup> While EU climate policy overall appears to have large public support<sup>3</sup>, it remains vulnerable to legitimacy challenges, especially regarding transparency and inclusion in decision-making, that must be better taken into consideration to ensure broad agreement on the way forward.<sup>4</sup> Participatory processes could prove particularly useful to keep exploring socially acceptable green policy designs. If done right, it could improve the democratic quality of EU decision-making processes and outcome<sup>5</sup>, and be a useful complement to

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<sup>1</sup> Pagliano, Lorenzo, Gianluca Brunetti, Matteo Clementi, Silvia Erba, and Alessandro Rogora. "Literature review for analysis of lifestyle change." Deliverable 2.1 of the FULFILL project, 2022. Accessed February 13, 2024. <https://fulfill-sufficiency.eu/wp-content/uploads/2023/10/D2.1-Literature-review-revised-version.pdf>

<sup>2</sup> Madeleine Wahlund, Jenny Palm, The role of energy democracy and energy citizenship for participatory energy transitions: A comprehensive review, *Energy Research & Social Science*, Volume 87, 2022, 102482, ISSN 2214-6296, <https://doi.org/10.1016/j.erss.2021.102482>.

<sup>3</sup> European Commission (2023) *Special Eurobarometer 538 Climate Change*

<sup>4</sup> Von Homeyer, I., Oberthür, S., & Jordan, A.J. (2021). "EU climate and energy governance in times of crisis: Towards a new agenda." *Journal of European Public Policy*, 28(7), 959–979

<sup>5</sup> Offe 2014, Fishkin 2014, in Cengiz, F. (2023). Dilemmas of deliberative democracy in the EU: why (not) and how (not)? in Bremberg, N. Norman, L. (Eds) *Dilemmas of European Democracy. New Perspectives on Democratic Politics in the European Union*. Edinburg University Press.

representative democracy.<sup>6</sup> In fact, citizen assemblies and citizen panels are now increasingly used by the European Commission, by randomly selecting citizens to discuss a variety of issues and share their ideas to feed into European policy processes.<sup>7</sup>

When asked to express their opinions, citizens call for more sufficiency policies. A comparison of European citizen assemblies and National Energy and Climate Plans (NECPs) shows that citizen assembly recommendations include a significantly higher share of sufficiency policies (factor three to six) with a stronger focus on regulatory policies compared to NECPs. This can be interpreted as a call by citizens for more sufficiency policies and a regulatory turn in climate mitigation politics. These results suggest that the observed underutilization of sufficiency as a lever for decarbonization is not due to a lack of legitimacy or acceptance by the public, but rather reflects a reluctance to implement sufficiency policies, the constitution of the policy making process and competing interests.<sup>8</sup>

## Citizen Science in FULFILL

While there are many terms that could fall under “participatory research”, **citizen science** aims specifically at “collecting and analysing biology, conservation, biodiversity and climate change data” as well as “public participation in social sciences and epidemiological research”<sup>9</sup>. Some of the following principles characterize **citizen science research**<sup>10</sup>:

- Actively involving citizens in a scientific endeavor that generates new knowledge or understanding.
- Allowing citizens to actively contribute to political decision-making.
- Providing benefits to both science and society (i.e. learning opportunities, personal enjoyment, social benefits, publication of research outputs, contributing to scientific evidence that can influence policy on local, national, and international levels, and connecting a wider audience through discussions on the energy transition).
- Citizens receive and give feedback from the project: When made aware of how their contributions can impact policies, they are not only being treated with transparency, but they may also be more motivated to participate.
- Increasing accessibility of science in society by introducing important technical terms in ways that make it easier for citizens of all backgrounds to understand and participate.
- Results from the project are made publicly available when possible.
- Citizen scientists are suitably acknowledged by projects.

In the context of FULFILL, the concept of Citizen Science is based around the idea of bringing together citizens and professional researchers in the energy field to generate new knowledge or understanding on best sufficiency practices, the required legislative changes as well as infrastructures that can help work toward the green transition. At the same time, it allows for the development of a common understanding among a wide audience about the concept of sufficiency and its relevance in addressing climate change.

<sup>6</sup> Franco-German working group on EU institutional reform (2023). “Sailing on high-seas – reforming and enlarging the EU for the 21st Century.” *Report*

<sup>7</sup> Paulo Rosa. Participatory and deliberative democracy. New generation of Citizens’ Panels | CoP CC on Participatory and Deliberative Democracy. <https://cop-demos.jrc.ec.europa.eu/blog/new-generation-citizens-panels>

<sup>8</sup> Lage, Jonas, Johannes Thema, Carina Zell-Ziegler, Benjamin Best, Luisa Cordroch, and Frauke Wiese. “Citizens call for sufficiency and regulation — A comparison of European citizen assemblies and National Energy and Climate Plans.” *Energy Policy* 2023 (2023): 114826. <https://doi.org/10.1016/j.enpol.2022.114826>.

<sup>9</sup> Haklay Muki, Fraisl Dilek, Greshake Tzovaras Bastian, Hecker Susanne, Gold Margaret, Hager Gerid, Ceccaroni Luigi, Kieslinger Barbara, Wehn Uta, Woods Sasha, Nold Christian, Balázs Bálint, Mazzonetto Marzia, Ruefenacht Simone, Shanley Lea A., Wagenknecht Katherin, Motion Alice, Sforzi Andrea, Riemenschneider Dorte, Dorler Daniel, Heigl Florian, Schaefer Teresa, Lindner Ariel, Weißpflug Maike, Mačiulienė Monika and Vohland Katrin 2021 Contours of citizen science: a vignette study. *R. Soc. Open Sci.* 8:202108202108. <http://doi.org/10.1098/rsos.202108>

<sup>10</sup> “10 Principles of Citizen Science.” Australian Citizen Science Association. Accessed February 15, 2024. <https://citizenscience.org.au/10-principles-of-citizen-science/>.





The process of learning together allows for a true engagement of citizens in the research process as “co-researchers”. In the case of FULFILL, the fruits of this work are shown specifically in the “co-creation” and formulation of policy recommendations that are based on the real-life experiences of the citizens participating in the workshops. This approach allows citizens to actively participate by expressing their preferences regarding sufficiency policies and infrastructures. Consequently, the workshops serve as a platform through which we gain valuable insights into the issues that are most salient to citizens in the context of sufficiency which can help inform the policy recommendations formulated at the end of the project.

Citizen engagement in FULFILL thus has a mutual benefit: improving the quality and public acceptability of policy recommendations while also allowing citizens to have a say on policy recommendations that might directly impact them, consequently motivating them to contribute to a participatory democracy.



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## 2. Methodology

Between January and November 2023, the Jacques Delors Institute (JDI) organised three citizen science workshops in the scope of FULFILL. The first one was aimed specifically at young people between 18 and 30 and was held in the frame of the “Academie notre Europe”, a one-year program about the EU organized by the Jacques Delors Institute.

The second workshop was held in the frame of a summer school on the energy transition at the Institute of Environmental Science and Technology school of the Universitat Autònoma de Barcelona. The workshop was open to participants of the summer school as well as other interested researchers and students from the university.

The final citizen science workshop was held as a two-day event in November 2023 at the “House of Europe” in Paris. The participants consisted of 6 citizens from Denmark, France, Germany, Italy, and Latvia each (29 in total) selected by the respective FULFILL partner organisations aiming for gender balance and diverse age and occupational status.

Table 1 Overview of the three FULFILL citizen science workshops

No.	Location	Date	Duration	Participants
1	MACIF (the location of the educational programme “Academie Notre Europe”), Paris	February 10 <sup>th</sup> , 2023	2 hours 45 minutes	35 students and young professionals of 16 different nationalities pursuing a one-year program about the EU, called the Académie Notre Europe. The programme is organized yearly by the Jacques Delors Institute and is conducted in French.
2	Institute of Environmental Science and Technology school of the Universitat Autònoma de Barcelona, Barcelona	July 14 <sup>th</sup> , 2023	2 hours	20 students, PhD students and researchers from various nationalities. The workshop took place in the frame of the summer school: “LIPHE4 MuSIASEM Summer School on energy transitions: Diagnosing wishful thinking and identifying critical vulnerabilities.”
3	Maison de l’Europe, Paris	November 23-24 <sup>th</sup> , 2023	2 days	6 citizens from Denmark, France, Germany, Italy, Latvia (29 in total, due to one German participant cancelling last minute) chosen by the partner organisations from every country aiming for gender balance and diverse age and occupational status.



## 2.1. Workshop Organization

All workshops opened with a brief **introductory presentation** of the concept and importance of sufficiency and the FULFILL project. This was further contextualized by a brief comparison of personal carbon footprints by country to highlight the fact that carbon emissions vary greatly across countries and social classes, with richer individuals emitting much more<sup>11</sup>.

During the first and second workshop, participants were able to compare their individual carbon footprints, which they had a chance to explore prior to the workshop through an online carbon footprint calculator called “nos gestes climats<sup>12</sup>”, available in English and French. During the third workshop, we decided not to ask participants to fill in the carbon footprint calculator beforehand since given the two-day format, there was more time to explore personal carbon footprints during the workshop.

Following the introductory presentation, participants were invited to reflect upon **sufficiency habits, barriers, enablers and co-benefits of sufficiency** in four different areas (**Housing, Items (Goods), Transport and Food**) using the world-café method.

The **World Café method** is a facilitation technique used for hosting large group discussions in a creative and participatory manner. It involves participants moving between different tables or discussion stations where they engage in conversations on specific topics or questions. Each discussion table is facilitated by a moderator, who brings participants up to date on what has previously been discussed at the table and who facilitates the discussion. Participants either switch tables (and thus, topics) after a set amount of time or are free to circulate between the different tables. At every table, participants are encouraged to document key points from their discussions for the next group, leading to a synthesis of ideas at the end of the session.

Our world-café consisted of **four thematic tables**:

- Housing
- Items (Goods)
- Transport
- Food

At each table, participants were invited to contribute to the following questions:

- What can I do to reduce my footprint in this area? (**sufficiency habits**)
- What holds me back? (**barriers**)
- What could help me change? (**enablers**)

For the second and third workshop, a fourth question was added as a consequence of findings from other FULFILL work packages<sup>13</sup> that point to the importance of co-benefits in communicating about sufficiency:

- What benefits could result from adopting a sufficiency habit beyond saving energy? (**Co-benefits**)

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<sup>11</sup> Chancel, Lucas, Thomas Piketty, Emmanuel Saez, Gabriel Zucman, et al. World Inequality Report 2022. World Inequality Lab. <https://wir2022.wid.world/>

<sup>12</sup> <https://nosgestesclimat.fr/>

<sup>13</sup> Breucker, Fiona and Defard, Camille. „Report on the comparative analysis of sufficiency policies”. FULFILL Deliverable D5.2, 2023. Accessed February 08<sup>th</sup> 2024. <https://fulfill-sufficiency.eu/wp-content/uploads/2023/10/D5.2-Report-on-the-comparative-analysis-of-sufficiency-policies-0923-1.pdf>



During the **world-café**, participants were divided into four groups that circulated between the thematic tables. Each table was moderated by either a member of the consortium or, in the case of the first workshop, by four volunteers from the participants. The job of the moderators was to stimulate the debate and summarise the main points of discussion after each change of group in order to allow for the next group to deepen the discussion instead of having to start anew. To prepare the four participants from the *Academie Notre Europe* to act as participant-moderators, we supported them in creating fact sheets with information on their topic area to enable them to meaningfully stimulate the debate during the world-café.

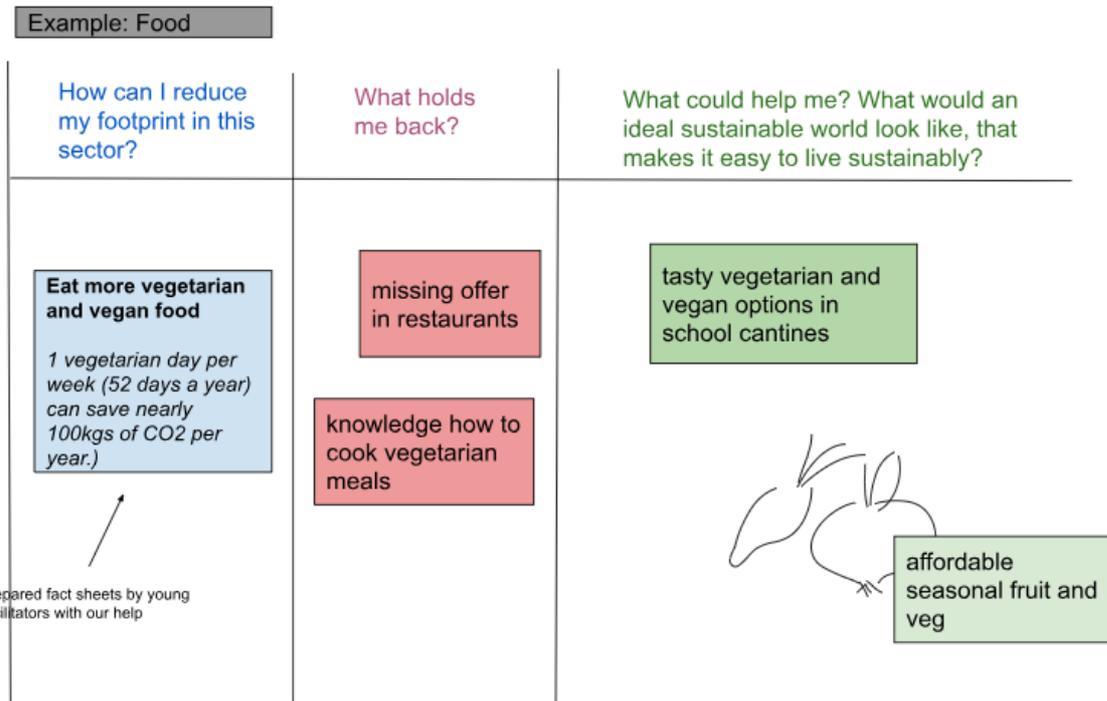


Figure 1 Example of poster board for the “Food” table

Once every group had discussed each topic and visualized their ideas on big posters using post-its, as a next step, these posters showing the outcomes of the first part of the world café were used to come up with **policy recommendations**. To facilitate this process, we introduced a variety of **legislative tools** ranging from educative measures to financial incentives and binding rules. Each group then selected two policy recommendations for their topic area to be brought to a vote at the very end of the workshop, where all participants got together in the auditorium. Each group had elected a representative to present the different proposals for their given topic, which was followed by a debate on the various suggestions, and, finally, a collective vote.

During the first and last workshop, there was enough time to further allow the participants to develop **communication strategies** to foster sufficiency in the four topic areas. During the first workshop, the strategies were put to a vote in the forum alike the policy recommendations whereas in the third workshop, the participants had more time to develop a more thorough communication plan. Putting themselves in the shoes of an actor of their choice (private or public) participants developed a communication strategy to promote a sufficient idea or concept to the broader public.

For more detailed information on the step-by-step programme, the agenda for each workshop can be found in the annex of this report.

During the third and longer workshop, a discussion and ranking of different policy recommendations based on the work conducted in work package 3 was facilitated by researchers from FH ISI (see table 2). The results from this activity will inform further works of work package 3.

Table 2: Ranking Policy Measures in Workshop Number 3

Points	Measure	Explanation
	Financial incentives for accommodating an additional household in an existing dwelling.	Financial benefits such as grants or loans are provided by public bodies to encourage splitting an existing house or apartment into two or more separate units or to encourage renting out rooms in an existing dwelling e.g., to students.
	Participation of citizens in defining the policy design in more detail.	Involving a group of representative citizens in the decision-making process when creating policies to ensure their perspectives, opinions, and needs are considered.
	Financial incentive to move to a smaller place.	Financial benefits are offered by public bodies to households who reduce their space of living by moving to another dwelling.
	Regulation that multi-family buildings include common rooms.	Common rooms encompass shared amenities, for instance guest rooms or washing facilities in order to reduce the space required per person or per household.
	(Additional) financial incentives for renovating old houses or flats for people that are willing to buy an already existing dwelling.	Financial benefits provided by public bodies to encourage refurbishments instead of building new houses.
	Free assistance such as advice on how to find a smaller flat/ house.	The assistance services are provided by the government (e.g., through governmental agencies or social services) to help individuals or families to find and to move to smaller dwellings.



## 2.2. Limitations of the Workshops

While the workshops were successful in engaging a wide variety of citizens across Europe and retaining useful feedback for the research, there are some limitations to recognize. First of all, the workshops were not foreseen to be representative of European citizens. The results can therefore only be used as indications but not as representative of the opinions of European citizens. We tried to mitigate this limitation by introducing a gender balance and diverse age and occupational status as selection criteria for the participants of the final two-day workshop, the only one that was not set to take place within the frame of another event and consequently did not have predetermined participants. We further tried to engage further citizens beyond the workshop participants through FULFILL social media and citizen engagement page on the website and let them express their opinions and vote on the outcomes of the workshops, to include a wider range of citizens' opinions.

Another limitation concerns the short duration of workshop 1 and 2 which constrained the time citizens had to dive into the topic of sufficiency and consequently make meaningful contributions to the policy recommendations. We tried to mitigate this issue by already engaging with participants ahead of the workshops and asking them to fill in the carbon footprint calculator ahead of time to save some time during the workshops. Given the third workshop lasted for two days, there was more time to deepen participant's discussions amongst each other and with FULFILL researchers.

Given the time restriction and the fact that most of the participants had been unfamiliar with the sufficiency concept before the workshops, it remained a challenge for some to fully grasp the difference between sufficiency and more broadly sustainable consumption despite our attempts to make the difference explicit in the introductory presentation. This led to some of the recommendations including efficiency measures (e.g. solar panels) rather than solely focusing on sufficiency. However, the follow-up-survey showed that the vast majority of citizens has nevertheless taken away a good understanding of the sufficiency concept.

To sum up, the conceptualization of citizen science activities within the FULFILL project, characterized by limitations such as time constraints, missing representativeness, and the involvement of laypeople in navigating complex energy topics, necessitates a nuanced interpretation of the results. Rather than viewing these outcomes as directly translatable policy recommendations, they are better understood as a mechanism for engaging citizens in the sufficiency discourse and allowing them to express their preferences on potential sufficiency policies and infrastructures. In that way, the workshops allowed us to get a sense of what kind of issues resonate most with citizens when it comes to sufficiency. Future similar endeavours might want to consider engaging with the same group of citizens several times over a longer period of time instead of several shorter events should they aim for more concrete policy recommendations.



### 3. Results

Results from the workshops were plentiful and ranged from ideas written on the post-it notes participants placed on the boards at each world café table, to creative posters on sufficiency communication strategies to the policy recommendations on which they decided at the end of each workshop.

#### 3.1. World Café Results

The FULFILL team has chosen to summarize the results from each world café in the form of designs that show what were commonly agreed to be important factors in adopting sufficiency measures at the micro and macro levels.

In the **first workshop**, participants described what individual sufficiency habits they could implement in their lives, what barriers keep them from doing so, and what infrastructures and policies would be necessary in order to overcome these barriers, as depicted below (figures 2, 3, 4, 5). The individual actions suggested by citizens are depicted inside the larger bubble of “enablers” such as infrastructures and policies that were also suggested by citizens. The obstacles they came up with are on the side, in the lightning bolt.

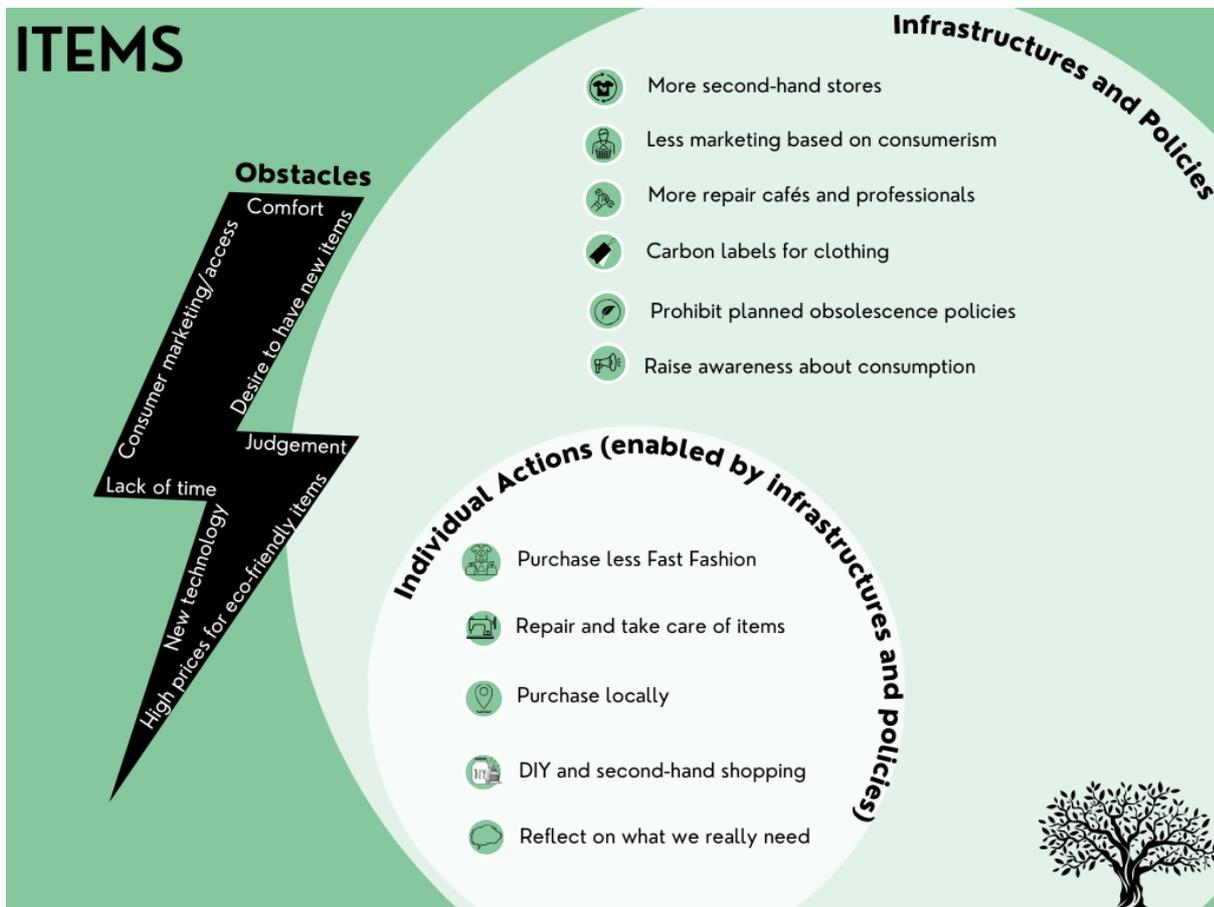


Figure 2 Outcomes of workshop 1 - Items

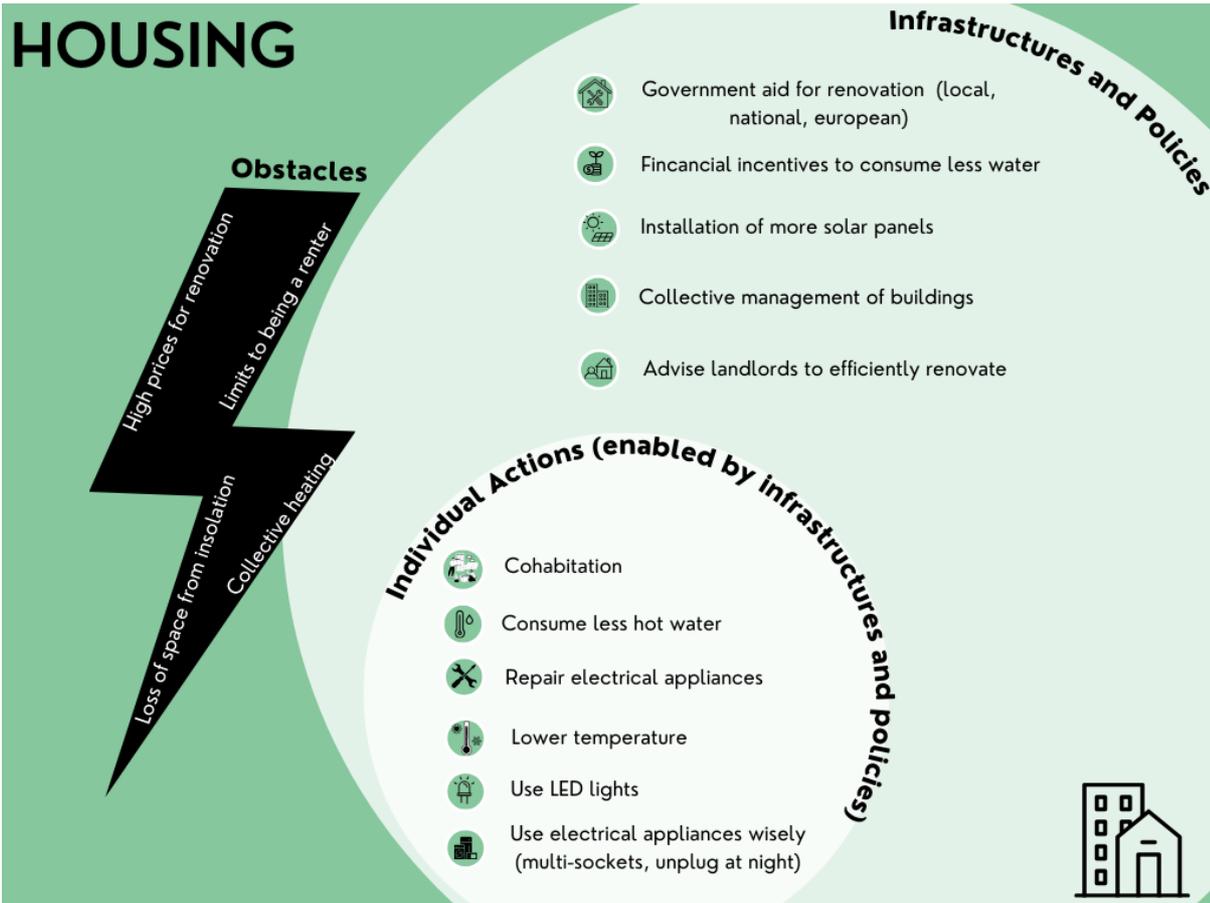


Figure 3 Outcomes of workshop 1 - Housing

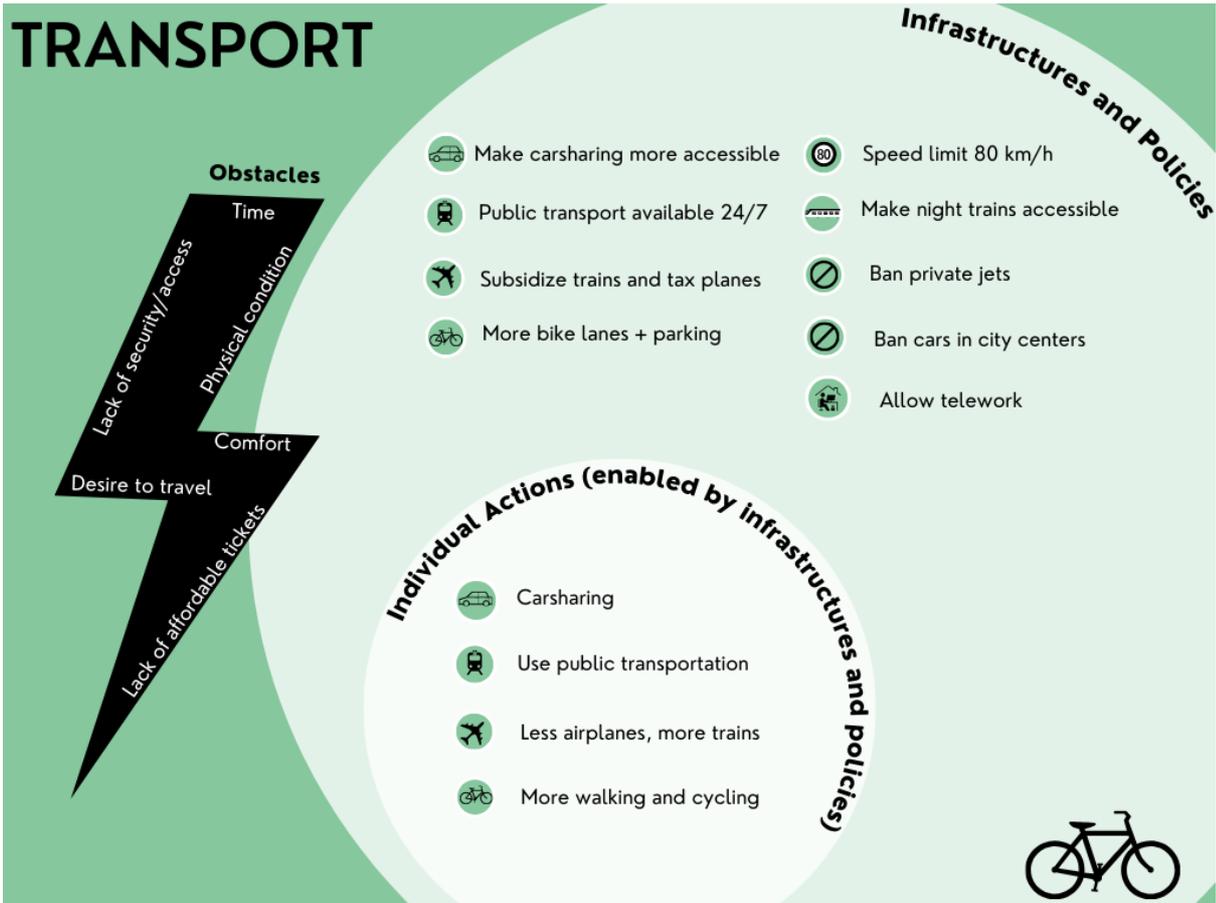


Figure 4 Outcomes of workshop 1 - Transport



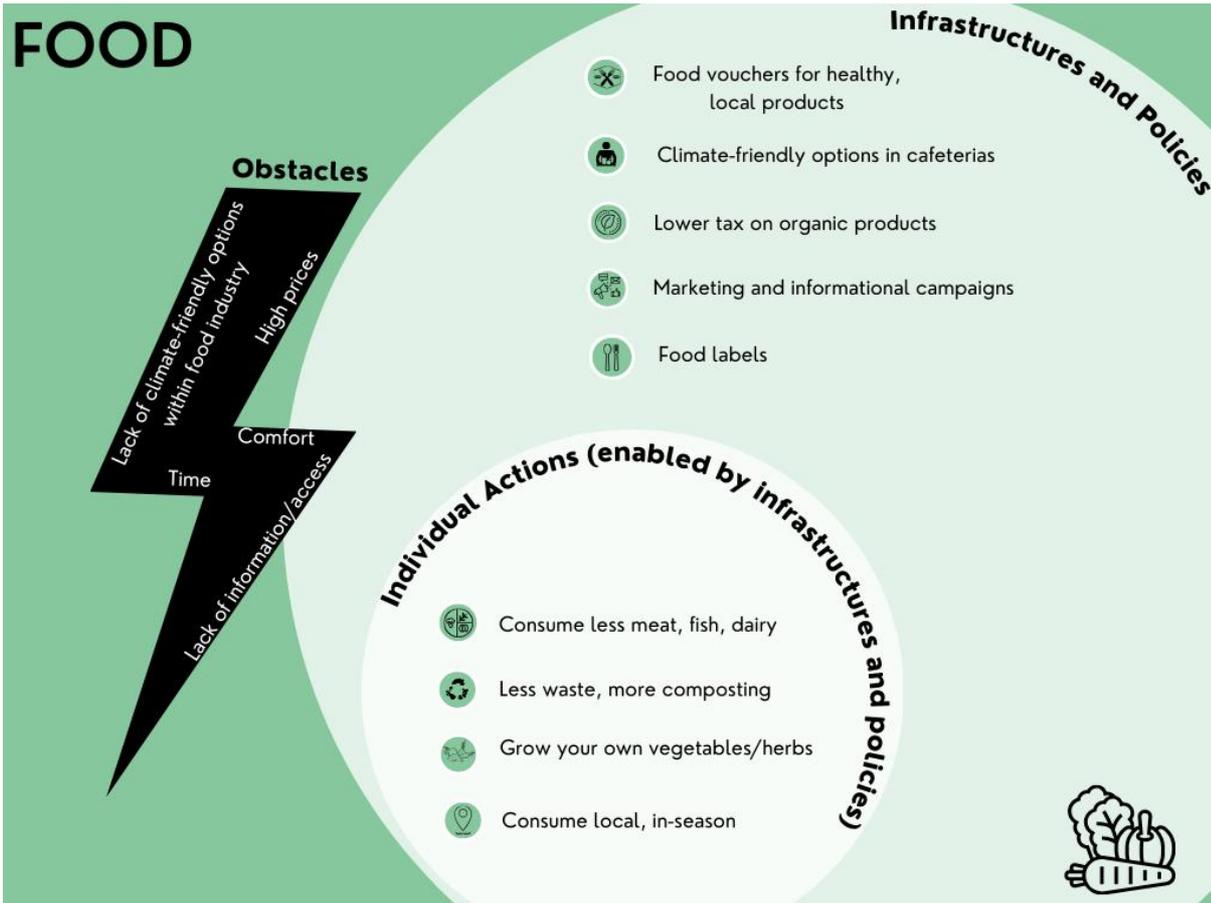


Figure 5 Outcomes of workshop 1 - Food

In the **second workshop**, participants were asked to answer the same questions in addition to coming up with various benefits of adopting sufficiency habits that could be but are not limited to energy. For example, participants discussed the health benefits of using a bicycle for commuting to work as their means of transport (in addition to reducing their carbon footprint). The exact posterboards for the second citizen science workshop are depicted below (figures 6, 7, 8, 9). Each sufficiency habit suggested by citizens takes the form of one color and is followed by its respective barriers, enablers, and benefits suggested by citizens.

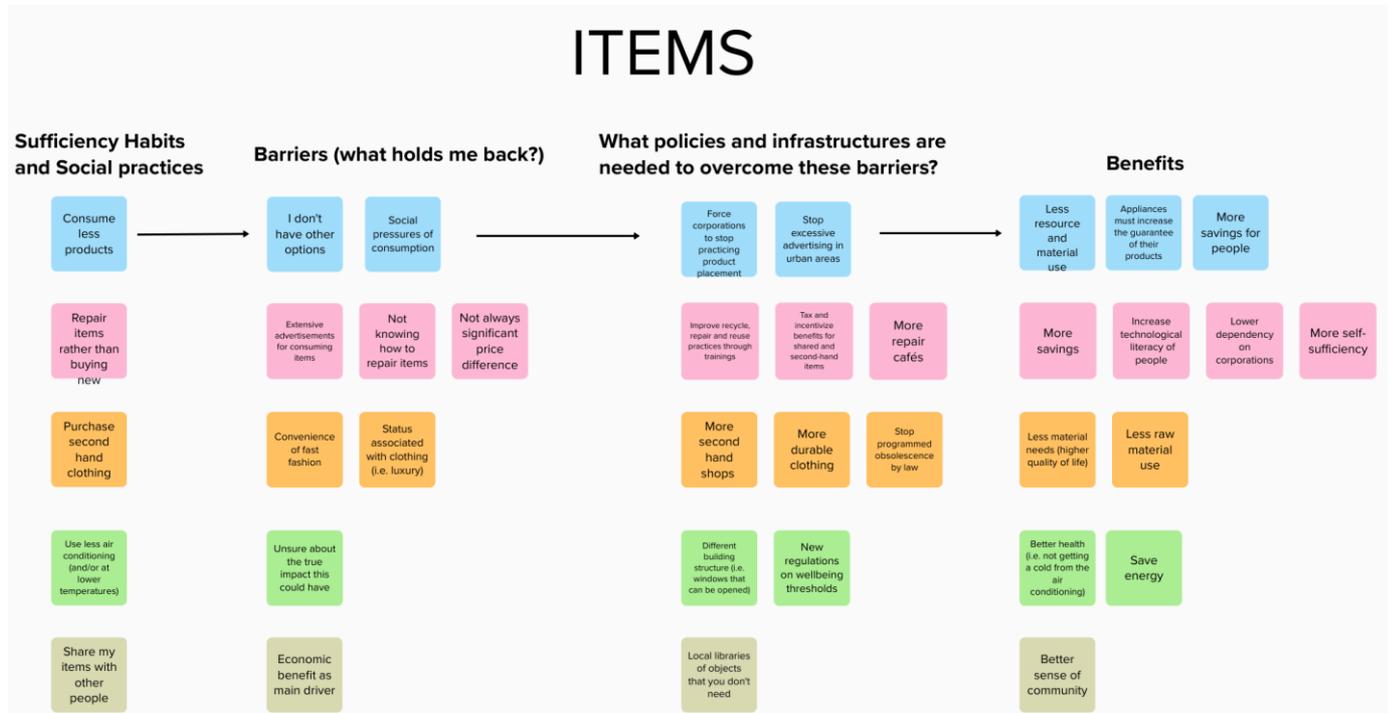


Figure 6 Outcomes of workshop 2 - Items

# HOUSING

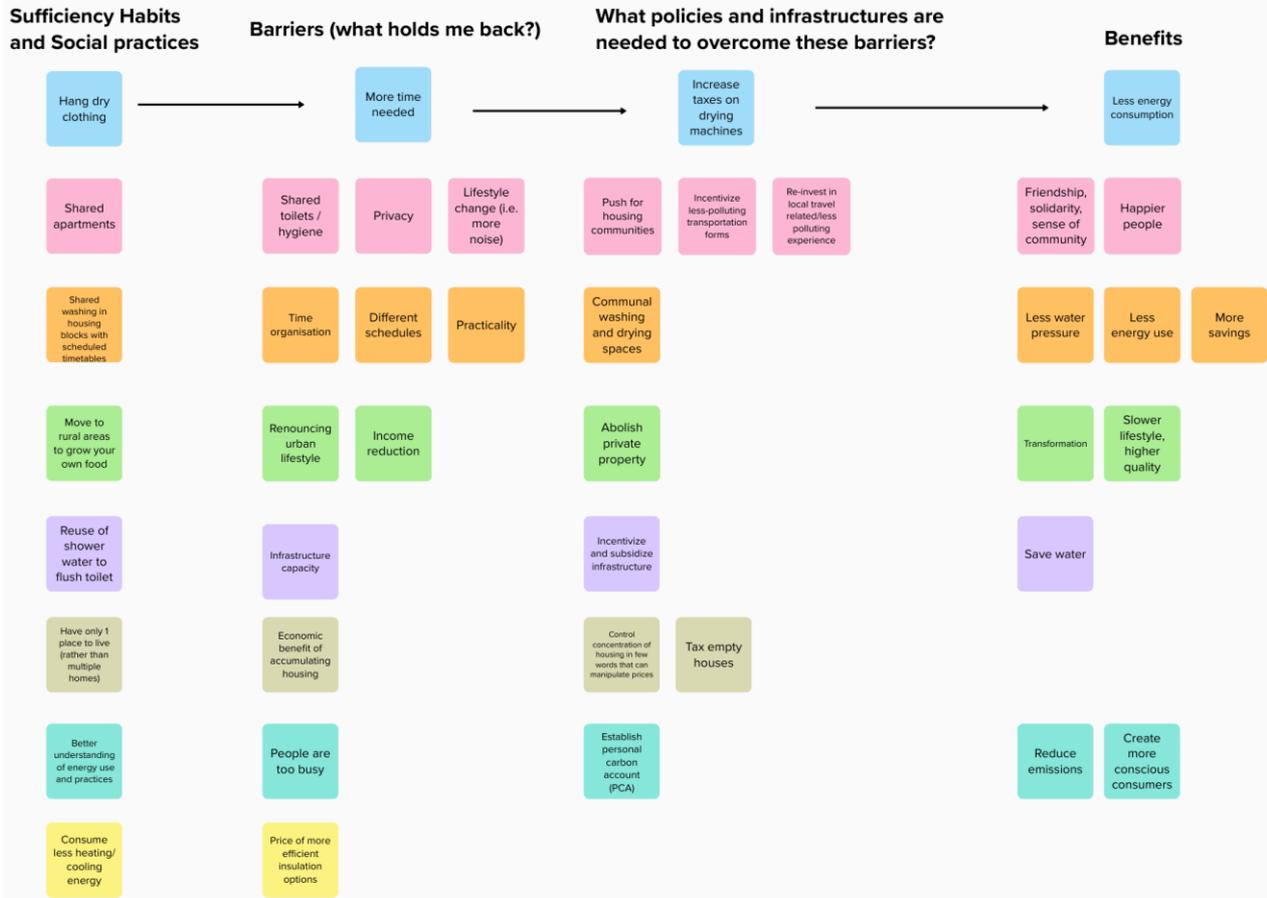


Figure 7 Outcomes of workshop 2 - Housing

# FOOD

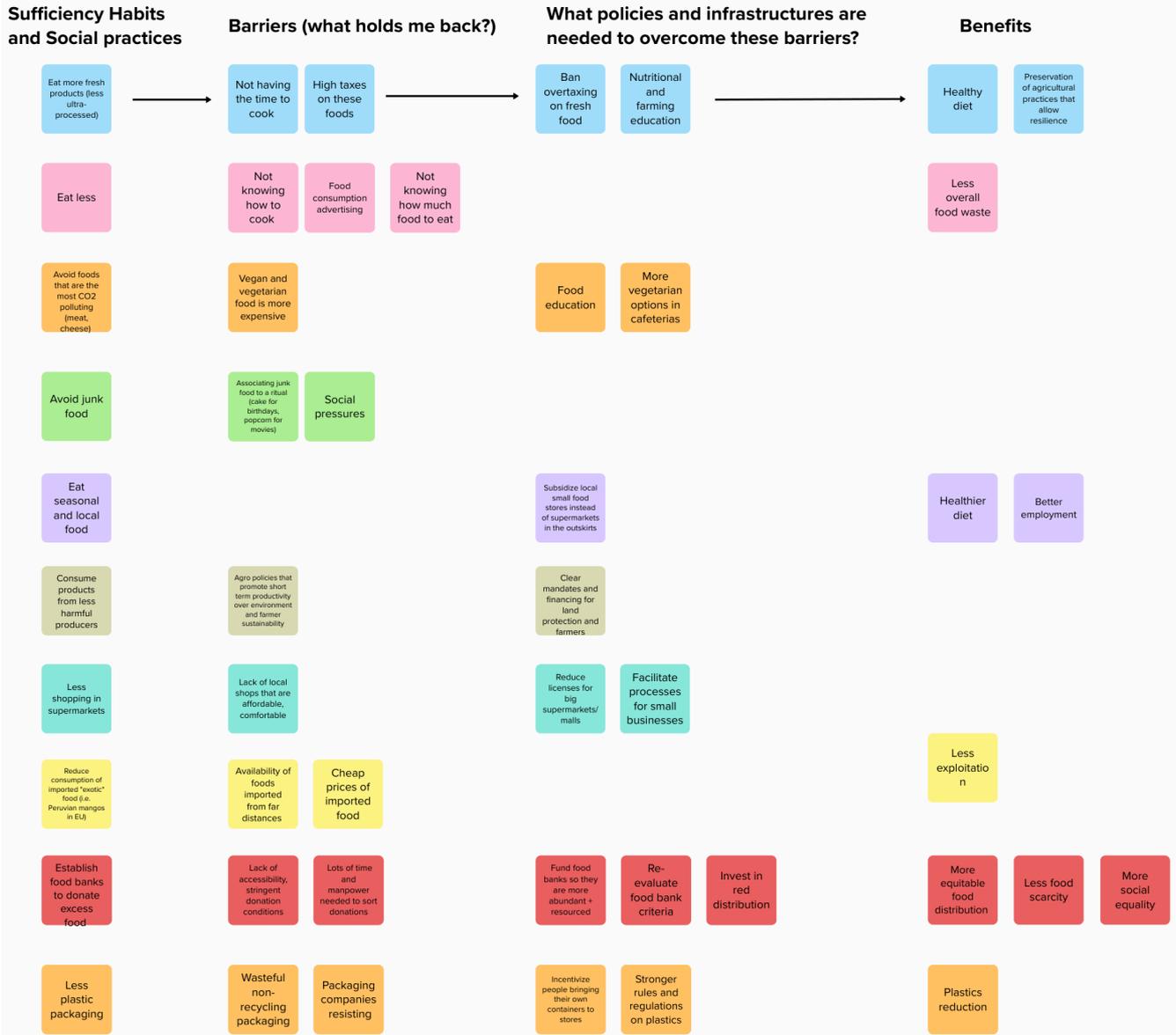


Figure 8 Outcomes of workshop 2 - Food



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# TRANSPORT

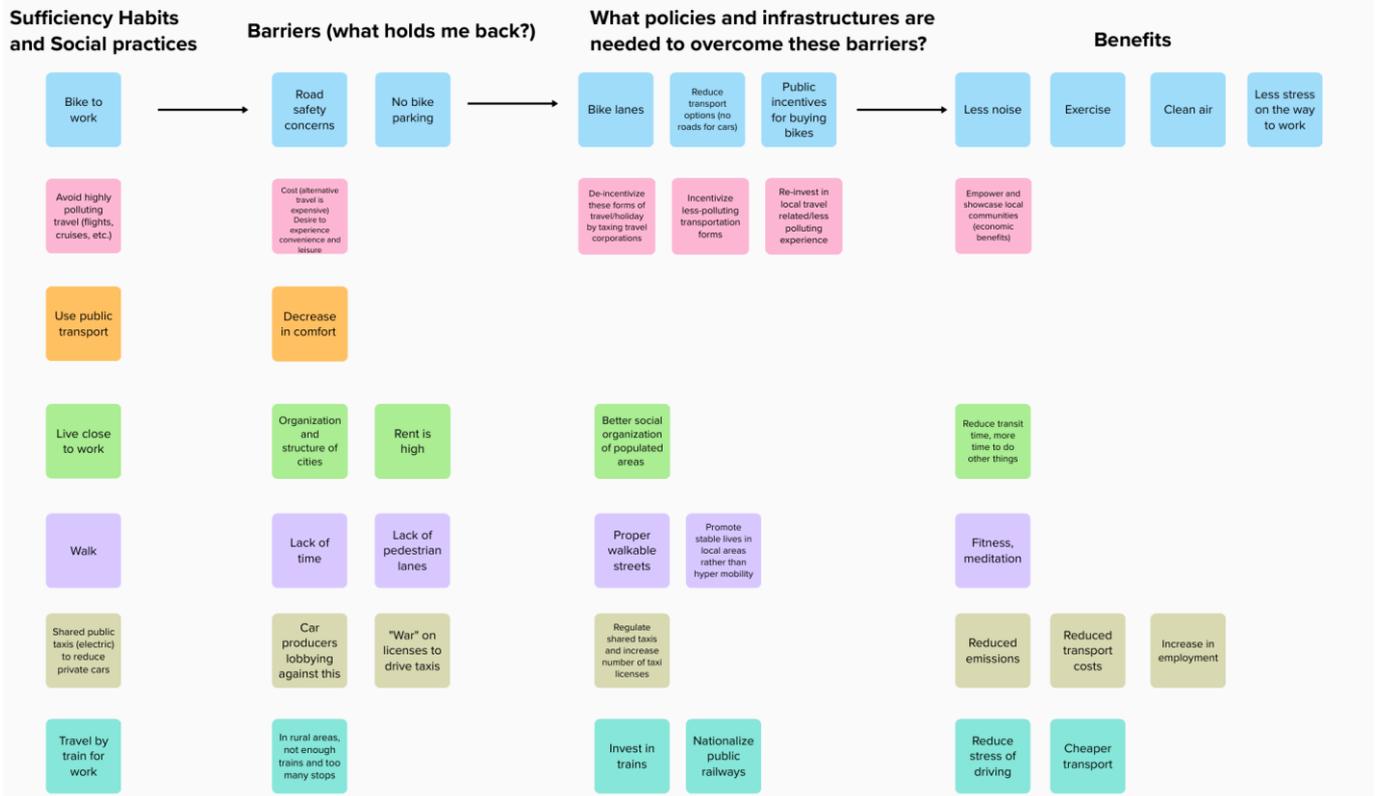


Figure 9 Outcomes of workshop 2 - Transportation



During the **third workshop** world café, citizens were asked to ponder the same ideas: which sufficiency habits they should adopt in order to work toward a more sufficient and environmentally sustainable society (figure 10), as well as barriers (figure 12), enablers (figure 11), and benefits (figure 13) of these habits. Below is a depiction of four different word clouds that show the most shared ideas. For example, time consumption was one of the common barriers to adopting sufficiency habits, effectively using space and improving “urban planning” were enablers to be implemented at a larger level, and “saving money” seemed to be a widely discussed benefit of adopting sufficiency habits. The following figures represent the results in “word clusters”, where the most used/suggested words by citizens are represented in larger font, and the least-used in smaller font.

# Sufficiency Habits



Figure 10 Outcomes of workshop 3 – Sufficiency Habits



# Enablers

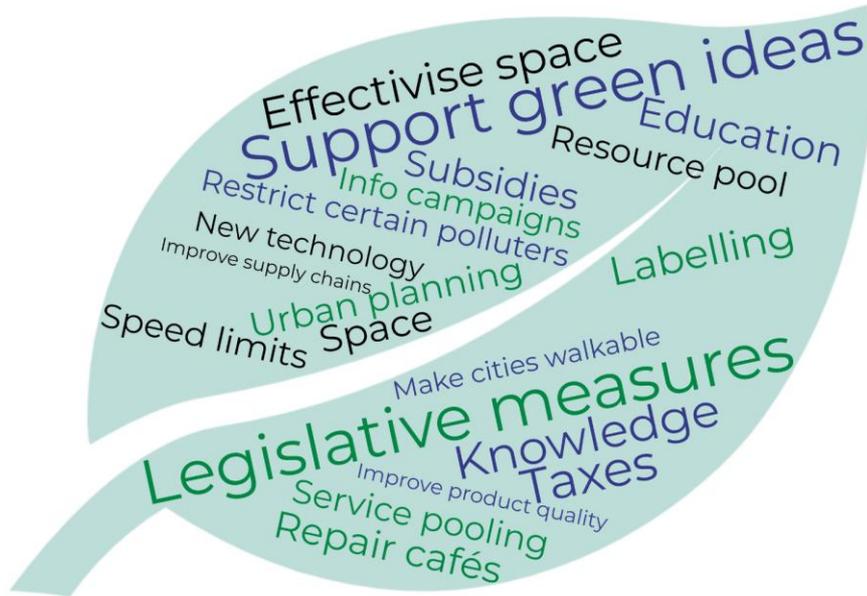


Figure 11 Outcomes of workshop 3 - Enablers



# Barriers



Figure 12 Outcomes of workshop 3 - Barriers

# Benefits



Figure 13 Outcomes of workshop 3 - Benefits



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## 3.2. Communication Strategies

During the second half of the first and last workshops, in addition to creating policy recommendations, citizens were asked to come up with different communication strategies for encouraging citizens to adopt sufficiency habits. This required citizens to think about the different obstacles, enablers, and benefits to sufficiency lifestyles that were discussed earlier in the workshops.

At the end of the **first workshop**, citizens decided upon 1-2 communication strategies by subject:

- **Transportation:**
  - A campaign to raise awareness on CO2 emissions of different transport modes (equivalent in terms of journey).
  - Communication to companies to promote the use of bicycles and other means of public transport for their employees, by enabling safe places for bicycles, scooters, bonuses for using public transport etc.
- **Food:**
  - To accompany the first policy proposal, organise a Sustainable Food Day to inform the public about more plant-based, local and seasonal food.
- **Housing:**
  - Advertisement campaigns to inform about energy renovation subsidies and financial benefits from reducing electricity consumption.
  - Community workshops and trainings for journalists on these topics.
- **Items:**
  - Advertising campaign with public personalities to promote second hand shopping.

During the last, longer, workshop, an entire part of the second day was dedicated to the communications strategies. This time, participants were asked to put themselves in the shoes of an actor of their choice (private or public) and develop a communications plan/strategy that would promote a sufficient idea or concept to the broader masses. Thus, the groups used creative methods to develop posters and catch phrases that would aim at helping citizens implement sufficiency at a larger scale, shown in figure 14. One of the main results from this was focusing on the co-benefits of sufficiency, such as sharing values across generations and working against loneliness by bringing people together in the form of repair cafés and other local initiatives. A special emphasis was placed on educating people on sufficiency from a very young age.





Figure 14 Outcomes of workshop 3 – Communication Strategies

### 3.3. Policy Recommendations

Finally, at the end of each workshop, all participants got together in the auditorium to hold a vote on the two policy recommendations from each of the four areas (Food, Transport, Housing, and Items). They then voted on which of the 2 policy recommendations they preferred or wanted to prioritize.

During the **first workshop**, citizens preferred the following:

- **Transportation:** Prohibiting flights throughout Europe for trips that take less than 2.5 hours by train.
- **Food:** Making reusable containers mandatory in supermarkets and other food distribution places.
- **Housing:** Mandatory insulation standards, solar panels on roofs, and the widespread use of recycled materials for new housing.
- **Items:** A “carbon score label” for all newly manufactured products that clearly indicates the carbon footprint of each product.

During the **second workshop**, participants voted on the following policies:

- **Transportation:** Forbid private ownership of motor vehicles. There will be administrative, normative, habit, and market adjustments or some car-dependent practices will have to disappear.
- **Food:** Improving education – promote local/national food education and cooking technology, community gardens and cooking classes to inform about food production, scarcity, waste.
- **Housing:** It was a tie between having a set percentage of public housing and implementing a tax on secondary houses (ex. holiday houses) to really disincentivize having 2 and more houses (that are empty most of the time).
- **Items:** Curtail advertisement in public spaces and ban billboards.

In the **third workshop**, participants came up with eight recommendations shown in Figure 15, which were then presented at the COP28 in Dubai.



## POLICY RECOMMENDATIONS: CITIZEN SCIENCE WORKSHOP N°3

The concept of Citizen Science in FULFILL is all about engaging citizens in the process of formulating high-quality policy recommendations that are influenced by citizens' real life experiences.

The following recommendations were developed and put to a forum vote in the most recent Citizen Science Workshop in Paris on November 23-24, 2023.



### Transportation

- Financing rail transportation for people and goods at the EU level (e.g. public coordination for night trains across EU).
- Mobility as a service with a focus to promote low carbon options (e.g. carsharing, bike system).



### Food

- Labeling and clearly showing overall carbon footprint of food products (origin chain, how/from where it was transported, list of pesticides/chemicals used). Label can be on a scale from 1-5 with colors.
- Compulsory education on food consumption, health, and waste (i.e. eating less / better quality, gardening and growing food).



### Housing

- A policy that aims at simplifying regulations (for energy efficient ways to build and renovate buildings) and compressing them into a document which would be distributed to citizens, architectural schools, businesses, etc.
- A law that promotes local cooperation that co-generates renewable energy and use energy together (prosumerism). At the EU level, but countries can choose not to implement it.



### Items

- Implement a 5 year guarantee on items (tax more for 2 year guarantee, tax less for 5 year guarantee).
- Implement a "Fair product" label A - F (already exists for energy efficiency) and ban products labelled with the lowest category for the EU market.



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Figure 15 Outcomes of workshop 3 – Policy Recommendations

When the vote was held at the end of the third workshop, participants preferred the following policy recommendations:

- **Transportation:** Financing rail transportation for people and goods at the EU level (e.g. public coordination for night trains across EU).
- **Housing:** A policy that aims at simplifying regulations (for energy efficient ways to build and renovate buildings) and compressing them into a document which would be distributed to citizens, architectural schools, businesses, etc.
- **Food:** Labelling and clearly showing overall carbon footprint of food products (origin chain, how/from where it was transported, list of pesticides/chemicals used). Label can be on a scale from 1-5 with colours.
- **Items:** Implement a 5-year guarantee on items (tax more for 2-year guarantee, tax less for 5-year guarantee).



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## 4. Citizen Engagement beyond the workshops

The FUFILL team was able to reach an even larger audience after these workshops through the website, social media, blog posts, and feedback surveys.

### 4.1. Creation of Citizen Engagement Page on Website

The creation of the page “Citizen Engagement” was meant to give citizens who participated in the workshops and anyone else in their own networks easily understandable information about the citizen science activities conducted within FULFILL. See screenshot of the webpage in Figure 16.

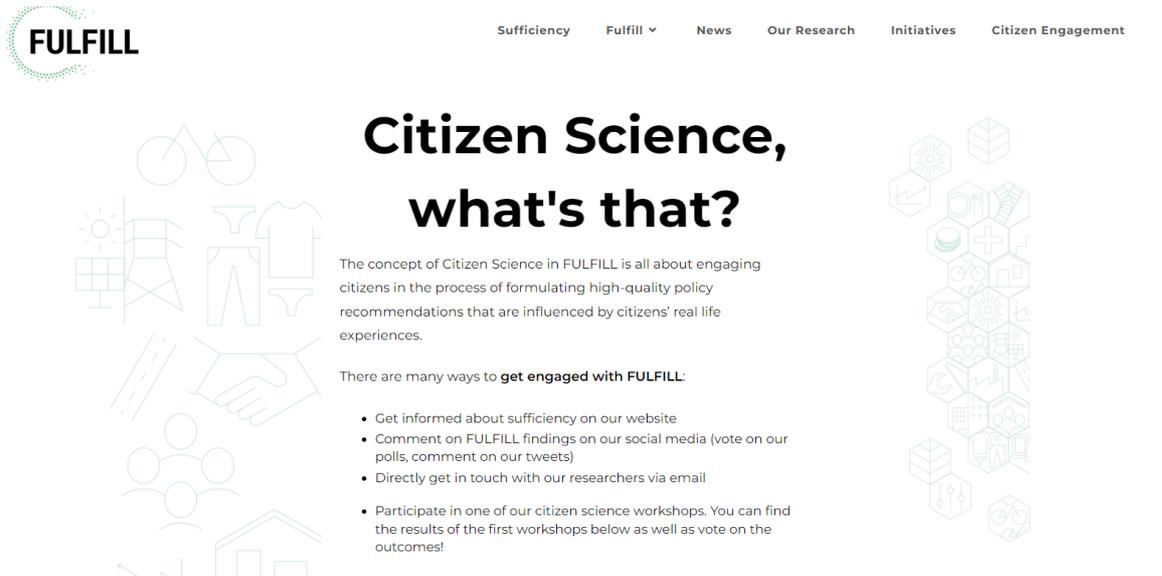


Figure 16 Website Citizen Engagement Page

In addition to giving information, the “Voting Feature” was added as a way to facilitate the voting of policy recommendations during the workshops and continue them after the workshops. The policy recommendations on the page were updated after every workshop to keep the voting of the most recent policy recommendations going.



Figure 17 Website Citizen Engagement Page - Voting

Analysis of the results of this online voting occurs monthly, as seen below in Figure 18. To give an idea, in the month of November 2023 after the last workshop, the results from this voting were the following:

- **Transportation:** Financing rail transportation for people and goods at the EU level, such as public coordination for night trains across the EU (55%)
- **Housing:** A policy that aims at simplifying regulations (for energy efficient ways to build and renovate buildings) and compressing them into a document which would be distributed to citizens, architectural schools, businesses, etc. (65%)
- **Food:** Labelling and clearly showing overall carbon footprint of food products (origin chain, how/from where it was transported, list of pesticides used) (66%)
- **Items:** Implement a 5-year guarantee on items (tax more for 2-year guarantee, tax less for 5-year guarantee). (100%)



Jul 1, 2023 - Jul 31, 2023		Filters	Search responses	10 results	Table view <a href="#">Give feedback</a>
<input type="checkbox"/>	Date	<input checked="" type="checkbox"/> Which of the following transportation policie...	<input checked="" type="checkbox"/> Which of the following food policies would...	<input checked="" type="checkbox"/> Which of the following housing policies wou...	<input checked="" type="checkbox"/> Which of the following policies related to...
<input type="checkbox"/>	16:29	Mobility as a service with a foc	Labelling and clearly showing	A law that promotes local coop	Implement a "Fair product" lab
<input type="checkbox"/>	14 Jul 2023 16:28	Financing rail transportation fc	Compulsory education on food	A policy that aims at simplifyin	Implement a "Fair product" lab
<input type="checkbox"/>	14 Jul 2023 16:28	Mobility as a service with a foc	Labelling and clearly showing	A policy that aims at simplifyin	Implement a "Fair product" lab
<input type="checkbox"/>	14 Jul 2023 16:27	Mobility as a service with a foc	Compulsory education on food	A policy that aims at simplifyin	Implement a 5 year guarantee
<input type="checkbox"/>	14 Jul 2023 16:28	Financing rail transportation fc	Labelling and clearly showing	A law that promotes local coop	Implement a "Fair product" lab
<input type="checkbox"/>	14 Jul 2023 16:22	Mobility as a service with a foc	Compulsory education on food	A policy that aims at simplifyin	Implement a "Fair product" lab

Figure 18 Voting Statistics from Website

The citizen engagement page shows the results of the conducted citizen science workshops and invites citizens to engage with these results. It also provides additional resources for citizens to get active and provides contact details to directly connect with JDI, who can redistribute citizens' demands to other consortium members if necessary.

## Workshop Results

Citizen Science Workshop n°1 : Held on February 10th, 2023 in Paris



Figure 19 Website Citizen Engagement Page – Workshop Results



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## 4.2. Twitter polls and social media use

In addition to the in-person voting during the workshops and on the website, we took the votes from each of the three workshops and brought them to the Twitter polls, where a wider audience could be reached. Participants of the workshops were asked to share the poll with their networks. Below is an example of the first Twitter poll we conducted, which was open for one week and through which 22 people voted. The results were the following:

- **Transportation:** Prohibiting flights throughout Europe for trips that take less than 2.5 hours by train (70% of voters).
- **Food:** Making reusable containers mandatory in supermarkets and other food distribution places (54.5% of voters).
- **Housing:** Mandatory insulation standards, solar panels on roofs, and the widespread use of recycled materials for new housing (59.1% of voters).
- **Items:** A “carbon score label” for all newly manufactured products that clearly indicates the carbon footprint of each product (59.1% of voters).



In addition to the actual vote, the thread opened up the option for participants to leave comments and ideas about different policy recommendations in this field. The entire thread received over 1000 impressions on Twitter, which indicates the width of the audience that it reached.

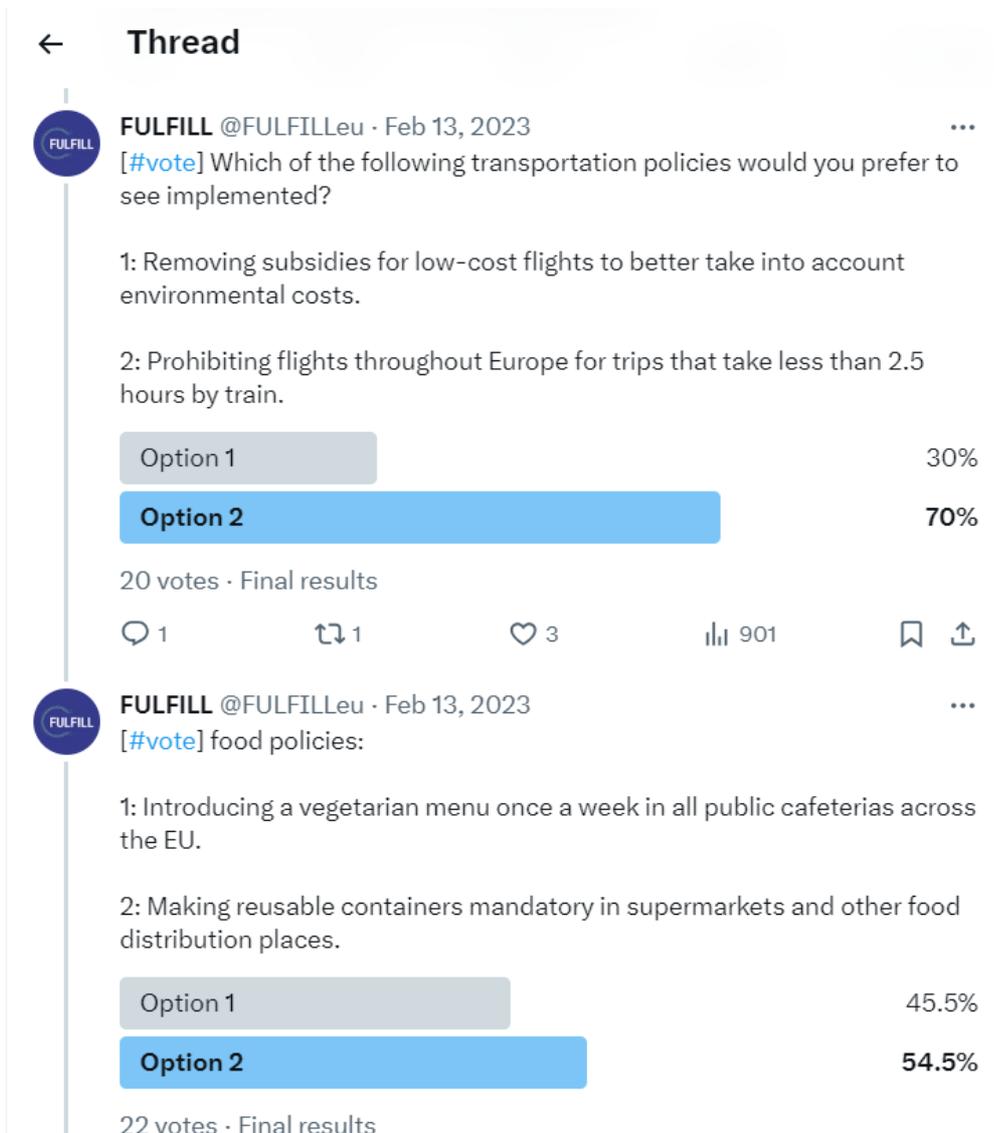


Figure 20 Twitter Voting Poll – Workshop 1



Additionally, both Twitter and LinkedIn were used as a way to inform and engage citizens in the participatory process by sharing photos and ideas from the workshops. Citizens sometimes commented and shared their experiences, as seen below.

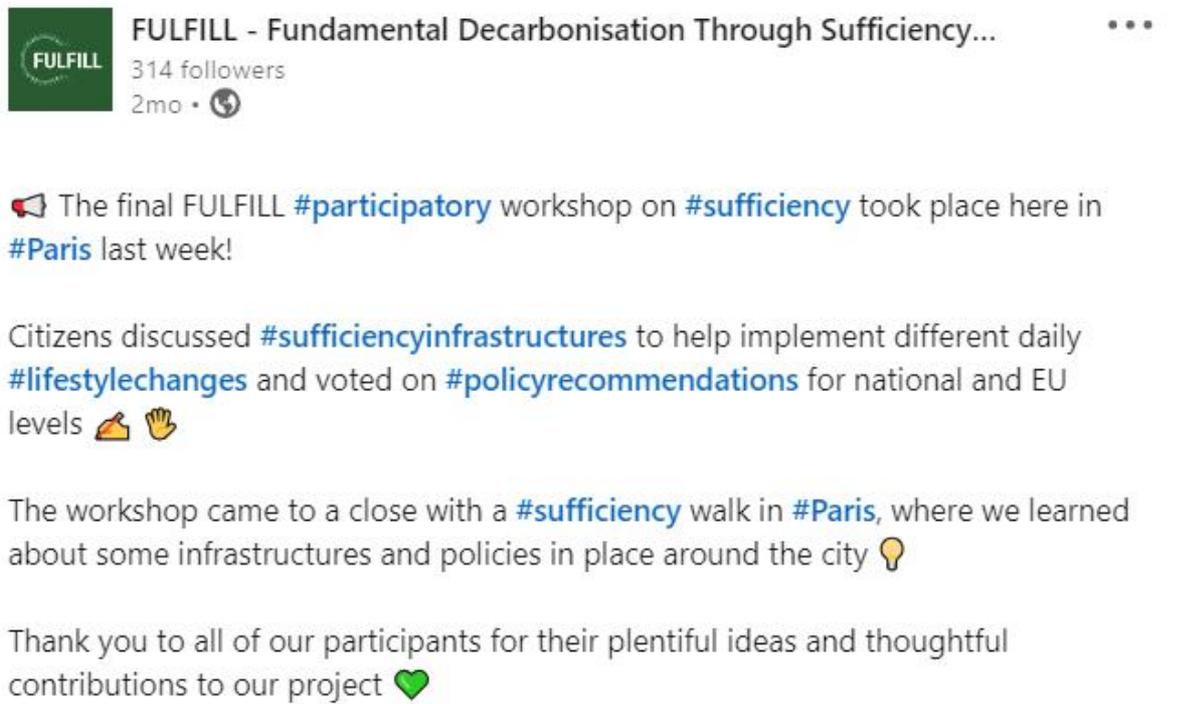


Figure 21 LinkedIn Post – Workshop 3



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Comment left on this post:

Thank you all. It was a great opportunity to extend my european contact network among people very concious about how important is make from citizens the starting point for a sustainable lifestyle.

Like ·   4 | Reply

*Figure 22 LinkedIn Participant Feedback – Workshop 3*



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### 4.3. Blog Posts and co-writing

After each workshop, a blog post was uploaded to the FULFILL website announcing the occurrence of the event and describing some of the results.

#### Citizen Science Workshop n°2 in Barcelona



Fulfill - August 2, 2023 - Uncategorized

FULFILL recently held its **second citizen science workshop** on July 14th in Barcelona, Spain at the [Institute of Environmental Science and Technology, school of the Universitat Autònoma de Barcelona!](#)

The workshop came in collaboration with the *LIPHE4 MuSIASEM Summer School on energy transitions: Diagnosing wishful thinking and identifying critical vulnerabilities.*

We had our 20 participants circulate the room in a world café style to respond to the following questions for the topics of **Transport, Food, Housing,** and **Items:**

*Figure 23 Blog Post – Workshop 2*



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After the first workshop, the four participants from the *Academie Notre Europe* who acted as participant-moderators throughout both the world café and the policy recommendation/communication strategies parts of the workshop (and who helped prepare fact sheets about the topics of Transportation, Food, Housing, and Items), each wrote a separate blog post that was later published on the website. These individual blog post detailed the intricacies of the world café discussions as well as the process behind deciding on policy recommendations for each group.

This process of co-writing with citizens allowed the research to achieve another level of participation; not only were the moderators citizens who participated themselves in the workshop, but they also filtered in the comments of their peers who were not moderating, which made way for the un-edited voices and opinions of those directly participating in the workshop. These four blog posts are published directly on the website.

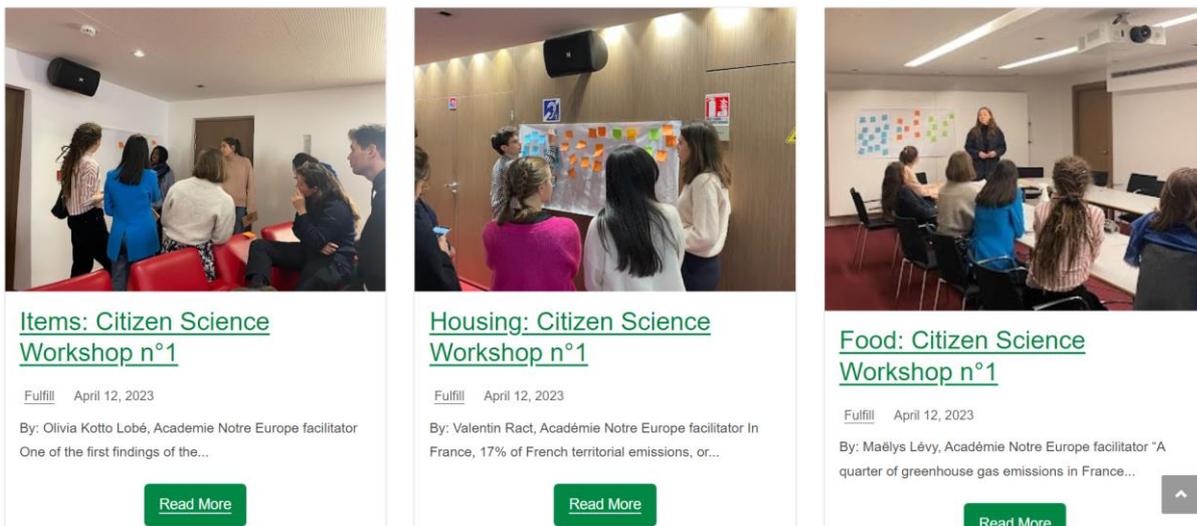


Figure 24 Co-written Blog Posts – Workshop 1

## 4.4. Feedback from Participants After the Workshops

After the workshops, we established a direct line of communication with all participants via email. We even created a document where participants could connect with others and leave anonymous feedback about the workshop to help us get an idea of what they enjoyed and what could be improved. This is a great way to encourage citizens to have their voices heard even after the workshop.

### Citizen Feedback From Third Workshop

*“In an open and constructive spirit, we worked together and achieved inspiring results – without having met before. This wonderful experience was also possible through the excellent facilitation of the JDI team. Thank you all and all the best in your personal and professional life!”*

*“It was a lovely experience, constructive and inspiring! Thanks again for the skillful facilitation. Hopefully our recommendations will help policy makers in Europe. I wish there were more initiatives of this sort that include citizens in shaping the changes they want to see in the world.”*

*“It was great experience to attend this workshop. Everyone was very friendly despite that we were all strangers in the beginning*

Additionally, after the third, longer workshop in Paris, a follow-up email with a survey was sent out to all participants as another way to keep in touch and give a space for them to share their ideas, as well as to get more thorough research and seeing how effective the workshop was in informing citizens about sufficiency and encouraging them to implement sufficiency habits in their lives.

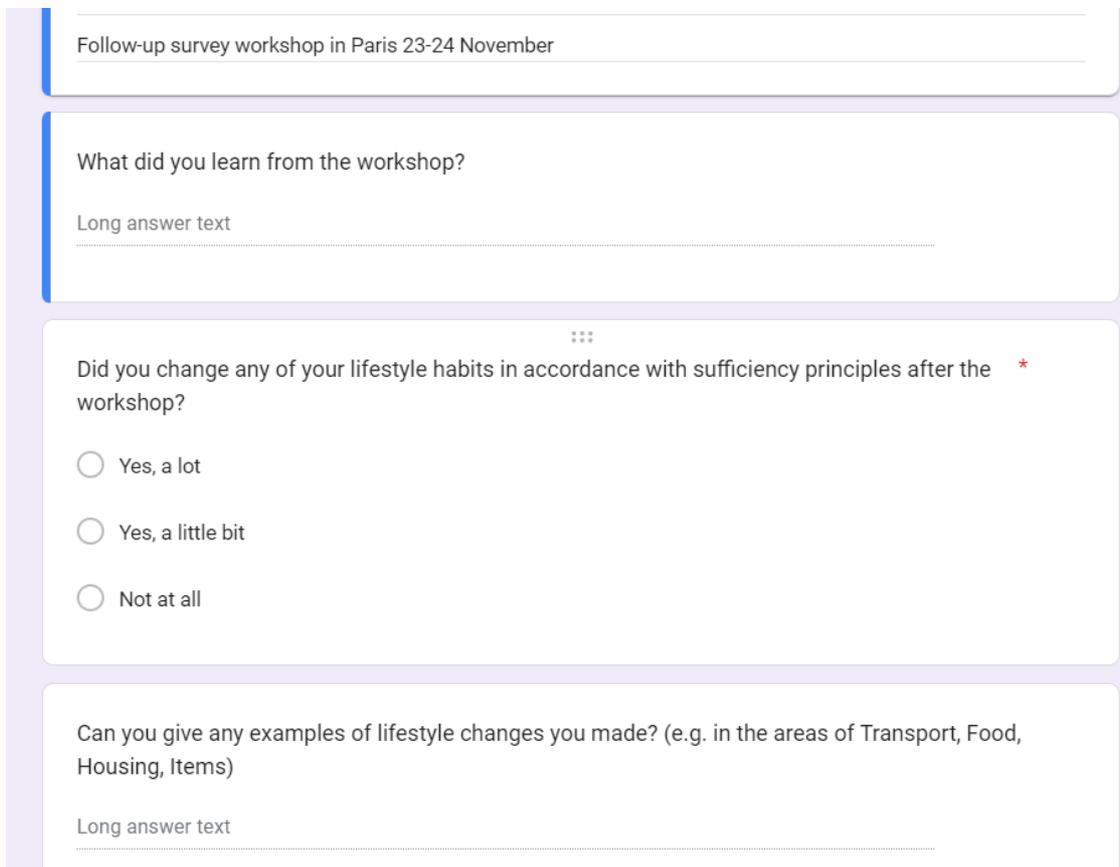


Figure 25 Citizen Survey – After Workshop 3



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Below are some of the survey responses to the question, “can you give any examples of lifestyle changes you made? (e.g. in the areas of transportation, food, housing, items)”.

- *“Tracking own food consumption per category, establishing principles for food consumption: self-grown or self-prepared, saved (from wastage or at the field), regional, bio, vegetarian. Minimum of 2 of these principles per meal.”*
- *“I started to use more public transport, also tried vegan/vegetarian diet in January.”*
- *“I have started to receive a food box with vegan and organic food every 3 weeks. I get inspiration to cook a little different.”*
- *“Started to eat healthier and I am taking many more walks than I used to”*
- *“Cycling”*
- *“It gave me more strength to convince other 6 flats in my house to sort biological waste and to organize sorting containers for that.”*
- *“I eat meat only once per week, I use public transportation to go to work.”*



## 5. Conclusion

In conclusion, the workshops conducted as part of Task 7.1 within the FULFILL project have proven to be successful in engaging citizens and informing them about sufficiency principles, action and policy. Feedback from workshop participants has been overwhelmingly positive, with citizens expressing enjoyment in engaging with sufficiency-related questions and discussing potential futures with their peers. The two-day workshops, in particular, facilitated meaningful interactions among participants from diverse European countries, allowing them to learn from each other's experiences and different countries' specific contexts. Discovering that policies or regulations they thought impossible to implement are already reality in another European country proved a powerful catalyst to broaden participants' perspectives on what is achievable in the energy transition.

The results of these workshops align with previous research, indicating citizens' readiness for sufficiency policies.<sup>14</sup> The willingness of citizens to accept binding measures, bans and financial instruments that discourage high-carbon emitting lifestyles became evident. For example, citizens voted for a ban on short haul flights and disincentives on luxury goods such as second homes as their favourite policy recommendations. This suggests that even sufficiency policies which seem restrictive can receive high levels of acceptance by citizens if they are perceived to be socially just, which is in line with previous research.<sup>15</sup>

Besides the call for more restrictions of carbon-intensive behaviours, there is a clear desire among citizens for more transparent labelling in the food and consumer goods sector to enable better decision making. Citizens throughout all workshops discussed carbon scores, ethical and environmental labels as possibilities to enable more responsible consumer choices. The results of the workshops will feed into the working paper and policy brief conducted in WP7 of the FULFILL project and influence the policy recommendations given by the project.

Overall, the workshops have not only informed citizens about sufficiency principles but have also fostered mutual learning and established a sense of hope among participants particularly among citizens from countries where sufficiency is not yet broadly discussed. It is evident that when given the opportunity to voice their opinions, citizens are eager to participate in the energy transition and share their perspectives with others. The diverse array of positive impacts associated with sufficiency, such as improved health, more appealing urban environments, and addressing loneliness, make it an attractive topic for citizens. Communicating about these positive effects rather than focusing on environmental messages seems to resonate with citizens, which is in line with previous research of the FULFILL project.<sup>16</sup> Sufficiency discussions benefit from people with diverse backgrounds bringing in their expertise and the potential personal benefits are closer to people's realities than in more technical energy subjects. These outcomes underscore the importance of inclusive, participatory approaches in advancing the energy transition and shaping effective policy interventions that are met with higher levels of approval by citizens. They further emphasize the potential of sufficiency as an especially fruitful topic for citizen engagement.

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<sup>14</sup> Lage, Jonas, Johannes Thema, Carina Zell-Ziegler, Benjamin Best, Luisa Cordroch, and Frauke Wiese. "Citizens call for sufficiency and regulation — A comparison of European citizen assemblies and National Energy and Climate Plans." *Energy Policy* 2023 (2023): 114826. <https://doi.org/10.1016/j.enpol.2022.114826>.

<sup>15</sup> Dechezleprêtre, Antoine, et al. "Fighting climate change: International attitudes toward climate policies." Documents de travail du Département des Affaires économiques de l'OCDE, no. 1714, Éditions OCDE, Paris, 2022. <https://doi.org/10.1787/3406f29a-en>.

<sup>16</sup> Breucker, Fiona and Defard, Camille. „Report on the comparative analysis of sufficiency policies”. FULFILL Deliverable D5.2.” Accessed February 08<sup>th</sup> 2024. <https://fulfill-sufficiency.eu/wp-content/uploads/2023/10/D5.2-Report-on-the-comparative-analysis-of-sufficiency-policies-0923-1.pdf>



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## Annex

### 1. Agenda of Citizen Science Workshop 1

Time	Programme
13h15-13h35 (20 min)	<b>Introduction:</b> <ul style="list-style-type: none"> <li>• presentation of FULFILL and sufficiency</li> <li>• purpose of session (citizen science, participation in creation of policy proposals)</li> </ul> → why our behaviour matters <ul style="list-style-type: none"> <li>• present carbon footprint results of participants (participants have filled out before the meeting: <a href="https://nosgestesclimat.fr/">https://nosgestesclimat.fr/</a>) and show comparison with average in France, Europe, WORLD</li> </ul>
13h35-13h40 (5min)	<b>Instructions for the session</b> <ul style="list-style-type: none"> <li>• split the group in 4</li> <li>• explain three questions</li> <li>• turn every 10 minutes (“alarm”)</li> <li>• World Café style: animateurs stay and explain what has been discussed</li> </ul>
13h40-14h25 (45 min)	<b>Discussion of the 4 sections</b> (Food, Travel, Housing and Stuff) in more detail. <b>Guiding Questions:</b> <ol style="list-style-type: none"> <li>1. What can I do to reduce my footprint in this sector? (sufficiency habits)</li> <li>2. What’s holding me back? (barriers: e.g. lack of knowledge, structures, money, incentives)</li> <li>3. What could help me change? (enablers: e.g. infrastructure, community etc.: Ideal world scenario)</li> </ol> <p>One topic per piece of banner paper in a World Café format. Participants switch (between the 2 groups in the auditorium and the 2 groups in each of the 2 separate rooms) after 10 minutes to the next topic, moderator stays and explains what has been discussed so far.</p>
14:25-14:35 (10 min)	<b>Instructions for the session</b> <ul style="list-style-type: none"> <li>• participants return to the topic they last discussed</li> <li>• they split in 2 subgroups</li> <li>• 2 slides on different policy levels and soft vs. hard measures</li> <li>• explain forum</li> </ul>
14h35-14h55 (20 min)	<b>Groupwork:</b> <ul style="list-style-type: none"> <li>• 4 groups (1 per topic)</li> <li>• 2 subgroups per topic               <ul style="list-style-type: none"> <li>○ develop policy proposals (mark top 2)</li> <li>○ develop communication strategies (mark top 2)</li> </ul> </li> </ul>
14h55-15h45 (50 min)	<b>Forum:</b> vote on policy proposals and comms strategies, discussing results (we give the option of 2 policy proposals and 2 comms strategies per topic, they debate, and then they vote on which one they prefer)



<b>15h45- 16h00</b>  <b>(15 min)</b>	<b>Closing words</b>
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## 2. Agenda of Citizen Science Workshop 2

Time	Programme
14:30-14:45	Introduction: FULFILL and energy sufficiency
14:45-14:50	Instructions for the session
14:50-15:10	<p><b>Discussion of the 4 sections</b> (Food, Travel, Housing and Items)</p> <p><b>Guiding Questions:</b></p> <ol style="list-style-type: none"> <li>1. Sufficiency habits and social practices</li> <li>2. Barriers (What's holding me back?) (e.g. lack of knowledge, structures, money, incentives)</li> <li>3. What policies and infrastructures are needed to overcome these barriers?</li> <li>4. Benefits</li> </ol>
15:10-15:15	Instructions for the session
15:15-15:40	<b>Groupwork:</b> 4 groups (one for each section) to develop 2 policy recommendations
15:40-16:20	<p><b>Forum:</b> the chosen moderator must present the 2 ideas (one for each section).</p> <p>Vote: "among these 2 proposals, which one do you think would be most feasible and useful in the pursuit of energy sufficiency?" (on the Citizen Engagement page of the website)</p>
16:20-16:30	Closing words

### 3. Agenda of Citizen Science Workshop 3



## Agenda: Sufficiency Citizen Science Workshop Thursday 23 - Friday 24, November 2023

Maison de l'Europe, 29 Av. de Villiers, 75017 Paris, France

#### Thursday

13.00 – 14.00	Welcome lunch
14.00 – 14.45	Kick-off
14.45 - 15.45	Introduction to FULFILL and sufficiency
15.45 - 16.00	Coffee break
16.00 - 17.30	World café discussion
17.30 - 18.30	Policy workshop
18.30	Leaving for Dinner together ( <i>Potager de Charlotte</i> )

#### Friday

9.00 - 10.30	Workshop on policy recommendations
10.30 - 10.45	Coffee break
10.45 - 11.45	Communication workshop
11.45 - 12.45	Group presentations
12.45 - 13.45	Lunch



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13.45 - 14.30	Forum vote and Closing words
14.30 - 16.00	Sufficiency walk in Paris



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