PSLifestyle

Designing the PSL tool - 103

Specification of the PSLifestyle application and dataset – v.3

Authors: Arlind Xhelili & Alexandra Kessler

Both at the Collaborating Centre on Sustainable Consumption and Production (CSCP)

pslifestyle.eu

Deliverable Information

Deliverable No.	D1.8
Deliverable Title	Specification of the PSLifestyle application and dataset – v.3
Work Package No.	1
Work Package Title	Citizen science labs
Lead Organisation	Collaborating Centre on Sustainable Consumption and Production (CSCP)
Main author(s)	Arlind Xhelili, Alexandra Kessler
Contributors	Finnish Innovation Fund Sitra (Sitra), Collaborating Centre on Sustainable Production and Consumption (CSCP), Let's Do It Foundation (LDIF), The Green Tiger Foundation (GTF), Athena Research and Innovation Center (ATHENA-RIC), Consumers' Association "The Quality of Life" (EKPIZO), Sustainable Development Foundation (SUSDEF), greenApes (GAPES), The Portuguese Association for Consumer Protection (DECO), Circular Change (CCICE), Municipality of Ljubljana (MoL), Zeytince Ekolojik Yasamı Destekleme Dernegi (ZEYDD).
Reviewers	Dushyant Manchandia (Sitra)
Nature	Report
Dissemination Level	Public
Deliverable Date	26/06/2023
Draft Number	
Version history	
Version Number	

Abstract

To **support citizens in measuring and reducing their ecological impact**, the PSLifestyle project has been working on an easy-to-use and solution-oriented tool. The **PSL tool**, which will be introduced to the public in late summer 2023, is in the **final development rounds** and will **enable citizens across Europe to take up more sustainable lifestyles through personalised suggestions for everyday actions**.

The **development of the PSL tool** has taken place **collaboratively with European citizens** (the tool's target audience) through **citizen science labs (CSLs) in 8 European countries**: Estonia, Finland, Greece, Germany, Italy, Slovenia and Turkey. In the **last round of the CSLs meetings**, participants had the chance to **get to know and work with the latest version of the PSL tool** as well as create **plans on how to make their lifestyles more sustainable**. Moreover, CSL participants had the chance to **exchange on barriers and opportunities towards more sustainable lifestyle patterns**, an exchange that was driven by a strong local perspective, boiled down to the day-to-day reality of citizens and their local/regional contexts. One of the key goals of the PSL tool is to **achieve a supportive and engaging environment for its users**. Therefore, in addition to exchanges on the content side, participants also discussed about their **impressions on some of the PSL tool's features that allow for such an environment**.

This **report provides a summary of the last round of the PSLifestyle CSLs meetings** (i.e., in this report referred to as meeting 5 and 6) and the **exchanges with European citizens on the afore-mentioned topics**.

Disclaimer

The opinions in this report reflect the opinion of the authors and not the opinions of the European Commission. The European Union is not liable for any use that may be made of the information contained in this document.

The commercial use of any information contained in this document may require a license from the owner of that information.

All PSLifestyle consortium members are also committed to publish accurate and up to date information and take the greatest care to do so. However, the PSLifestyle consortium members cannot accept liability for any inaccuracies or omissions nor do they accept liability for any direct, indirect, special, consequential or other losses or damages of any kind arising out of the use of this information.

TABLE OF CONTENTS

Introduction

The **urgency to transition towards more sustainable and carbon neutral societies has inspired a number of initiatives** that target European citizens directly or indirectly, and are of various formats and driven by different decision makers. Subsequently, there has been an **increased willingness amongst consumers to shift towards sustainable consumption and lifestyle patterns**, but barriers towards those remain profound. While there is **more awareness on the topic** and matching interest on the citizens side, **evidence shows** that we're **still lagging behind** when it comes to **broader shift towards lifestyles within planetary boundaries**, across all key living areas such as housing, transport, food and general consumption.

This can be **attributed to a number of factors** from complex information environments, conflicting sustainability narratives, prevailing consumerist and wasteful cultures as well as current context / infrastructural and market (vendor) lock-ins. At **the individual level,** one can record complex behavioural patterns with multi-fold factors determining our lifestyle patterns. In addition, **ambitious targets and/or products / services** brought forward by key decision makers in the attempt to guide people's behaviours towards more sustainable ones mean well, but **do not always reflect the realities of (some) European social / consumer groups**. Thus, some of the goodwill and energy of people and these actors run rather in parallel than in congruence.

Accordingly, finding out what **information, needs, wants, expectations European citizens have** when it comes to sustainable consumption and lifestyle patterns and **examining the dynamic relationship between personal factors** determining our living patterns **and the context** in which they are made and reinforce each other for a positive change, **is especially important**. Furthermore, the **proper and effective communication of sustainability** in a clear and crisp manner and by **using frameworks and language that is closer to consumers' actual values and realities, needs and/or wishes** is equally important for the successful integration of sustainable practices in consumers' everyday food consumption patterns. **This is exactly what the PSLifestyle project focuses on**.

The PSLifestyle project

The European Union Horizon funded project 'Co-creating positive and sustainable lifestyle tool with and for European citizens – **PSLifestyle**' aims to help **close the gap** between climate awareness and individual action, and to **increase citizen participation** in sustainability topics. It does this by **engaging citizens through a digital tool, called the PSL tool (Box 1),** to collect, monitor and analyse their environment and consumption data as well as co-research, co-develop, and uptake everyday life solutions for climate change.

The project will build a data-driven movement with and for the citizens to enable more sustainable lifestyles across Europe. The ambition of the project is to **engage a total of 4-four million European citizens** – with a particular focus on 8-eight European countries: Estonia, Finland, Greece, Germany, Italy, Portugal, Slovenia and Turkey in data collection and data sharing through the **PSL tool**.

The PSL tool is based on the consumption-based **carbon footprint calculator 'Lifestyle Test'**, set up by the project partner Sitra in 2017. In the PSLifestyle project, an improved version of the digital tool is further developed and contextualized to align with the citizens' local realities in the pilot regions. This will be done by co-creating a **localized version of the tool** through **citizen science labs (CSLs)** to understand the local **capabilities, opportunities and motivations** of the citizens in engaging in more sustainable lifestyles. For more information on the PSLifestyle CSLs please see **Box 2**. The PSLifestyle project will also work with other societal catalysts, including policymakers, businesses, civil society organisations (CSOs), and academia to design solutions based on citizen data. After the co-development process in CSLs, the project will focus on the **wider deployment of the service and on expansion** into other European countries.

What is this report about?

The report provides a **summary of the last round of the PSLifestyle CSL meetings** (i.e., in this report referred to as meeting 5 and 6) where together with European citizens we c**o-created and discussed improvement points for the PSL tool** to make it as relevant and engaging for its target audience (i.e., European consumers) both with regards **to functions / features as well as content**. Related to the latter, in this round of meetings, the focus was placed on **scoping and exchanging on barriers** that could inhibit and **opportunities** that could accelerate the **implementation of everyday actions for more sustainable living**. The **base and starting point** for the exchanges were the **conditions and realities in which the CSL participants are operating within**.

Two rounds of similar blocks of meetings have taken place throughout 2022, the results of which have been summarised in similar deliverables as seen in the following: Designing the PSL tool 101 & Designing the PSL tool 102. The overarching base for the CSL meetings is the PSLifestyle CSLs Governance Framework which outlines the overarching vision as well as procedural details of the CSLs journey.

Box 1: The PSL tool and its user journey

User's interaction with the **PSL Tool**

The PSL tool is based on the carbon footprint calculator 'Lifestyle test' set up by the Finnish Innovation Fund Sitra in 2017: https://lifestyletest.sitra.fi/. The PSL tool will be available as a **web version** and in **the pilot countries' national languages**.

Users' interaction will start with a **measurement of their lifestyle carbon footprint** through a series of questions pertaining to different living areas i.e., housing, mobility, food and general consumption.

As a follow up, and based on their results, users will be able to **select and commit to a variety of practical actions** (i.e., Smart Everyday Actions), summarised in a **lifestyle plan** that could support them to improve their carbon footprint. Through the digital tool, users will be able to **keep track of their progress** and highlight the encountered **barriers and drivers** when implementing their lifestyle plans. The PSLifestyle digital tool will rely on **behavioural tools** to increase the likelihood of the **effective implementation** of the **lifestyle plans** as well as **improve users' experience** with the tool.

The data generated by the users will be unified into a dataset which be analysed and aggregated by the consortium partners before becoming a **subject of a dialogue and conversation** with the other **key project stakeholders** as a means to create **products, services and other actions plans** that are based on **citizens' realities.**
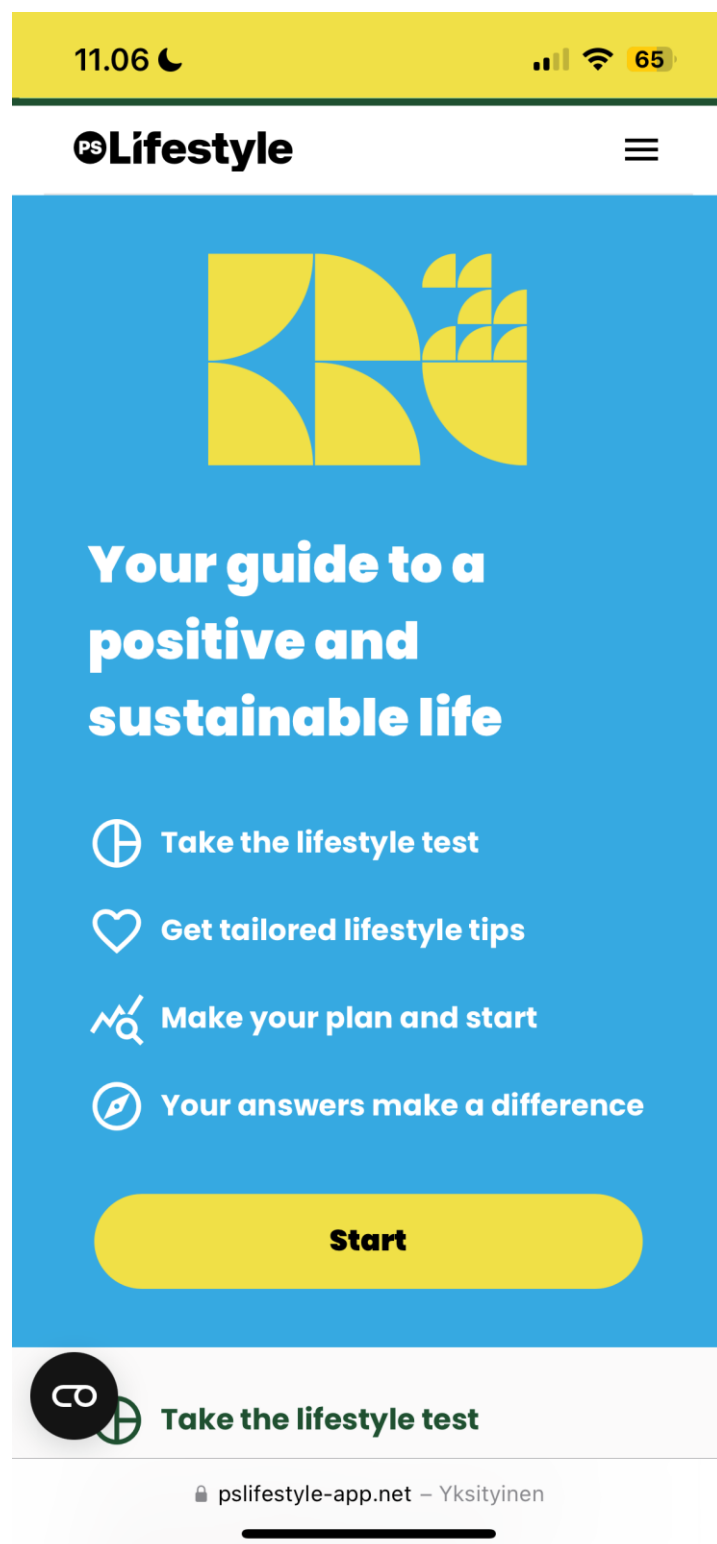
Box 2: The PSLifestyle Citizen Science Labs in a nutshell

The PSLifestyle Citizen Science Labs (CSLs)

The PSLifestyle CSLs are a combination of **two participatory governance approaches**, namely, **living labs and citizen science**, that aim at ensuring and **enabling citizens' involvement** in shaping our **socio-economic and political frameworks** through **co-creation and data collection / provision**. Such methodological approach helps to **increase the transparency, credibility and legitimacy of solutions** that might impact citizens' lives.

The PSLifestyle CSLs have brought together European citizens **to co-create and shape visions of a good life** within environmental boundaries as well as **design solutions for making those visions a reality**. Throughout six meetings together, together with members of their community / city, citizens participating in the CSLs will have the opportunity to:

- **collect and provide information** through speaking and exchanging about challenges they face in their neighbourhoods/cities/regions and for more sustainable living throughout 4 areas such as food, transport, housing and general consumption;

- **co-design solutions and everyday actions** that hold potential for overcoming those challenges and increase our share of sustainable living;

- **exchange on barriers** that could inhibit the uptake of those solutions **as well as on opportunities** that could accelerate their wider roll out.

The **output of the exchanges** with the citizens with **directly feed into the content and creation and localisation of the PSL tool.** Besides co-defining and localising this content, the participants of the CSLs have been **engaged to co-create the functionalities of the PSL tool also**. This approach will ensure the tool reflects the needs and expectations of its users and as such increase the chances of its broad and continuous usage.

The CSLs Governance Framework provides a more detailed overview of the project's citizen science labs.

Meeting 5

Procedural information in a nutshell

The CSLs meeting 5 had a number of goals which are listed below:

1) provide lab participants with an **update of the changes that have been applied to the PSL tool** as a result of the previous CSL meetings and **receive** their **impressions on those**;
2) **present** the updates and rationale behind the **skip function**[1] and get their **more detailed feedback on it**;
3) **introduce the 'My Profile' feature**, a form of a motivational profile with is presented to the PSL tool user once they complete the lifestyle test and **receive participants impressions / feedback** on it and together with lab participants **further contextualise the content of the various profiles and align those with the local realities**; and
4) **create plans for more sustainable living** and invite participants to implement the plans and reflect on the barriers and opportunities towards more sustainable living.

Conscious that **following each of these goals would have increased the length of the meetings** which would then have **resulted in overwhelming the participants**, it was decided to **prioritise the outcomes and goals**. The prioritisation was done mostly **by considering where feedback from citizens was absolutely pivotal** for the development of the PSL tool and generating insights about the local realities of the citizens across the 8 project countries. As a result, it was decided that **outcomes 1, 2 and 4 would be the ones for which the generation of results would be important**, while **outcome 3 was included as an optional one**. As such outcome 3 was not pursued in Finland, Greece and Germany. In addition, outcome 4 was more of a procedural one, setting the basis for the exchange with participants on the barriers and opportunities to more sustainable living – a key topic of meeting 6, hence, in this session we did not produce content which could have been reported in this report.

Table 1 provides a quick overview of the locations of the last round of the CSLs meeting and the number of participants.

---

[1] Skip function is a feature of the PSL tool enabling a user to indicate why one would not want to undertake a certain action. For a more detailed overview of the skip function, please have a look at its respective section below.

Table 1: Key procedural information - CSLs meeting 5 & 6

Country	City	Participations
Estonia	Tallinn, Pärnu	86
Finland	Jyväskylä, Tampere, Helsinki	116
Germany	Wuppertal, Solingen	73
Italy	Parma, Firenze	30
Portugal	Lisbon	69
Slovenia	Ljubljana, Online	71
Greece	Xylokastro, Patras	82
Turkey	Izmir	80

Results

Participants impressions on the PSL tool

With regards to **participants impressions on the PSL tool**, following its last round of developments, participants were asked to share their feedback on features / functions they appreciate, find confusing and/or should be further improved and/or missing and potentially should be added. The results of this exchange are summarized below.

Appreciated / positive elements

Overall, the **PSL tool and the changes that have been adopted were well received by the lab participants**, **especially** those that have been **returning from one CSL meeting to the other**.

Participants across all countries generally **appreciated the idea of or the way how the PSL tool works**, namely, the possibility to calculate one's carbon footprint across different living areas as well as receive hints and tips (i.e., smart everyday actions) on how to reduce that said footprint. Majority of participants indicated the **level of information and detail** across the different tool sections and sub-segments **was at a very good level**.

In addition, participants appreciated the **possibility to compare their carbon footprint** with that of their peers in different countries. Moreover, in all countries, participants shared positive feedback towards the **ease of use of the PSL tool** across its different sections as well as its **visual looks and feel**, and especially the **design elements of their lifestyle test result.**

In Estonia and Finland, the **possibility to use the PSL tool without registering** was considered a positive element.

Across all countries, majority of participants were **enthusiastic to share and/or promote the PSL tool with family, friends and colleagues.**
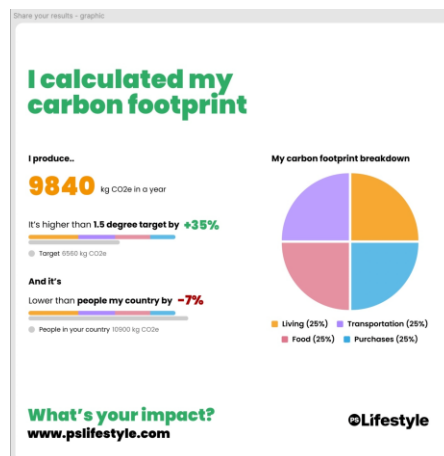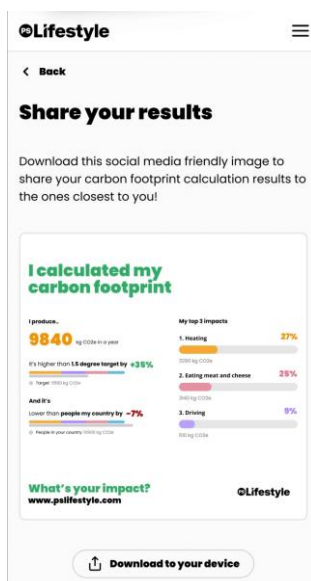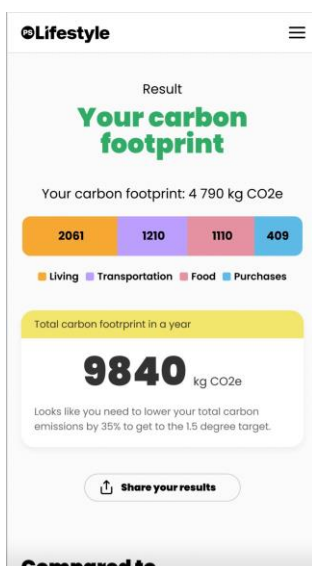
Confusing and elements that should be further improved

Despite the general positive impressions to the PSL tool and the new changes, participants still had some more feedback on what could further be improved in the PSL tool to increase the satisfaction of the user experience. An **important observation**, which relates to the vision of the PSL tool also, was a comment made by the **participants in Portugal** who **found the PSL tool good for temporal use, but not for long-term engagement**.

On a macro level, Slovenian participants thought the **name of the tool was not very reflective of its purpose** and there was still some **unclarity on whether the PSL tool is at the individual and/or household level**. While as participants in Germany and Turkey would have appreciated at the beginning a **more detailed overview of what the user journey will look like**. In Italy, participants highlighted the need for a **more crystallised cookie policy**.

Across all countries, participants pointed out the 1). the rule set behind the lifestyle test and then suggested actions e.g., a vegetarian user receiving recommendations to switch towards more vegetarian diets and 2). the calculation of the carbon footprint across the different actions and its impact on the user's overall performance. With regards to the calculation of the carbon footprint, participants in Germany and Italy pointed out that the **positive impact of the actions that are already being implemented by citizens is not taken into account in their overall performance**.

In addition, a number of participants in Estonia, Finland and Germany thought the **PSL tool** (with its questions and action recommendations) **is not friendly to some citizen / consumer groups** such as 1). younger generations (i.e., pupils, students) due to their dependency on their legal guardians for a good share of their lifestyle patterns and peculiar financial situation; and 2). inhabitants of rural areas, especially in the context of transport. In both cases, there is a **reduction of agency to undertake certain living patterns due to contextual conditions**. The question of agency was also brought in Germany and Finland countries with regards to the housing area especially in those cases where users do not own a property, hence, being rather limited to its modification to make it more sustainable.

While appreciating the level of information and detail, in all countries besides Germany, participants shared as feedback the **need for more questions and/or detail across the different sections, including the response options**. In Greece, Portugal and Germany, it was indicated that the PSL tool could benefit from **further contextualisation and alignment of the questions and actions with the local conditions and people's realities**. Across all countries, **further editorial changes** were shared, despite this not being the focus of the meeting. A similar exercise was conducted in meeting 3 and 4, please see the underlined respective report that summarises the results.
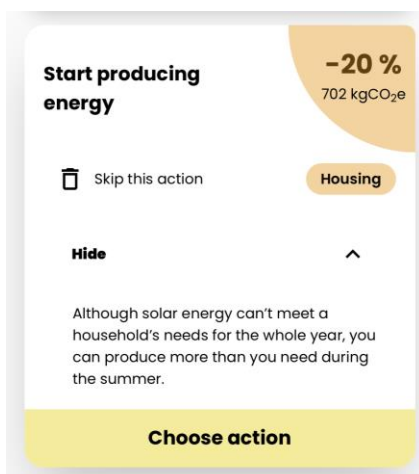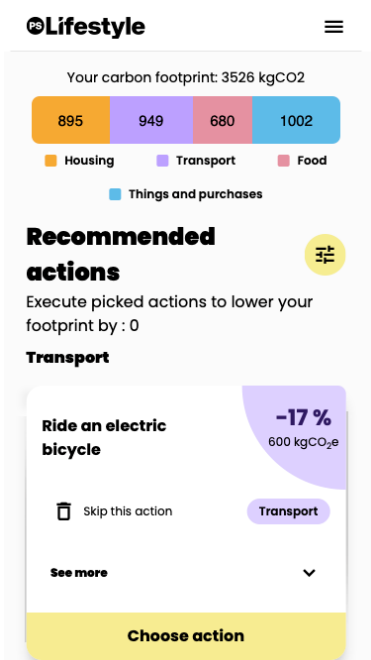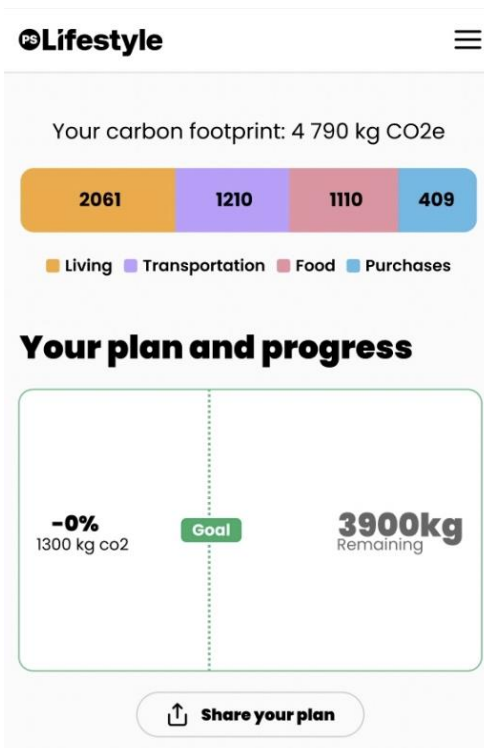
In Italy, Finland, Slovenia, the participants found the feature of **skipping an action** confusing, including the **difference between skipping and removing an action**. This has been summarised in skip function section below.

Across different countries, participants shared their impressions on **different features that could be improved**. For example, in Estonia participants did **not see the need of the interim pages between the living areas** at the lifestyle test stage; in Estonia, Greece, Italy and Turkey the error with the **back and next buttons** was highlighted as well as at points **their lack of prominence on the screen** (predominantly in Turkey and Slovenia); in Italy and Germany the **idea behind the filters of the PSL tool was not really understood**.

An interesting observation was the comment of Estonian participants who indicated that potentially the **results of their lifestyle test might be embarrassing** and as such this could act as a **barrier to sharing the PSL tool**. While as in Slovenia, some participants indicated that a **reluctance to promote the PSL tool due to its goal not aligning with their life situations and/or ideologies.**

Features that could be added

Participants feedback on the missing elements and/or those that can be improved is already a good basis to find out what else should be introduced into the PSL tool. Besides those, participants had some more **practical suggestions** on what could be introduced into the PSL tool to **make the user journey even easier as well as enjoyable**. For example, in Slovenia, Turkey, Germany, Estonia and Italy among the other countries, it was suggested to **add gamification elements** such as fun characters, videos, illustrations and similar to entice engagement with the PSL tool. In addition, participants of these countries thought **behavioural tools** such as reminders, milestones, challenges, competitions (within and across

countries) would keep them incentivised to complete the actions and/or come back and use the PSL tool. In Estonia participants thought it could especially be helpful if a **sense of community** is built around and from the PSL tool.

Related to the question of agency, participants thought it might be **beneficial if the user could start the test by indicating their life situation** e.g., child, tenant and then the questions / actions could be redesigned to match this reality of the users also.

In meeting 6 participants further exchanged on potential new features to be added and these have been summarised in that section also.

Skip function
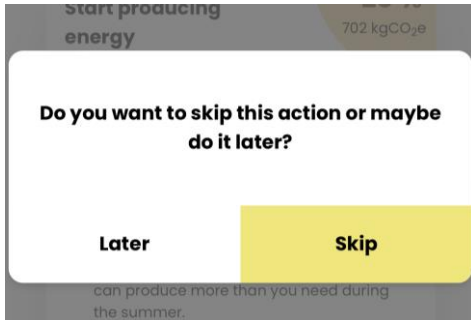
Skip function is a feature of the PSL tool enabling a user to indicate why one would not want to undertake a certain action. An **action can be skipped** already when a **person is shown a list of suggestions to improve their carbon footprint** and/or at a later stage, once a **person has decided to take up that action** but realizes its **implementation is a bit more difficult** or **they have had a change of mind about the said action**. The purpose is to **deep dive a bit more into the reasons, mostly barriers**, towards more sustainable lifestyles and **utilize such insights as basis to design systemic solutions**. So far, the **skip function options** are the same across all actions and these are: a). I don't know how; b). I don't have the support I need; c). It's too expensive; d). It's not available where I live; e). It's not popular where I live; f). It takes too much time and effort; g). I already do this.

With regards to the skip function, participants across the different countries had diverging thoughts about it. For example, despite finding the skip function useful and purposeful, participants in Estonia, Finland, Portugal and Slovenia indicated they **would not use it in its current form**. The **reasons for this were both content and user interface wise**. For example, in Finland, Estonia and Slovenia the **many steps one needs** to undertake to use the skip function **was seen as challenging**, while as in Portugal the **number of options was overwhelming**.

In Slovenia, participants indicated that the **feature is cumbersome for the user** even though they understood it would be beneficial for the systemic changes. In addition, the **differentiation between skipping and removing an action was not understood**. In Estonia, **the icon** of the skip function was **perceived as too small** and **the trash icon intimidating.** Similarly, Slovenians perceived the icon too small also. Turkish participants shared similar thoughts, however, on top they **didn't really understand the value of the function to start with**, and in addition they **didn't understand why the function is present during the creation of the plan and then at the implementation stage also**.

In **Italy and Germany, the exchange was a bit more different**. In both cases, **participants saw the value and would use the function**, especially when knowing that the systemic solutions would depend on such insights. However, **optimising the function was suggested in these countries also**.

Looking at the options, in Estonia, Finland, Greece, Germany and Italy it was suggested the **option for the actions they are currently undertaking should sit outside the skip function for an easier navigation**. In addition, in Finland, Slovenia, Turkey and Germany participants thought the **options could be further revised / complemented**. For example, it was suggested to add some new skip options related to the wish of the person to take an action or not, diversify the reasons to match their life situations and different motivations, including here an option that indicates the lack of possibility to perform an action due to being outside one's control (i.e., lack of agency as seen above). In both Slovenia and Germany, the open-ended option was suggested, while as in Germany participants thought tailored skipping options per action could be an interesting approach.

MyProfile

MyProfile is a feature of the PSL tool capturing forms of motivation profiles which are presented to the users once they finish their lifestyle test. The profiles summarise key characteristics of user groups, creating similarities, depending on their answers to the lifestyle test. The purpose is to increase the gamification element of the PSL tool and make it more attractive for the user. They are inspired by Sitra's work on the field[2]. Examples of such profiles are included in the next page.

For this particular session, participants were asked to share their thoughts on the various motivational profiles, both with regard to content and design elements.

As highlighted above, the feature was not discussed in Greece, Finland and Germany. Participants in Estonia, Portugal, Italy, Slovenia and Turkey **appreciated the idea and the fun element** that it **adds to the overall experience.** However, across all countries, it was agreed that the **content of the different profiles should be further tailored and adapted to the local realities**, both with regard to content and the visual elements the profile adopt.

Throughout all countries, the **positive language as opposed to the negative one was preferred, while the negative was found intimidating**. A **positive storyline** would also help / e**ntice users to share the profiles in their social media and/or circle,** which would then contribute to the **community feeling**. Otherwise, they would be more **hesitant to sharing a negative oriented profile**.

In Italy, participants noted the need to make the **descriptions more gender neutral** and for the **text and images to correspond**. Across the countries, the **creation of more profiles was suggested** to reach a good balance between the various demographic groups.

In Portugal and Slovenia, it was **suggested not to use animals, but other characters** that would **match a bit more the culture**. The possibility to **customise avatars** was brought forward in Italy and Turkey, for the purpose of making the **user experience more entertaining**.

---

2 Kaitosalmi, K., Tuomisto, T., Saarikoski, E. (2021). Motivation profiles of a sustainable lifestyle. Available here.

A Hero of Sustainable Everyday Living

Profile description:

"Congratulations! Your carbon footprint is under one third of that of the average Finn. Don't be so modest – let your friends know the secrets of your lifestyle! The environment will also thank you."

YOU ARE A HERO OF SUSTAINABLE EVERYDAY LIVING

If the result is less than or equal to **3000 kg** CO₂e
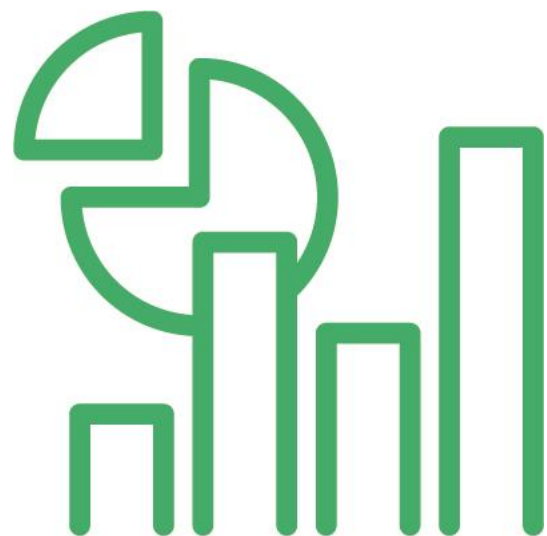
Economical Home-Lover

Profile description:

You are the heart and soul of your home and create balance around you. You know the impact of your lifestyle on the environment, although you may occasionally give in to temptations.

You may rely too much on nutrition derived from animals. You could add more vegetables to your plate, even just for the taste.

We should all halve our carbon footprint to curb climate change.

YOU ARE AN ECONOMICAL HOME-LOVER

If the result is **lowest in the Housing category**, and total footprint is less than 14 700 kg CO₂e

Quality-Conscious Indulger

Profile description:
You understand the impact your choices have on your lifestyle and the environment.

When you travel, you could take advantage of different modes of transport and save money and time. Can you think of ways to reduce sedentary time?

We should all halve our carbon footprint to curb climate change.

YOU ARE A QUALITY-CONSCIOUS INDULGER

If the result is **lowest in the Things and purchases category**, and total footprint is less than 14 700 kg CO_2e

Green Gourmet Lover

Profile description:
You know that the way to the heart and healthier veins is through the stomach. You know the impact of your lifestyle on the environment.
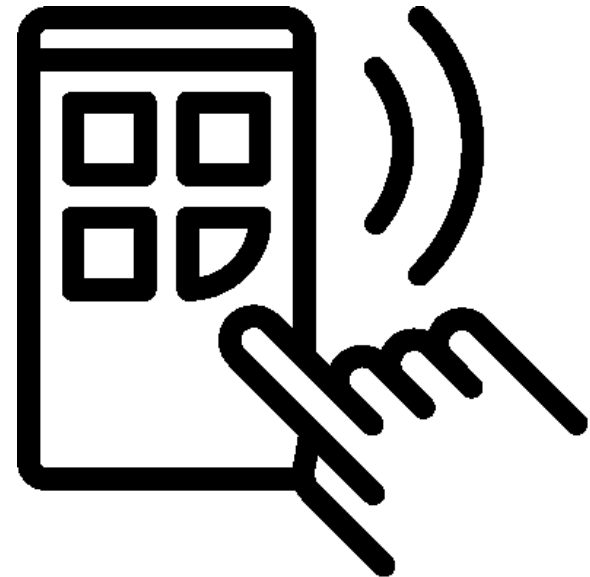
Your home is your castle and you understand how your home consumes energy. A few easy tips may save you up to hundreds of euros per year.

We should all halve our carbon footprint to curb climate change.

YOU ARE A GREEN GOURMET LOVER

If the result is **lowest in the Food category**, and total footprint is less than 14 700 kg CO_2e

Meeting 6

Procedural information in a nutshell

The objectives of meeting 6 were to:

1) to exchange and receive participants **impressions on the feasibility of the recommended 100 Smart Every Day Actions**, with a focus on the **barriers that might hinder their implementation and opportunities accelerating it**;

2) gain insights on the **different type of support PSL tool users might need** in the implementation of the actions and generally using the PSL tool; and

3) **close the CSL lab journey** together with the participants and speak of next steps within the project.

Similarly, to meeting 5, to avoid overwhelming participants with too much information, together with the local implementers it was decided that goal 1 was important to generate content for, while as goal 2 was optional and local partners would decide on their own if they would implement the respective session, however, the latter took place in all countries. Goal 3 was purely procedural and not content driven, hence, in this deliverable we do not report back on its proceedings.

Table 1 provides a quick overview of the locations of the last round of the CSLs meeting and the number of participants.

Results

Barriers and opportunities for actions

Housing

In the realm of housing several actions that are rather easy to implement have been suggested and selected by workshop participants. However, there were also barriers identified for those actions. For example, **drying clothes outside** has been mentioned by several participants, especially in Germany and Slovenia, as **an easy action to start with**. But it is required that a **certain infrastructure**, such as a balcony or garden, exists and can be used by the PSL tool user. Following this activity or not is also a **question of convenience**, a barrier that was listed several times also for other actions, e.g., for **reducing the room temperature** (Finland, Germany). The aspect of convenience and **comfort** also relates to **special needs** of e.g., elderly people and kids according to the participants in Turkey. The **high energy prices** functioned as an **external incentive** to regulate the heating (Finland). Some activities, such as **washing at a lower temperature**, simply **require a few more information and explanations why and how this is working** (Finland). Participants from Slovenia and Turkey highlighted that activities that suggest interaction with

other people, for example using shared appliances, such as washing machines, in apartment building blocks, might touch **cultural barriers** as interaction in this field, that might be perceived as **private sphere**, might not be accepted.

Other recommendations out of the 100 smart actions required much more effort and investment as well as longer time spans to be implemented and have thus not been tested during the lab iteration 3. Nonetheless, participants had the chance to reflect on those as well, and the following barriers have been defined in discussions: activities such as installing heat pumps, solar panels and water heating systems are **expensive are require (public) financial support and other incentives,** according to participants from all countries. Further, in Germany participants mentioned these actions can be only implemented by owners of houses or apartments, not by tenants. Their **limited sphere of influence** should be acknowledged by the PSL tool. **Political regulations and technological innovations** (such as heat pumps for apartments, indoor insulation) might empower tenants to take action. Also, for property owners, **political regulations that help distributing investments as well as revenues/ savings in a fair way can be an incentive,** according to German participants. For purchasing wind power or renewable energies and for other (more) demanding actions, as listed above, **specific and detailed guidance on which steps to take** would be appreciated by workshop participants, especially in Italy and Portugal.

Food

The realm of food is usually a good entry point for introducing changes as it connects to feelings of indulgence, comfort, community and enjoyment, which might increase the acceptance of changes. In general, the discussion about food has shown that it is worthwhile to list co-benefits or positive side effects of actions that go beyond the environmental impact. However, there is also a very pragmatic side to it when food is seen as nourishment.

The action of planting a kitchen garden was frequently discussed by lab participants in Italy, Turkey and Germany. As gardening is a traditional and wide spread practice it offers opportunities to **learn skills from (older) family members or friends** and also helps **to value food more**, as it is self-produced, which leads to less food waste. Nonetheless, having to start a **garden from scratch without much support from social networks**, and **learn all needed skills by oneself**, was seen as **rather demanding** and a barrier by participants. This was especially prevalent among the younger participants of the labs in Germany. In addition, participants in Italy thought **local municipalities could take a more pro-active role by supporting community gardens and share information about them**.

Related to gardening is the practice of composting food waste. On the one hand **space and infrastructure is needed** said participants from Turkey such as a garden or a well-equipped balcony or basement (for closed composting systems e.g., worm composting or bokashi). On the other hand, this activity also requires **substantial knowledge and skills**.

Discussions on the recommendation related to the reduction of food waste have shown that **social norms are a quite strong barrier for the challenge** (Finland, Germany). It can be part of people's mindset that it is important to **always have a full fridge and enough food at home** and also that **leftover or saved food is not good enough**.

On the other side, there are also people, especially older generations, that have lived a rather frugal lifestyle and more can be learned by them. Collaboration with grandparents can be also inspirational and informative when it comes to learning certain **planning skills, such as making meal plans for a week and writing a shopping list** for German participants. This also helps, next to **food waste reduction, saving money as it prevents impulse purchases, supports in choosing local and seasonal food** (Slovenia, Portugal). At the same time several participants mentioned that this way of planning groceries is not attractive to them as it **limits their spontaneity and purchase variety** (Finland). It might also **simply be not feasible** for some people if they do groceries only once a week according to participants in Italy. The needed knowledge in terms of **food literacy**, e.g., how to store products, what can be consumed after the best before date, is also a limiting factor as discussed in Portugal. Making food from leftovers also requires some **creativity and skills** (Slovenia). As this might be seen as too demanding, an easier recommendation by the participants in Turkey to produce less food waste by preparing **smaller meal portions**. In general, in Finland, Italy and Portugal participants thought it would be **helpful to use apps and discount systems in supermarkets to promote the purchase of products that would soon be thrown away**. It was criticized by Slovenia participants that **retailers are still very limited in their capacity to save more food due to regulations that prevent sales or donations of products that have reached the best before date**. Furthermore, some of the Slovenian participants saw a certain **risk for health when consuming products beyond the best before date**, especially meat and eggs. Here, food literacy is crucial to be able to assess the quality of food.

The **action of joining a food cooperative** has been discussed in the workshops in Italy and Turkey. It was seen as a challenge to do it on a regular basis due to a **lack of time**. Further, there was a demand from participants to **receive more information from the municipality on local initiatives and food cooperatives**.

The most challenging category in the dimension of food, according to participants, were dietary changes to **vegetarian or vegan diets**. On the one hand side, there is **peer group pressure** exerted mostly within family contexts. If other family members, kids or partners, don't want to abstain from meat or animal products in general, most participants stated to cook only one dish accepted by all (Finland). On the other side, **building teams together** with friends or family members can also be very **supportive in testing new diets and recipes** (Germany). **Vegan diets** have been seen as **very ambitious**. This might be caused by a **lack of knowledge on alternative proteins** as well as **good recipes and skills** to prepare tasty food. Furthermore, in Turkey and Finland participants articulated **scepticism regarding the healthiness of vegan diets**. In general, it was seen as **easier to eat vegan or vegetarian due to an increasing offer in supermarkets and restaurants and better recipes**. The time span of the recommendations was also partly perceived as **too demanding when a trial period of one year was suggested** by Italian participants. **One day or one week were considered as feasible**. In Turkey workshop participants highlighted that the **high meat prices** worked as **external incentive to reduce meat consumption**.

Mobility

The dimension of mobility can be quite challenging to change as practices in transportation have established as strong routines in our daily life. Many participants in Finland, Turkey, Slovenia, Italy and Germany mentioned that

cycling and walking are good for **exercise and relaxation**. Cycling **works well within cities and it saves money** as no parking is needed (Slovenia). But the opportunity to cycle and walk depends on the **physical condition of a person, a suitable landscape and infrastructure, weather conditions** as well as **facilities to shower and change clothes** at the workplace and a certain level of **timewise flexibility at work** as discussed by the participants in Slovenia, Finland, Germany and Portugal.

Giving up the private car seemed difficult for many. Young participants in Germany mentioned that this would have **reduced their convenience and ability to meet their hobbies** with limited free time after school. Also, in discussions on public transport a **private car was often seen as the fastest and most flexible mode of transport**. In addition, it also offers a **certain level of comfort** (Italy, Turkey, Greece). Participants from Portugal, Italy, Slovenia and Germany mentioned that the **public transport networks are not dense enough which limits the connectivity, especially outside city centres**. Further, the **costs for public transport were considered as barriers**. Public authorities could make public transport more attractive by **offering special discounts for families (and other user groups) and by improving the infrastructure and connectivity (Italy)**. On the positive side the participants mentioned that **using public transport allows** them to have **more time to relax or work and that they avoid traffic chaos including the search for parking**.

Regarding **changing the type of car** (to electric or bioethanol), participants highlighted that **some more information would be needed** about the sustainability of the other options e.g., bioethanol. A swap from a fossil fuelled car to an electric car was considered as **expensive** by the participants in Finland, Italy and Turkey. Thus, **public financial support** would be very appreciated as incentive **to get a more sustainable car**. Furthermore, the **charging opportunities were not seen as sufficient** in Italy. The option of **ride sharing (in private cars)** received mixed feedback in Turkey as it might be **difficult to implement due to safety regulations**. Nonetheless, **in general, more sharing opportunities were desired**.

When it comes to **work related travels**, in Italy it was highlighted that it is mostly **not in the capacity of employees to decide how often they do home office**. This would need to be addressed on the organizational level of the employer. Similarly, in Italy, **business trips via plane** were seen as a challenge that **needs to be addressed again by the employer**. The individual employee has only limited influence. **For flights in general it would be more realistic to add further recommendations, such as reducing the number of flights and compensation emissions** according to German participants.

Regarding **transportation for holidays**, the **train was seen as comfortable and affordable options** where one could sleep, eat and relax was seen attractive by participants in Slovenia. But it **might be difficult for longer travels if a connecting train is needed**. A **staycation** was perceived as challenging from participants in Slovenia **as they like to see other countries**. On the positive **side staying in your own country reduces language barriers** and it is considered as **good option for shorter vacations**. The **recommendation to stay a weekend at home could be more attractive** if it is complemented by **spending time in nature and/or increasing the social element of it** (Turkey). **Staying at private places for vacation** is related to **trust in strange people**, which might be a barrier, but in **general it is seen as an attractive option** (Italy).

General Consumption

Repairing items was often discussed as one impactful option in the sphere of consumption. As a starting point **information by the public administration on repair service providers and repair cafés** etc. would be appreciated. **Vouchers for repair services** could **incentivize the use of these institutions**. Moreover, **offering courses to learn** how to repair clothes, electronic devices etc. were considered helpful in Italy and Germany. Participants in Italy also expressed interest in **tool libraries which could be supported by municipalities**. Regarding the **quality of the product** the participants mentioned that they are often in **such a poor quality that it is not possible to fix them**. Sometimes the **repair is more expensive than a new product** as noted by Italian and Slovenian participants. As a consequence, participants in Slovenia additionally highlighted that the **option for repairing should be considered already when designing a product**.

The consumption of **pre-owned clothes or technical devices** received mixed feedback. Some participants in Italy and Portugal expressed a **simple dislike towards the idea** and when it comes to **clothing the limited availability of particular pieces is a challenge**. More importantly, it is connected with a **social stigma**: people who are buying second hand might be perceived as poor according to Slovenian participants. On the positive side participants mentioned that due to last years' trends, the **options** for buying second-hand online or exchanging them on clothes swapping parties **have increased**. Also, the **quality was often seen as better as new fast fashion** (Slovenia, Portugal).

With regards to **waste sorting**, participants highlighted that this is **largely influenced**, on the one side, by the **local infrastructure (number of different bins, public recycling points, etc.) and on the other by individual behaviour** (Turkey, Italy). Especially the first part and to a certain extent also the individual part can be steered by municipalities.

The recommendation to **wash clothes less often** is **touching a cultural barrier and social norms** in Italy. **Sharing things with neighbours is requiring a certain level of trust that is not seen** e.g., in Slovenia. Also, the **use of public libraries is not possible everywhere as they are not available in every neighbourhood** according to participants in Turkey.

Overarching findings

Ease of implementing low impact actions. Throughout the workshops it was recorded that participants found certain low impact actions relatively **easy to adopt**. These included using LED lighting, putting a "no ads" sticker on the letterbox, drying clothes outside, and maintaining a kitchen garden. **Participants' willingness to try new options that maintain comfort levels proved to be a good motivation to take action**. Such actions provided a **sense of accomplishment and empowered individuals** to contribute to sustainability within their sphere of influence, but they are not sufficient to reduce footprints to the 1.5-degree limit. Here, **more enabling framing conditions, structures, regulations and incentives are needed.**

Enjoying positive side effects. Introducing **innovative and convenient solutions** that offer **co-benefits beyond environmental impact, such as improved health, social connections, time savings, and cost reductions**, can make sustainable actions more appealing and empowering and shall be reflected in recommending actions.

Moving beyond individual efforts. The workshops recognized the significance of moving beyond individual actions and **engaging organizations, employers, and systemic changes**. Suggestions were made to **incorporate sustainability criteria into public procurement regulations, promote practices like home offices and reduced business travel, and advocate for political decisions that prioritize sustainable infrastructure**. Some participants expressed **frustration** at the perceived **unfairness of individuals sacrificing comfort while larger actors**, such as the economy and politics, **lagging behind**.

Structural limitations to creating higher impact. When reversing the lifestyle test and not calculating the actual footprint but trying to live a life that is compatible with the 1.5 degree limit it revealed that living in a normal-sized rented apartment and keeping the current job made it **very challenging to stay below the 1.5-degree limit**. This would only be possible with significant lifestyle changes, such as avoiding motorized transportation altogether and following a vegan diet. This highlights the **need to consider contextual and structural limitations** when living in a well-developed country which means that all members of our society already have a significant foundation in their individual CO2 budget that they cannot change.

Sphere of Influence. The workshops emphasized the **importance of acknowledging the different spheres of influence of individuals**, such as property owners vs. tenants or parents vs. children. **Groups with higher influence and agency should be asked, incentivized and supported to implement actions,** e.g., through regulations and financial support mechanisms. **Groups with less influence in high-impact areas** (such as energy, transport) **should be enabled to take smaller steps and focus other fields where they can take action**. Also, **empowerment to express interests in the political field** (e.g., by starting voluntary engagement, talking to politicians, etc.) could **support groups with lower agency**.

Financial investments and support. Many **impactful actions require higher financial investments**, such as retrofitting buildings for energy efficiency and installing new technologies (solar panels, heat pumps, etc.). Participants stressed that **it's important to support low-income groups and thus to enable them to also undertake impactful actions.** Further, **means should be found to persuade older home owners to take actions**, as for them mid- to long-term financial benefits might not be an incentive. **Public financial support is seen as a key prerequisite for high impact actions.**

Figure 1: Impressions from the last round of CSLs meetings

PSL support

Your plan is looking great! Need some help with it?

We all need help from time to time. Let us know what you might need and help us make this service better too.

Continue

Workshop participants discussed suggested options for receiving more support in implementing actions as well as using the PSL tool and provided feedback how to improve the potential support. The following options have been discussed:

🔵 **Planning features such as reminders, timelining.** This type of support was well received in all countries and most participants indicated interest in using it. However, it should be customizable as a few participants in Germany also mentioned that constant tracking of activities can be annoying.

🔵 **Information / tips about how to make your actions happen.** This option for support was the most favourite across many countries (Germany, Estonia, Finland, Italy and Slovenia). As highlighted before, specific detailed guidelines on how to implement certain actions would be highly appreciated by users. This support offer might include to ask for some more detailed socio-demographic data, such as location, property owner/ tenant, etc., to provide better suiting recommendations and guidelines. This option might also be used stronger in the beginning and less along the journey of change according to German participants.

- **Hear from people like you who are also making the change.** This support option was partly welcomed in Italy, Slovenia and Germany, but seen more as a passive source of information and motivation (e.g., in social media campaigns) without sharing information actively about own experiences.

- **Get stories about people who made the change.** This option was the least popular among lab participants across all countries.

- **Meet-ups and workshops with people to help each other.** This support option was partly well-received in Slovenia, Finland, Italy, Portugal, and participants stated they might meet in organizational contexts such as schools but rather not with complete strangers as they prefer some level of privacy in their recommendations e.g., in Germany.

- **Personal mentoring / coaching from experts.** This type of support might not be used frequently as participants saw it as time consuming and a big commitment. It might be feasible to have this as one time offer, with a short timeframe, such as 30 minutes and offer it for free (Germany). Further, it might be considered to have an AI based consulting solution, such as a chat bot, answering questions, when needed (Estonia).

- **Information / help how to get other to join the change.** Participants in Estonia, Slovenia and Turkey expressed only limited interest in this support function. However, for German participants, it might be interesting for multiplier organisations if it is done in an attractive way.

Further suggestions on support and user engagement

- **Optimizing the PSL tool functionality.** Participants provided feedback on usability of the tool as well. When recommending actions, it was suggested to focus on the top 5 most impactful actions and also filter action by done/ open. Some participants were already doing many of the suggested actions and would have appreciated a higher filtering system. Participants also thought it might be better to suggest several options with different levels of ambition in one action. To enable a higher implementation of actions it was requested to provide concrete smaller steps for implementing actions.

- **User support and engagement.** Suggestions include features such as meal planning, reminders, shopping lists, and space for notes. They also emphasize supporting users with limited influence to encourage others to make sustainable choices. Additionally, participants suggested peer surveys on biggest barriers and sharing stories

of failure as feedback mechanisms to create trust and reduce the pressure on users. Ambassadors, influencers or other famous people might be helpful in supporting users in taking the right actions.

- 🔵 **Guidelines.** Suggestions focus on providing smaller specific steps and guidelines, organizing workshops and events, integrating sharing options, offering video tutorials and practical examples, download information to give to property owners, facilitating community discussions, and providing information on public funding.

- 🔵 **Gamification and personalization.** Participants suggested to incorporate more gamification elements similar to popular smartphone games to increase the entertainment element of the PSL tool.

- 🔵 **Localized information and collaboration.** Participants would appreciate specific information on what is possible in their specific environment. This support option should include providing information on local resources, such as recipes with local ingredients, second-hand shops, electric bicycle stops, and sustainable events.

Participants suggested that such further reaching support options might be included in a follow up webpage - individualized by country to provide specific and localized information on products, services, initiatives, support programs and similar.

Conclusion

The **transition towards sustainability** requires the **involvement of all decision makers / actors, including citizens** for a more systemic and holistic approach. Throughout the years it has been recorded that the **sustainability solutions** which are **based on people's (local) realities as well as actual wants, needs, values and behavioural (decision making) patterns** are those that **hold more potential to be effective in their aims**. This is especially important when considering the **social and cultural differences as well as the different contextual conditions** in which people across regions operate. Therefore, there is an **increased attention and pursue of involving citizens in the sustainability topic** through various participatory methodologies / processes from conventional exchanges, opinion provision, co-development of solutions as well as large-scale data collection and provision.

The **PSLifestyle project** enables such **citizen involvement** across all levels from exchange to data collection and provision (as seen above) and **collection of consumer insights** through two approaches, namely, the citizen science labs and the PSL tool. It seeks to understand what are the most pressing lifestyle hotspots / footprints, the consumer preferences of solutions / actions to mitigate such footprint as well as barriers and opportunities towards such actions.

Specifically in this report, we have **outlined the results** of a participatory process such as the **PSLifestyle's latest and final round of CSLs meetings** where together with European consumers we have spoken, prominently, on **barriers and opportunities towards sustainable living** and **how the PSL tool** (with its functions and features) **could be further developed to support that pathway**.

This **round of the PSLifestyle CSLs** meetings were a **continuation and closing of a journey of four previous meetings** that have started in 2022. In the **first two meetings,** participants were **introduced to the PSL tool** and the **concept of sustainable lifestyles**, while in the **following two**, the **everyday actions** that are now central to the PSL tool **were co-created**. As highlighted above, the **output of the exchanges** with the citizens will **feed into the content creation and localization of the PSL tool.** Besides co-defining and localizing this content, the **participants** of the CSLs have been **engaged to co-create the features and functionalities of the PSL tool**, also. In such a way, the project tried to ensure the **tool reflects the needs and expectations of its users** and as such **increase the chances of its broad and continuous usage**.

In late summer 2023, the **project will go live with the PSL tool in its 8 project pilot regions** (Portugal, Finland, Estonia, Germany, Greece, Slovenia, Italy and Turkey) and **seek to engage a substantial number of European citizens** in data provision and beyond **improve Europeans' lifestyle sustainability performance**.

Stay tuned for the PSL tool and **let's join forces** on any idea, initiative or solutions that holds potential to make our lifestyles a lot more sustainable.

Annex

Suggested agenda for CSL meeting 5

Timing	Agenda item
30' (before the meeting)	Registration
Setting the scene	
10'	Welcome, agenda and objectives of the workshop
	The PSLifestyle project – A reminder • What the project is about? • A reminder to the user journey of both the labs and the PSL tool
Looking back – what we have done so far?	
50'	• 10' What we have done so far? Where we are now with the tool and which changes, we took up? • 5' Quick QA after the presentation • 25' Trying out the PSL tool, incl. the skip function • 10' Quick round of reflection on the new version of the PSL tool
The what and why of the skip function	
10'	A short introduction / reminder to the skip function
30'	Reflection on the function's content, benefit & usability
Co-creating 'MyProfile' - the new feature of the PSL tool	
5'	A short introduction to 'MyProfile'
55'	Further co-creating together, the 'MyProfile' feature
Can we do it? – implementing the PSL plans for the next 2 weeks	
10'	Implementing the PSL plans – a two weeks challenge
Closing and next steps	
10'	Quick feedback round on the meeting - general
5'	Next steps for the project after meeting 5

Suggested agenda for CSL meeting 6

Timing	Agenda item
30' (before the meeting)	Registration
Setting the scene	
10'	Welcome, agenda and objectives of the workshop
	The PSLifestyle project – A reminder • What the project is about? • A reminder to the user journey of both the labs and the PSL tool • A reminder to what we did in meeting 5 and the pending 'homework' – tracking the plans. *Subject of tailoring depending on how the meetings are conducted.*
Barriers and opportunities to more sustainable living	
5'	Quick introduction to the interactive exercises / World Café format
90'	Time for exchange – barriers and opportunities to more sustainable living
How can the PSL tool help you in maintaining the PSL plans?	
10'	A short introduction to the 'what help would you need?' feature
30'	Feedback round
The road ahead, closing and next steps	
10'	• Where are we going? What is the PSL tool's ambition with regards to its features, content and engagement of people and stakeholders.
5'	Next steps for the project – Large scale deployment of the tool & participants' role as ambassadors for the PSL tool – Consultations with key actors based on the lab and PSL tool developed learnings
10'	Quick round of QA on the previous 2-points
10'	Quick feedback round on the meeting – general
A big thank you to the participants, highlighting once again how their input has helped the project and PSL tool, hoping they have enjoyed the meetings and ideally keeping in touch for other project activities! J **Closing the meeting!**	

Project partners

PS Lifestyle

Learn more

www.pslifestyle.eu

Contact us

info@pslifestyle.eu

Follow us

LinkedIn**:** PSLifestyle Project
Twitter: @PSLifestyle_EU

pslifestyle.eu