FULFILL

Fundamental decarbonisation
through sufficiency by lifestyle changes

In-depth analysis of highly sufficient lifes-tyles

FULFILL Deliverable D 3.2

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Fundamental decarbonisation through sufficiency by lifestyle changes

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2	**Wuppertal Institut für Klima, Umwelt, Energie GGMBH**	WI	DE	
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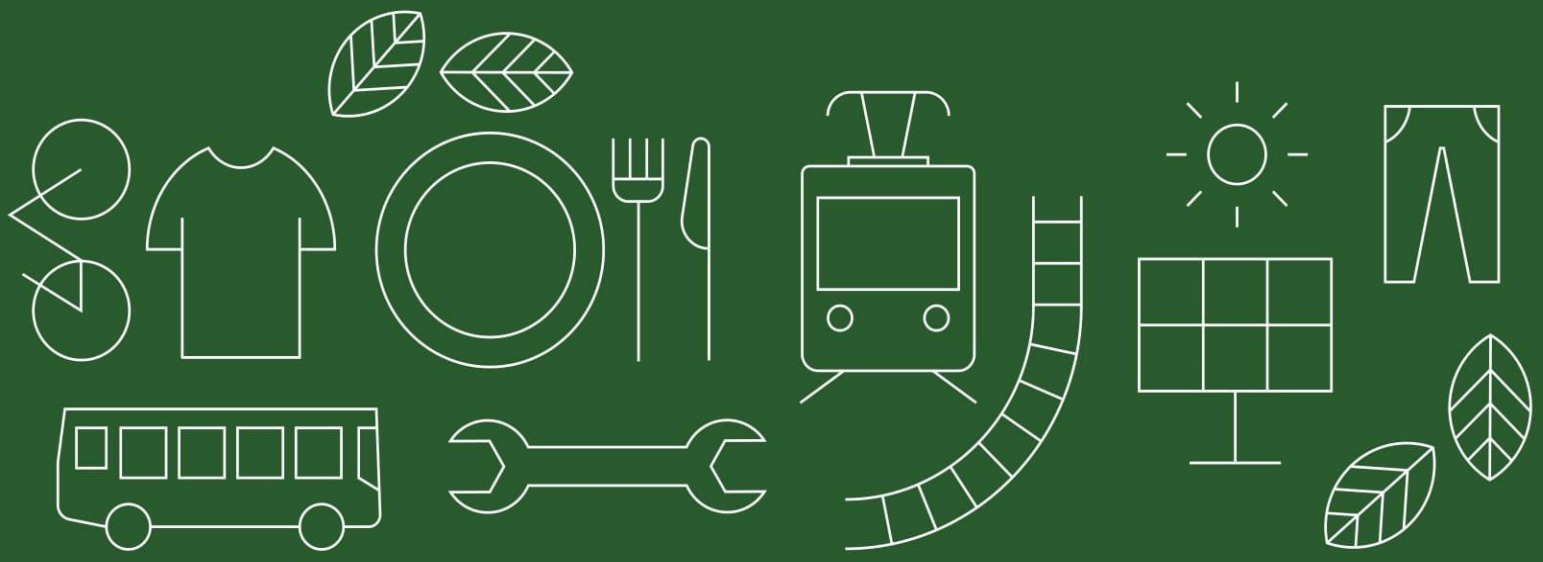

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List of Abbreviations

EU	European Union
NDC	Nationally Determined Contributions
SSH	Social Sciences and Humanities
MS	Microsoft

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Abstract / Summary

This part of the work refers to the objective of "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, a history which encompasses simple-living movements, and a large potential growth of emissions."

This deliverable builds on socio-anthropological fieldwork conducted in six countries (France, Italy, Germany, Latvia, Denmark, and India) with participants from intentional communities (N=103) and with panel respondents (N=57) selected from the cross-country survey on carbon footprints deployed in the previous task (see T3.1.)

In this piece of research, our objective is to explore the diversity of social practices and of socio-demographic profiles associated with sufficiency, to understand the motivations behind their adoption and the needs they fulfill, and to address the varieties of sufficient lifestyles and the importance of social contexts. In the first part of the deliverable, we investigate sufficiency routines and habits and their impact on respondents' daily lives in the intentional communities across four main domains: housing, food, goods, and ecovillages, based on social practices theory and theories of fundamental needs. In a second section, we explore the views on sufficiency and consumption choices of both low-income and high-income households from the panel, selected on their "average" (relatively to their country's) carbon footprint.

Our research indicates that environmental concern is widespread in most countries and groups, though not necessarily predominantly about energy and climate – plastic waste, pollution, and droughts are more direct and visible impacts of our lifestyle on the environment. That said, many respondents both in intentional communities and in the panel are aware of the impact of lifestyle choices on climate. The concept of sufficiency as reflecting the necessity not to overpass the planet's boundaries and to focus on fundamental needs is not widely known in most countries (except France), but generally reflects well the views of participants on what sustainability should be. Sufficiency is also positively seen by panel respondents in most cases. However, cleavages occur when individual freedom is at stake, which is often the reason why panel respondents would oppose sufficiency-oriented policies, especially among the high-income ones, while the low-income ones display a remarkable level of distrust towards political elites (except in Denmark) and worry that sufficiency-oriented policies might worsen their economic situation.

Though environmental concern may be widespread, it is rarely the main motive for joining a sufficiency-oriented initiative. The increased quality of social relationships, the feeling of community and trust, the increased quality of life and the acquisition of new skills are the main reasons why people choose to join an initiative. Our research fully supports the evidence of a positive effect of sufficiency on wellbeing but suggests that wellbeing might the motive rather than the effect. The fact of belonging to a community also brings multiple spillover effects that multiply the positive impacts of sufficiency.

We find that the ability to participate in a sufficiency-oriented initiative depends primarily on the availability of resources (in time and money, but also social and technical) because creating sufficiency-oriented initiatives is often a long and complex process in the current normative, economic, and institutional ecosystem that does not favour them. That said, there are different levels of involvement both within initiatives and between them (for example, participating in a community-supported agriculture initiative is not as demanding as living in a tiny house). However, the necessity of having skills, resources, and time to dedicate to those projects is probably the main reason why the majority of individuals participating in those initiatives come from highly educated backgrounds. Our research thus supports the evidence that sufficiency can only be achieved once basic needs are satisfied (Vita et al. 2019). However, the research also shows that the availability of resources is by no means enough to engage in a sufficiency-oriented lifestyle and that the level of constraint must be adapted to the level of need (e.g., progressive tariffs).

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Indeed, while high-income panel respondents are not constrained enough in their consumption choices to lean towards sufficiency (even though they do not oppose the principle, they prioritise the maintenance of their current comfort levels, even if at higher costs), low-income panel respondents are overly constrained and, in the most extreme cases such as underprivileged populations in the Global South, unable to meet their needs.

Our research also shows that the adoption of sufficient practices is often accompanied with a desire to better consider unpaid labour (including domestic labour and care duties) as opposed to paid labour, both at the individual level and at the household-community level. Because of the awareness on gender issues, respondents from sufficiency-oriented initiatives do not report any increase in the gender division of work, even though women still appear to be more concerned and more involved in those initiatives. Among the panel respondents, on the contrary, we have found a highly gendered division of labour, with women being in charge of almost all domestic and care duties.

Efficient, fair and sustainable public services, together with a just distribution of resources, income and participation in both paid and unpaid labour, are thus the main social levers for a sufficient society.

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Introduction and Overview

Purpose of this Document

The deliverable refers to the objective of "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."

The overarching aim of work package (WP) 3 is to translate the concept of sufficiency lifestyles to the micro level for empirical research. The WP applies a mixed method design with two longitudinal surveys (task 1 and 3) and an interview study (task 2) which are connected methodologically and conceptually. It is implemented in five European countries, namely Denmark, France, Germany, Italy and Latvia, as well as India as an additional non-European country. As an outcome, we will gain insights on the current prevalence of sufficiency-oriented lifestyles across citizens in five European and the Indian society.

The emergence of sufficiency-oriented lifestyles will be analyzed according to contextual and structural factors as well as through biographical analysis, which will lead to the identification of enablers and barriers. As outlined in previous deliverables (Pagliano & Erba, 2022; Tröger et al., 2022), within the scope of FULFILL, sufficiency is defined 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.*

This deliverable focuses on outlining the outcomes of task 2 in WP3. The aim of this task is to research highly sufficient lifestyles in all six countries, based on grassroots initiatives for sufficiency and sufficiency-oriented communities identified in WP4, and to investigate the barriers and levers for adopting sufficient practices across "ordinary citizens". Participants of sufficiency-oriented initiatives in the six countries have been interviewed extensively about their lifestyle (house equipment, consumption pattern: food, housing, transport, etc.), how their lifestyle developed in their biography, in how far their lifestyle has been persistent across their lifespan so far, what contextual and structural elements play a role, i.e. in supporting or adding difficulties in their life, and the current trends in the development of their lifestyles and related carbon footprints. A gender sensitive approach is taken, e.g., by asking about the division of labour within the households. The extensive material assembled will be used to achieve assumptions on a systemic view of factors that enable or hinder sufficiency lifestyles today, to identify which incentives are relevant to make them sustainable and what policy instruments could support the diffusion and transformation of such lifestyles, feeding into WP5.

The question of the heterogeneity of sufficiency between different consumption domains, combined with an analysis of the adoption processes, levers and constraints, are addressed in this task, in order to give insight on the potential of sufficiency policies.

Project Summary

The project FULFILL takes up the concept of sufficiency to study the contribution of lifestyle changes and citizen engagement in decarbonizing 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 actually achieve progress in climate change mitigation. Furthermore, it enables us to go beyond strategies that focus on single behaviors or certain domains and instead to look into lifestyles in the socio-technical transition as a whole. The critical and systemic application

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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 build the core 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 decarbonization 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.
- 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, a 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 analyzing 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.

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1 Theoretical framework and research questions

1.1 Theoretical framework

Building on the project's literature review, which derived the classification from Sahakian and Wilhite (2014), we distinguish between sufficiency habits (sufficiency measures taken by individuals due to permanent lifestyle changes), sufficiency infrastructures (physical and non-physical infrastructures enabling sufficiency habits), and sufficiency societal frameworks (institutions, legislation, norms enabling sufficiency habits).

In this part of the project, **we focus especially on *sufficiency habits* and their relationships with infrastructures and societal frameworks, which we explore using the tools of social practice theory.** Social practice theory has been recognised as an increasingly relevant tool to investigate the relationship between policy and practice in the framework of lifestyle changes that are expected, encouraged, or hoped for in the context of the energy transition (Evans et al. 2012). It defines practices as "routinized behaviours" (Reckwitz 2002), encompassing individual actions, narratives about actions (Schatzki 1996), and material elements (things and structures). All these elements participate in defining a contingent "way of doing" that is specific to each socio-historical context (Warde 2005) and that constitutes the "normal" way of doing things in each society and/or social group (Shove 2003).

In the context of the energy transition, the focus has been put especially on how the "normal" state of things may change (Shove et al. 2012), since what has been defined as normality in affluent, capitalist Western societies has proven to extend beyond planetary boundaries. This implies a focus on non-hegemonic practices that imply an alteration of what is usually referred to as the "normal way of doing things" in mass consumption society (Speck and Hasselkuss 2015).

1.1.1 Sufficiency and sustainable lifestyles

Sufficiency has often been described as a set of individual practices aiming at less materially intensive consumption patterns (Hayden 2019), focusing on wellbeing instead of material wealth (Soper 2007; Samadi et al. 2017). Fuchs and Lorek have also referred to sufficiency as "changes in consumption patterns and reductions in consumption levels" (Fuchs and Lorek 2005, 264). Sandberg (2021) further differentiates between absolute reductions in consumption, modal shifts, product lifetime, and sharing practices (Sandberg 2021). Sufficiency thus conveys specific practices of dwelling, eating, moving around, and consuming that are generally referred to as lifestyles and are increasingly seen as a key driver for decarbonization (Neuvonen et al. 2014; Costa et al. 2021; Samadi et al. 2017; Saujot et al. 2020). Individual households but also grassroots communities have been particularly identified as potential sources for sufficient lifestyles (Vita et al. 2019; Thredgold et al. 2022)

In this respect, the concept of sufficiency also draws on the extensive literature on social change towards less carbon-intensive lifestyles (Jensen 2007). This includes works on sustainable lifestyles (Evans and Abrahamse 2009; UNEP 2016), green lifestyles (Lorenzen 2012), low-carbon lifestyles (McLoughlin et al. 2019; Salem et al. 2021), anti-consumption lifestyles (Kropfeld et al. 2018), as well as voluntary simplicity and frugal lifestyles (Leonard-Barton 1981; Lastovicka 1999; Osi-kominu and Bocken 2020).

Studies that have further investigated the rationales, motivations, and meanings associated with these alternative consumption practices have insisted on their hedonistic dimensions (Vannini and Taggart 2016; Lelkes 2021). For those who aim for a more sustainable lifestyle, **the quest for "plenitude" (Schor and Thompson 2014), a "good life" (Soper 2007), and self-realization seems to surpass the lure of accumulation**, and the interest in resource use seems prominent. Referring to off-grid water supply, Vannini and Taggart describe "onerous consumption" as this "type of alternatively hedonistic consumption characterized by burdensome involvement" in the

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process, creating "a profound awareness of resource utilization" (Vannini and Taggart 2016, 80). This dimension of "extra effort" that is necessary to engage in lower impact consumption has also been underlined by studies using a behaviouralistic analytical framework (Abrahamse and Steg 2009).

The idea of "making an individual effort" to "save the planet" has been widely used by NGOs to promote more sustainable ways of life. Yet it has also created a new form of moralization of consumption behaviours (Malier 2019). The paradigm of "conscious" as opposed to "conspicuous" consumption has also been criticised for individualizing the responsibility of action against climate change (Maniates 2002) and failing to take into consideration the need for supply-side and structural changes (Akenji 2014).

One of the most important limits to the generalization of the sustainable or "green" consumption paradigm are its socio-economic determinants. **It has been proven in most studies that the "green" consumer is typically a white, Western, middle-class consumer with high cultural capital[1] (Holt 1998; Johnston et al. 2011; Kennedy and Givens 2019).** Building on Bourdieu's theory of taste (Bourdieu 2015 [1987]), some authors have referred to the existence of an "eco-habitus" (Holt 1998) or "green distinction" (Grossetête 2019) to explain the localization of such behaviours in specific socio-economic segments of society, highlighting the importance of the symbolic rewards of being a "good consumer" that exist in some social groups, but not in all. Other research shows that green consumption can be used as a trade-off for overconsuming and yet environmentally aware affluent citizens (Coulangeon et al. 2023), meaning that **green consumers do not necessarily consume less, but rather better.**

However, sufficient or sufficiency-oriented consumption differs from sustainable or green consumption insofar as sufficiency is precisely about consuming less in quantity as a core principle. In this respect, some authors have underlined the fact that **sufficiency has been part of the lifestyles of low-income households for a very long time** (Ariès 2015; Villalba 2016), while others have warned against the temptation to **confuse chosen sufficiency with poverty and deprivation** (Gorge et al., 2014). On the other hand, the literature has highlighted the disproportionate weight of the most privileged segments of the world population in the global footprint and greenhouse gases emissions, raising the issue of affluence as the main determinant for non-sufficient lifestyles (Wiedmann et al. 2017; Boucher and Merida 2022).

Sufficiency thus raises the question of what is "enough" collectively and individually (Sachs 1999). In this respect, some authors have advanced the concept of sufficiency in terms of "consumption corridors" (Spengler 2016; Fuchs et al. 2021), thus highlighting the importance of income inequalities and social stratification in the context of low-carbon transitions (Millward-Hopkins and Oswald 2023).

The issue of gender equality has also been the subject of an important debate concerning the potential of sufficiency to achieve a low-carbon transition. This debate is partly linked to the issue of time-use. Indeed, many authors have argued that time is a determinant variable for practices because time budgets constitute the organizational foundations of daily life and are poorly stretchable (Southerton 2006). Time-use has also been used as an analytical tool for approaching the evolution of specific practices, such as eating and cooking (Warde et al. 2007), and to measure carbon emissions (Druckerman et al. 2012), **suggesting a relationship between sufficiency and time affluence that we will further explore in this research.**

The discussion about the potential negative effects of sufficiency with regard to gender inequalities derives from the issue of the social stratification of time-use and especially from the differentiation between productive and reproductive work in capitalist societies. Indeed, because work activities are more intense in carbon than non-work activities, including domestic work (Druckerman et al. 2012), it has been argued that sufficiency policies may have a negative impact on women's participation in the labour market and on gender equality, because of them being mainly responsible for domestic activities (Isenhour and Ardenfors 2009; Wang 2016). In addition, research finds that all things being equal, women's footprints are lower than men's, and that

[1] Such as diplomas in higher education

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women are more likely to display sustainable practices (Isenhour and Ardenfors 2009), which is supported by the findings of T3.1. This aspect has fueled theories on ecofeminism and the need to reconsider the importance and value of care activities to achieve the transition towards a sustainable economy (Soper 2009), notably through the concept of the subsistence economy (Shiva and Mies 2014; Szopa et al. 2022; among others).

In this part of the FULFILL project, we propose a disaggregation of the notion of "lifestyle" through specific and identified practices, which are by no means exhaustive but are particularly interesting to consider with regard to the concept of sufficiency. These practices overlap with what has been referred to elsewhere as "sustainable" or "low-carbon" lifestyles, but they embrace a narrower compass of practices, which we will define in the following paragraphs (see section 2, "Methodological approach"). However, practices are not necessarily consistent in all domains of life (Bartiaux and Reategui Salmon 2012; Coulangeon et al. 2023), thus justifying the need to better understand how lifestyles and practices interact.

1.1.2 Sufficiency, the fulfilment of human needs, and wellbeing

The definition of sufficiency that we adopt in this project is based on two postulates. The first is that sufficiency creates the conditions for respecting planetary boundaries (see previous paragraph), and the second is that sufficiency enhances wellbeing and fulfils human needs. Indeed, the search for energy sufficiency raises major challenges, not least of which is to decouple the fulfilment of human needs from energy consumption and greenhouse gases emissions. What conditions could enable society to satisfy human needs and attain collective wellbeing while preserving planetary boundaries?

- Needs

Needs are prerequisites for a good life in society: wellbeing can only be achieved once needs are satisfied. The core idea of human needs theory is that there is a finite number of needs that are self-evident (i.e., universal, recognizable to all), incommensurable (i.e., satiable, irreducible, and non-substitutable), and non-hierarchical, encompassing the range of capacities or dimensions of world happiness. It is worth mentioning that the well-defined and finite nature of needs makes them eminently suitable for empirical and quantitative research. A range of authors have defined a list of needs, including Maslow (1943), with his hierarchy of needs, which has been criticised for its hierarchical and ethnocentric aspects, as well as Max-Neef (1991) and Doyal and Gough (1991).

Vogel et al. (2021) argue that sufficiency, or energy service sufficiency, could provide a sound framework to deliver energy services equitably, while remaining within planetary boundaries. But the concept of sufficiency cannot be dissociated from assumptions about what is 'enough' or from principles about distributional justice: it steps outside conventional energy policy." According to Fawcett (2019), energy sufficiency is a state where people's basic needs for energy services are equitably met and where ecological boundaries are respected. **The definition of energy sufficiency therefore focuses on fundamental needs and the distinction between needs and wants** (Hirsch et al. 2015).

Comfort is an interesting example of such problem. The particular attention paid to comfort in buildings stems from a social construction that, in Europe, can be traced back to the first half of the nineteenth century (Le Goff 1994). Indeed, at that time, the bourgeoisie and the aristocracy came to the idea that technical progress brought comfort, good taste, neatness, and body refinement. Comfort came in the shape of objects that relieved the drudgery of daily life, as well as water, gas, and electricity networks. Sufficiency is inevitably related to the level of comfort that is considered "normal", hence to the standards at a given time and a given place. But the definition of comfort can be very different from one social segment of the society to another, also questioning the issue of what should be considered as enough.

To move beyond this dilemma, Di Giulio and Fuchs (2014) have coined the concept of "sustainable consumption corridors". Rather than using the terminology of wants versus needs, they refer to the concept of "good life", with minimum and maximum needs, as well as natural and social maximums. Kate Raworth (2012) refers to a "doughnut model" that defines a "safe and socially

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just space in which humanity can thrive", lying between a "social foundation" where fundamental needs are fulfilled and an "environmental ceiling" that reflects planetary boundaries.

- Wellbeing

The definition that societies assign to wellbeing will have a direct influence on the paths they decide to pursue towards its enhancement, and these paths will inevitably have environmental implications. Brand (2017) argues that over the centuries, the improvement of wellbeing in capitalist economies has been considered through the lens of individual purchasing power rather than collective social outcomes. This stems directly from a specific understanding of wellbeing and has resulted in significant environmental impacts. Conceptualizations of wellbeing can be broadly classified as "hedonic" (pleasure-seeking) or "eudaimonic" (fulfilment-centred), respectively mirroring their lineage back to the Greek philosophers Epicurus and Aristotle (Ryan and Deci 2001).

The hedonic school of thought views wellbeing primarily as the maximization of pleasure (and the minimization of pain). Its major modern exponents are to be found in utilitarian neoclassical economic theory and in the field of research on subjective happiness (Layard 2010), with the World Happiness Report (Helliwell et al. 2016) its flagship publication.

By contrast, the eudaimonic school of thought views wellbeing as the capacity for humans to reach their highest potential within the framework of their society. The capabilities approach (Nussbaum 2015) has been implemented through the United Nations "Human Development Index". According to this approach, wellbeing can be described as the ability to flourish and fully engage in one's chosen lifestyle (Doyal and Gough 1991). Many researchers in the field of international development have grounded their studies in a eudaimonic understanding of wellbeing, focusing on the multiple dimensions of poverty and its impact on social inclusion. This poverty reduction emphasis leads to the identification and mitigation of deprivations in specific areas that are considered as vital for human development. Furthermore, by focusing on human needs fulfilment rather than individual preferences, eudaimonic wellbeing approaches hold the potential to explore alternative patterns of resource use, which may be consistent with higher limits of consumption.

1.2 Research questions and hypotheses

The hypotheses that have guided the present work are in line with the priorities established in FULFILL's literature review (why sufficiency is necessary and why sufficiency is desirable) and in the theoretical framework detailed above. In this piece of research, our objective is to explore the diversity of practices and profiles, to understand the motivations behind them and the needs they fulfil, as well as to address the varieties of sufficient lifestyles and the importance of social contexts. We have tried to go in-depth about why and how people do what they do, not to set out a precise account of their lifestyle's carbon footprint (for this, see T3.1.).

A specific focus on the impact on wellbeing is also considered, with a thorough investigation of how shifting to more sufficient practices may have both positive and negative impacts on daily life (Creutzig et al. 2022). The inclusion of a wide set of practices is also aimed at investigating how changing some practices may (or may not) have spillover effects in other domains of life, and at learning about the different barriers and constraints that may hinder the shift to more sufficient lifestyles.

The research questions we wish to answer are the following:

- **What are sufficiency-oriented practices** (What kind of social practices are associated with / allow for a sufficient lifestyle? What kind of needs does it address and what kind of purposes does it fulfil?)
- **How are sufficient practices adopted and implemented** (What was the adoption process and what were the barriers and enablers, and how do they relate to the personal biography? What were the turning points and disruptions that allowed for a change? What role does the social context play?)

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- **What are the impacts of sufficiency-oriented practices on daily life** (How does it impact daily life, reconfigure routines, and affect professional and private lives ? Are there rebound and spillover effects? How is the relationships to work and income transformed, if so? What are the effects on wellbeing, health, and the gendered division of work?)

2 Methodological approach

2.1 Empirical design

To investigate how "the formation of practices draws on knowledge that is distributed between people (bodies and minds), things and culturally grounded social structures" (Wilhite 2010), semi-structured interviews were conducted in six countries (France, Italy, Germany, Latvia, Denmark, and India) to research daily habits and their social and material contexts with both sufficiency-oriented communities and ordinary citizens. Indeed, one of the rationales for this part of the work was to investigate sufficiency through intentional communities, meaning initiatives and/or social networks that promote alternatives to mainstream practices. To that end, we relied on the screening of sufficiency-oriented initiatives performed at the beginning of WP4.

First, we tried to identify highly sufficient lifestyles existing in the social realm of practices and initiatives. In order to be specific rather than general with regard to the diversity of dimensions of sufficiency in lifestyles, we decided to derive the search for tangible initiatives from the key sufficiency levers and drivers identified in WP2, in order to narrow down the social practices we would be observing and to ensure comparability between countries.

T2.2. identified five key sectors for sufficiency (see table 1 below).

Sector	Levers	Examples of drivers
Mobility	Travelling less	Shorter distance trips, flying less
	Reduced motorised transportation	Modal shift, lighter and more shared vehicles
Housing	Less space-intensive living	Reducing and sharing residential and tertiary spaces
General consumption	Lower-tech lifestyles	Moderating the ownership and use of appliances and ICTs, increased product lifetime
Food	Changing diets	Less meat-based and industrialised food

Table 1. Key sufficiency areas identified in T2.2.

T2.3. further differentiated between sufficiency levers (defined as the nature of the service change), sufficiency drivers (quantifiable characterization of the accessibility of the service change to the population), sufficiency indicators (measurable characterization of the service change and/or its accessibility), and sufficiency policies and measures (actions to modify the ac-cessibility and desirability of the service change). The areas that have been identified as the most frequent in sufficiency-based pathways are identified in Table 2 below.

Area	Levers
Mobility	Reduced holiday trips (number and distance)
	Reduced professional trips
	Development of alternatives to cars
	Increased use of public transport
	Reduced daily trips (number and distance)
	Increased sharing of individual vehicles
	Reduced freight
	Reduced power and speed of vehicles
Housing	Reduced living spaces
	Increased sharing of existing spaces

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Appliances and products	Reduced appliance overuse and overequipment
	Reduced product purchase and increased lifetime
	Reduction in packaging
	Moderate use of ICT-based activities
Food	Reduced meat and dairy consumption
	Less carbon-intensive food
	Less food waste

Table 2. Key sufficiency levers identified in T2.3

The first step in the analysis was to determine which areas we could investigate through individual qualitative interviews about one's practices. Some of these levers are indeed not for individuals to decide on (e.g., reduced professional trips), while others have proven difficult to connect with existing communities and initiatives (e.g., moderate use of ICT-based activities, reduced appliance overuse).

All the different aspects of lifestyle were included in the in-depth interviews (see the "Data collection and analysis" section), but we decided to focus primarily on those areas of sufficiency in which initiatives and intentional communities had been identified, notably in WP4 (see D4.1). These include:

- housing: through the drivers of reduced living space sizes (e.g., tiny houses) and increased sharing of existing spaces (e.g., shared housing);
- general consumption: through reduced product purchase and increased lifetime of products (e.g,. repair cafés, low-tech labs, and upcycling initiatives), reduction in packaging (zero waste initiatives);
- food: through less carbon-intensive food and a decrease in food waste.
- ecovillages: a more cross-cutting perspective on sufficiency has also been included, with some initiatives covering several aspects of lifestyles. This is the case, for example, of ecovillages. Ecovillages represent more topics, as housing, (buildings, energy and water consumption), food and farming, consumption in general, and mobility

Because of the choice made in the project's theoretical framework to move from a "modal shift" perspective to an "accessibility" perspective, which implies a shift from an individual, micro-level perspective to a policy and planning perspective on transportation, we have not focused on citizen-based initiatives related to transportation (e.g., carpooling). Transportation studies are a field of research distinct from lifestyle and consumption studies, and that builds on literature, methodological tools and research questions that are different from those we investigate in this deliverable. It thus seemed unfit to the methodology we use here. Mobility, however, is not overlooked as a topic in this deliverable, since it is included in the accounts of daily life and habits of the selected respondents and analysed, both for initiative and panel respondents.

The selection criteria for the intentional communities and initiatives selected were the following:

- The initiative has a sufficiency element as an important part of the social practices promoted or implemented;
- The initiative is representative of a larger number of similar initiatives in the country;
- The initiatives are diverse, so they represent different types of sufficiency in their practices (housing, consumption, food);
- The people in the initiative form a cluster that share identical practices related to sufficiency;
- The participants' profiles are as diverse as possible in terms of location (rural / urban), age, gender, and social background. In that respect, a specific focus was placed at the beginning of the screening process on initiatives involving low-income households, with the target of including at least one such initiative in the panel for each country. Unfortunately, it has proven difficult for most countries to meet this target, with the exception of France (low-

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tech lab working in a deprived neighbourhood). **This is however a first important empirical result of our work: sufficiency-oriented communities and initiatives are generally not oriented towards low-income households, and conversely, with few exceptions, social actors working with low-income households appear to not refer to, or identify with sufficiency.**

To counterbalance this lack of social representativeness and adding to the in-depth investigation of sufficient lifestyles through recruitment in sufficiency-oriented initiatives, we investigated how ordinary people reflect on sufficiency by including a group of low-income households.

In addition, the context of the energy crisis during the winter of 2022-2023 offered the opportunity to shed light on the impact and on the potential changes that might have been implemented to cope with rising energy prices within different income categories (see the "Recruitment strategy" section). This double focus was meant to offer another perspective on lifestyle change and to give an insight into the issue of voluntary vs. forced dimensions of sufficiency behaviours, but also to provide some evidence on the "floor" dimension of sufficiency, i.e., the basic energy needs that have to be fulfilled in order to provide a sufficient level of comfort and wellbeing for all.

2.2 Recruitment strategy

2.2.1 Intentional communities

While the empirical design was decided on collectively within the FULFILL consortium, its transposition in various national contexts inevitably led to some local variation between countries. Finding the exact same initiatives in all countries was challenging, and then, among the preselection, finding initiatives that agreed to participate in the project and allowed us to recruit participants for the interviews within the required timeline was not always possible. In addition, the variety of initiatives existing differs from one country to another. The table below summarises the intentional communities that were studied in all six countries.

	Housing	**Food**	**Goods**	**Ecovillages**
Denmark			Repair café	Ecovillages
France	Tiny houses Cohousing	Community-supported agriculture	Zero Waste Carbon Conversations Low-tech lab	
Germany	Tiny houses Cohousing	Community-supported agriculture Foodsharing		Ecovillage
Italy	Cohousing		Renting/sharing tableware Fair on critical consumption	Ecovillages
Latvia		Community-supported agriculture	Freecycling	Ecovillages
India				Ecovillage

Table 3. Intentional communities selected for the recruitment of interviewees in the six countries

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In the section below, we explain the methodology and recruitment process in each country with regard to the selection of respondents from intentional communities.

- Denmark

Nine Danish Initiatives were chosen for the Work Package 4 (WP4). In Denmark, three eco-communities, so-called ecovillages, were chosen. They recognise themselves as member of the Danish ecovillage network, which has about 30+ eco-communities as members. INFORSE had previous contact with some of them from when the FULFILL project first began, as they had written Letters of Support. We searched for contact persons on the websites of the rest of the initiatives and succeeded in reaching them this way. These nine were all invited to participate in the WP4 workshop.

In WP3, the focus was set on four initiatives in which we recruited people for the lifestyle interviews. These were three eco-villages, each with different profiles, and one repair café, giving us four clusters. These were chosen based on which initiatives were likely to have members/users with a strong connection to the initiative or otherwise have a highly sufficient lifestyle.

After the initiatives had agreed to participate in the project, the contact persons from each initiative were given a list of criteria and asked to find suitable interviewees: both men and women of different ages. They then sent us the contact information for each of these people. We emailed them, presenting the FULFILL project and the aim and theme of the interview, and set a date and a time. We decided that the most convenient way to do this was for our researcher to visit each of the initiatives and conduct interviews in person. This way, 17 interviews were conducted.

- France

In France, there is a long history of activism around the word "*sobriété*" (sufficiency), which explains why many initiatives refer to this term and could be included in the study. We decided to focus on less researched areas of this ecosystem of initiatives and to concentrate on housing, general consumption, and cross-cutting initiatives. One ecovillage was reached out to and initially agreed to participate, but eventually pulled out. We did not include another ecovillage because, in the meantime, enough interviews with other initiatives had been conducted.

With regard to housing, people living in tiny houses were recruited through local associations. People living in shared housing were contacted through négaWatt's own network and contacts. These included different forms of shared housing, from the wide renovation project to apartment-sharing.

Food was originally not meant to be the focus of our research. Nevertheless, we discovered in the process of the research that many of our respondents were part of a community-supported agriculture initiative and that it was an important aspect of their relationship to sufficiency. We thus decided to include it in our panel of initiatives, and we reached out to people through négaWatt's own network and contacts.

With regard to general consumption, we reached out to a zero-waste community that is a recent and quite well-known initiative in France. An initiative aiming at creating a community to share tips and support for a lower-carbon lifestyle was also contacted, and three participants agreed to be interviewed.

Finally, we reached out to a low-tech lab organizing workshops in underprivileged neighbourhoods. The volunteers from the association recruited voluntary participants for us. We conducted 23 interviews in total with 25 people (some interviews were conducted with two people).

- Germany

The initiatives were selected based on theme, location, and size. The topics that were decided on were housing, food, and ecovillages.

Germany has the highest rental rate in the European Union and at the same time is experiencing a shortage of affordable housing, especially regarding small apartments in large cities. This has led to a sharp rise in house prices. At the same time, the buildings sector is still responsible for

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a large share of greenhouse gas emissions in Germany. Against this backdrop, sufficiency in housing was selected as one of the most relevant topics.

Although global meat production is still increasing, per capita meat consumption is decreasing in the EU and in Germany. However, Germany is the second largest producer and exporter of meat in the EU, after France, and it has the highest income from slaughtering and meat processing (Statista 2023a; Eurostat 2023). In 2021, Germany had the highest per capita meat consumption in the EU, with pork accounting for the largest share (Statista 2023b). At the same time, there is a shift towards a more plant-based diet and a focus on regional food production. In addition, the reduction of food waste has become more important and more publicly discussed as the legal framework in Germany makes it more difficult to distribute food beyond its sell-by date, while many people cannot afford the food they need (Heinrich Böll Stiftung and TMG Research 2021). Given these developments, looking at sufficiency in the food sector was deemed highly relevant.

Ecovillages were chosen because of their cross-cutting nature, generally addressing housing, food, and mobility in one way or another.

Recruitment was different for the different clusters. In the housing projects, a first contact was already known to the interviewer at Fraunhofer ISI. On site, the interviewer was able to recruit another interviewee. Contact with the other housing project was established through an intermediate contact.

In order to find respondents in the ecovillage, tiny house villages, food sharing initiative and community-supported agriculture (CSA), various possible initiatives were identified through desk research. For all initiatives, possible contacts, i.e., organisers or official contacts mentioned on websites, were identified with email addresses and telephone numbers. Where possible, an initial contact was made by telephone to establish whether there was any interest in participating in the project and how best to contact potential interviewees. Contacts were usually people in an organizational position who could distribute the email with the project flyer and contextual information. Some interviewees were recruited on site by just asking people if they were interested in participating or after establishing contact through a previous interviewee. With this strategy, a total of nineteen interviews could be conducted.

- Italy

Since Italy is a large and highly diversified country, it was not possible to find initiatives that are representative of the entire country. However, the research aimed to find a reasonable balance between feasibility and diversity. Among the main categories we agreed upon in the empirical design, we checked first for the presence of local initiatives to perform in-person interviews, and then, where necessary, for that of national ones.

With regard to ecovillages, a selection of potential ecovillages that could have a stronger ecological driver than others (more spirituality-oriented) was obtained from the Italian Network of Ecological Villages, which includes almost forty ecovillages. Two ecovillages agreed to participate, and interviews were conducted with participants in-person and one over the phone.

For cohousing, initial contacts were made through cohousing networks. Two cohousing initiatives agreed to participate (one private and one public). One additional respondent was recruited through a networking workshop aimed at people who want to create a cohousing project.

We also took an interest in an initiative for renting/sharing tableware. This nationwide initiative revolves around renting environmentally friendly, washable crockery equipment needed when organizing a party. The association selected the participants.

Finally, we recruited participants through a trade fair about organic, zero-km, critical fashion, sustainable mobility, and responsible tourism. The association that organised this event was contacted and circulated the request among the participants, three of whom agreed to be interviewed. In total, 18 interviews were conducted.

- Latvia

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Sufficiency initiatives aim to promote sustainable consumption and lifestyles by encouraging individuals to reduce their overall consumption and prioritise sustainable choices in their daily lives. The initiatives chosen focus on reducing resource consumption and promoting sustainable food, mobility, and housing. The rationale for choosing initiatives from these domains lies in the fact that these domains are those with the largest environmental impacts. Sufficiency initiatives offer a promising solution to this challenge by promoting a lifestyle that emphasises quality of life over material possessions and encourages people to live within the limits of the planet's natural resources. These initiatives not only benefit the environment, but they also have social and economic benefits such as reducing inequalities, improving public health, and promoting community resilience. We identified nineteen sufficiency initiatives in Latvia. From these initiatives, we chose four to be covered by this task. In this deliverable, we focus on freecycling (two initiatives), a direct purchasing initiative, and an ecovillage.

Several ecovillages of different types have developed in Latvia over the last thirty years, hosting a variety of self-sufficiency and permaculture activists. While they are of relatively small size, some members of ecovillages are popular speakers and organisers of events on sustainability in Latvia, while others have an influence on spiritual matters, especially in the context of neopaganism. We contacted the founders and active participants of three ecovillages in Latvia. Overall, 15 interviews were conducted.

- India

In India, a broad-list of 18 communities/Initiatives were subjected to a preliminary evaluation (through cBalance's general knowledge about them) along the degrees of diversity (low, medium, high) across the following four dimensions: age distribution, socio-economic class distribution, gender distribution and religious distribution. In a second step, communities were listed in descending order of their combined ranks (i.e, total scores across the above diversity dimensions) and were then composed into ordered combinations of six selections (as the goal was to short list six initiatives for subsequent stages of engagement in the research). These combinations were then evaluated for the diversity amongst the sample size in terms of geographical locations, sufficiency sectors, social economic class of members and scale of community operations. The sample selected was then contacted and in the end, two different avenues for research have been selected: one with affluent urban dwellers shifting for a more rural and sufficient lifestyle (ecovillage), and one with underprivileged urban workers living in an informal settlement (that we have included in the panel respondents section of this report). The aim of this choice was to investigate both the floor and ceiling of sufficiency and of "sufficiency corridors" (Spengler 2016, Fuchs et al. 2021), in the context of extreme socio-economic differences. The ecovillage has been reached through cBalance's own network. On receiving confirmation about the community's willingness to participate, the preferred criteria for interviewee identification i.e., a balance of male and female respondents spanning diverse age groups and economic classes was shared with a community representative to identify potential respondents. The researcher then showed up on field and interviewed participants based on their availability on campus after identifying possible dates that worked for participants. In the table below, we summarise the number of respondents interviewed per country, type of initiative, gender, and location.

	Italy	France	Denmark	Latvia	Germany	India
By type of initiative						
Housing	6	9	-	-	8	-
Food	-	4	-	4	9	-
Goods	6	12	5	4	-	-
Ecovillages	6	-	12	3	2	9
By gender						
Men	9	10	8	3	8	5
Women	9	15	9	8	11	4
By location						

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Rural areas	7	4	2	3	1	9
Small and medium-sized city	6	18	12	1	5	-
Urban centre	5	3	3	7	13	-
By age group						
18-30	3	3	1	-	3	-
31-45	4	14	5	8	8	3
46-60	6	3	3	3	7	3
61 and over	5	5	8	-	1	3
Total	18	25	17	11	19	9

Table 4. Number of interviews per country, sector, gender, location and age group.

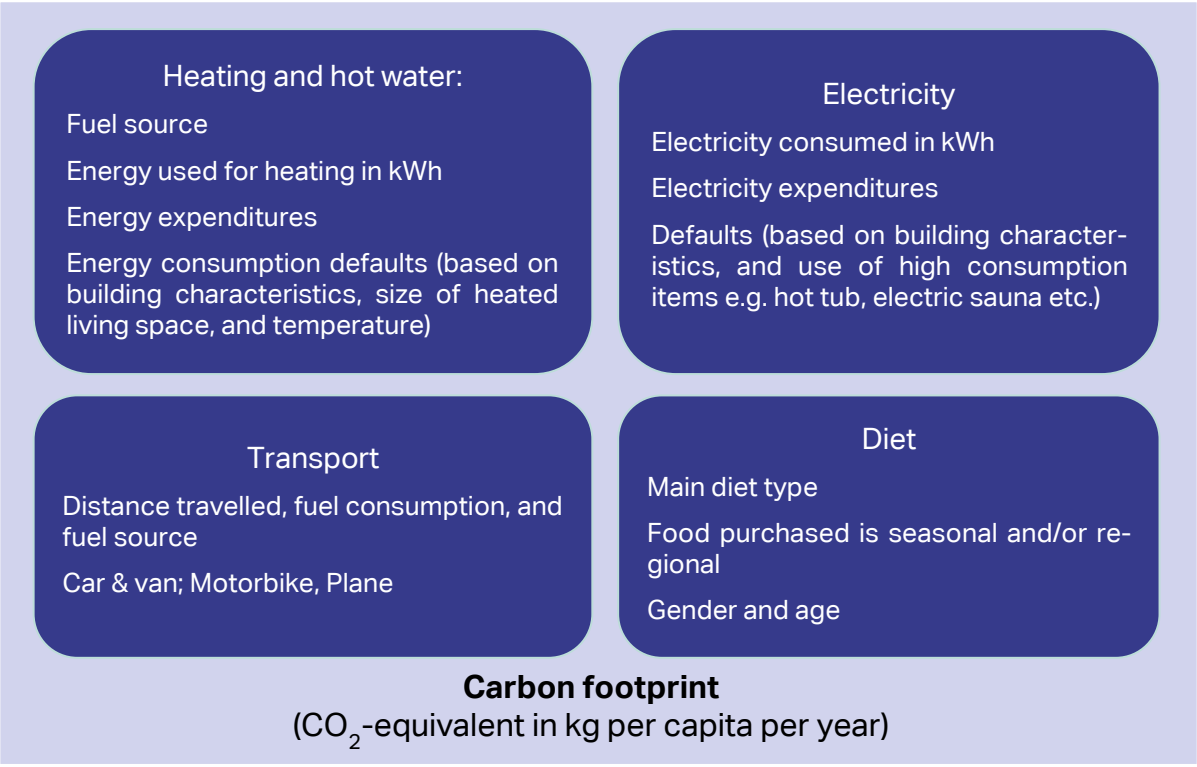
2.2.2 Panel respondents

In this section, we describe how we selected respondents for the interviews from the panel used for quantitative research (i.e., "ordinary people", in the sense that they do not belong to an initiative). In Denmark, France, Germany, Italy, and Latvia, ten interviews were conducted in each country with respondents displaying an "average" carbon footprint (see calculation mode in next paragraph). Within this group of "average emitters", which corresponds to the majority of the population in each country, respondents were selected so as to reflect a diversity according to gender and income group.

2.2.2.1 Carbon footprint calculation method

In the following, a brief description is provided of how the carbon footprint has been estimated at the individual level. A detailed description can be found in the Deliverable D3.1. Our carbon footprint calculator estimates annual per-capita greenhouse gas emissions related to electricity consumption, thermal heating, transportation, and diet based on input data for 2021, as displayed in **Fehler! Verweisquelle konnte nicht gefunden werden.**.

Figure 1 Carbon Footprint Activities and overview of relevant variables



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- Heating and hot water

Participants were asked to provide their main fuel type used for heating in 2021. If participants didn't know how their dwelling was heated or the information was missing, the most frequent in that country was used (natural gas in Germany and Italy, biomass in Latvia, electricity in France and district heating in Denmark).

Respondents had the possibility to state if they had a secondary heating system, and if so, which fuel source was used. It was assumed that the secondary heating system corresponded to 30% of their heating needs and their carbon footprint for heating was thus adjusted accordingly.

Energy consumption related to heating was estimated for the participant's household either using the energy consumption for heating in 2021 provided by participants based on their bills or on estimates for natural gas (in kWh or m^3) or electricity (in kWh)[2].

If this information was not available, we used participants' heating expenditures (based on bills or estimates) in 2021. To estimate energy consumption, heating expenditures were divided by the average cost of electricity, heating oil, and natural gas for household consumers in 2021 in the respective country.

Finally, if neither billing-data nor estimates on energy consumption and heating expenditures were available, heating demand was estimated based on the size of the heated living space in m^2, the building type (single family house, terraced house, multi-family or apartment block), building age, types of retrofitting measures, use of solar thermal energy, and the temperature they typically heated their main living room to in 2021. If hot water consumption was not included as part of respondent's heating system, CO_{2eq}-emissions linked to heating hot water were calculated using the energy source, the relevant emission factor, and the assumption that a person uses 500 kWh energy per year for hot water.

If respondents stated that they used no heating in 2021, then they were attributed zero emissions for heating.

- Transport

For transport-related emissions, we distinguished between distances travelled by private cars and motorcycles. This includes travelling as a passenger and driver, trips to and from work. Business trips were excluded from the questionnaire - and thus the analysis.

For *private car use* we calculated the associated CO_{2eq}-emissions using the (estimated) total distance travelled by the respondent in 2021, the average rate of occupancy for each country, and the fuel consumption and fuel type of the car respondents used the most. If participants did not know the distances they travelled by car, we used defaults using data on national averages that distinguish distances travelled by gender and age.

To calculate the CO_{2eq}-emissions related with *motorcycle* use we applied the same logic as for private car use.

- Electricity consumption

Participants were asked to report based on bills or estimate as precisely as possible household electricity consumption in 2021 in kWh. If participants did not know their electricity consumption, we asked them for the amount paid for electricity in 2021. In this case, electricity consumption was estimated by dividing the electricity expenditures by the national average electricity prices for households[3].

[2] Only participants who heated using electricity and natural gas were asked their consumption as participants are more likely to know this information for these fuel sources.

[3] https://ec.europa.eu/eurostat/databrowser/view/NRG_PC_204_C__custom_3540637/default/table?lang=en.

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For participants who neither knew their electricity consumption nor their electricity bill we used default values distinguishing by household size, building type, and whether they possessed and used items with very high electricity consumption in 2021 (air conditioner, swimming pool, electric sauna, waterbed, hot tub, aquarium).

Participants also stated whether they generated electricity from a rooftop PV (photovoltaic) or plug-in PV installation. Electricity generated from these sources was deducted from the total household electricity consumption, which could potentially result in negative values.

To calculate CO_{2eq}-emissions pertaining to electricity consumption, we took into account whether households subscribed to a green electricity tariff. In this case, electricity-related CO_{2eq}-emissions were set to zero for the length of time that they had a green electricity tariff.[4] We calculated the per-capita electricity consumption by dividing the household electricity consumption by the number of household members.

Electricity used to charge electric cars at home, heating and for hot water use was subtracted if applicable.

We then calculated electricity-related CO_{2eq}-emissions per household by multiplying (net) electricity consumption by the national emission intensity for electricity.

- Diet

To calculate the diet-related CO_{2eq}-emissions, we asked participants to best characterise their typical diet distinguishing between meat-based, balanced/mixed, low-meat, vegetarian (1310 kg CO_{2eq}), pescitarians (1310 kg CO_{2eq}) and vegan diets.

The responses were adjusted according to the regionality, and seasonality of the diet as reported by participants. Finally, the CO_{2eq}-emission level for diet was adjusted by gender and age.

2.2.2.2 Selection of individuals for in-depth interviews

For the interviews, we selected a sub-sample of individuals who had an average carbon footprint in each activity from the data sample used for T3.1.

We started by calculating the carbon footprint (in CO_{2eq} kg) for each survey participant for each activity (heating and hot water, electricity, transport, and diet).

Second, we calculated the 20^{th} and 80^{th} percentiles for each activity and for each country, thus allowing us to identify the middle 60%.

Third, we identified individuals whose carbon footprint for each activity was between these percentiles, and thus whose carbon footprint belonged to the middle 60% in all sectors.

Finally, the identified individuals were selected so as to ensure that they varied by gender and household income level. Perfect gender balance could not be achieved due to the limited number of men from lower income household categories who accepted to take an interview. In the table below, we summarise the number of respondents interviewed per country, gender and income groups. For India, the methodology of data collection was different, because we could not access the panel data (see details in next paragraph).

4 Whether green electricity tariffs actually lead to lower CO_{2eq} emissions is contested. First, in terms of physical flows, unless the power plants that are producing electricity on the grid at the time electricity is used happens to be a renewable plant, electricity demand of a green tariff customer causes emissions. Second, total emissions of installations governed by the EU Emissions Trading System (EU ETS) are fixed. Hence, because of the so-called waterbed effect, any emission reductions by a fossil-fuelled power plant will be offset by an increase in emissions of equivalent magnitude by other installations covered by the EU ETS (e.g. Perino et al. (2019)).

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	Income category 1 (lowest)		Income category 2		Income category 3		Income category 4		Income category 5 (highest)	
Gender	M	F	M	F	M	F	M	F	M	F
Denmark	1	1	1	1	2	1	1	2	Not in the sample	
France	0	2	1	1	1	1	1	1	1	1
Germany	1	1	1	1	1	1	0	0	1	2
Italy	1	1	1	1	1	1	2	1	1	1
Latvia	0	2	2	0	1	1	1	1	1	1
India	2	5								
Total	5	12	6	4	6	5	5	4	5	5

Table 5. Total number of interviewees per country, gender and income groups.

2.3 Data collection and analysis

The data analysis of the interviews (initiative participants and survey panelists) is based on interview summaries including the main points of each interview with regard to the themes of the interview guide[5]. Then, each group of interviewees pertaining to a given initiative was analysed together by national partners in what we called in the project a "cluster", e.g., people who share the same sufficiency practice. The purpose of this method was to analyze the differences between various areas of lifestyles, and to give an insight into whether participating in one practice of sufficiency in a particular area of daily life is related to sufficient practices in other areas. The purpose was also to investigate the individual motivations and levers for each type of alternative practice, which can be different from one sector to another.

A total of 103 interviews were conducted across the six countries, both face-to-face and virtually. They lasted about 1 hour and were conducted by country partners, in their national languages (for more details about the respondents and the questions asked, see appendix).

For the panel respondents, a different interview guide was created, based on opinions on sufficiency, climate change, and the energy crisis, and on daily habits with regard to energy consumption[6]. As the panel respondents were recruited through a market research company for the purposes of an online survey (see D3.1.), we conducted these interviews through videoconference or over the phone. A total of 47 interviews were conducted (for more details about the individual respondents and the questions asked, see appendix).

A different approach has been implemented for India. Indeed, given the inner diversity and the important discrepancies between lifestyles within this country, it did not seem relevant to apply the same rationale than in European countries and to gather a few interviewees per income category, especially since we did not have panel data available at the time of the fieldwork in this country. Rather, we sought to complement the European data with empirical insights on categories of population that were not attainable through the market research company in Europe, i.e., people that are actually *below* the carbon budgets to reach the net-0 trajectory. Indeed, the

[5] See interview guide in Appendix 1 and list of interviewees in Appendix 2

[6] See interview guide in Appendix 3 and list of interviewees in Appendix 4

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concept of sufficiency is not only about reducing the consumption that exceeds the planetary boundaries, but also about fulfilling the basic needs and provide wellbeing for all. This includes increasing the consumption of some groups that are currently not able to meet those needs. We thus took the opportunity of having India in our research to include one case study of such groups in our sample. This allowed us to investigate more deeply the idea of sufficiency as "minimum" and its relationships with wellbeing from a qualitative point of view.

In order to achieve this goal, fieldwork has been conducted with seven inhabitants of an underprivileged neighbourhood in the State of Maharashtra by our local partner cBalance. This neighbourhood has been part of one of our partners' previous project, aimed at addressing thermal comfort-based injustices in informal settlements. Respondents were identified based on the selection criteria i.e., representation of male and female respondents spanning diverse age groups and household compositions. Five potential interviewees were informed about the research through a telephonic conversation. Two additional respondents were identified through snowball sampling during a conversation via telephone. Once the interviewees consented to participate in the research, convenient days and timeslots for the interviews were determined after discussion with them. When the researcher showed up on field one respondent backed out from participating while one respondent was unavailable. Three respondents who were part of the partner households for the project mentioned previously were approached directly on field and their interviews were conducted after they consented to participate in the same.

For all countries, the data gathered through the interviews were then analysed in two different groups: the lower income group (1-2 + India) and the higher income group (3-4-5). The interviews from the Indian underprivileged neighbourhood have been analysed together with the low-income panel group.

In the following sections of this deliverable, we will first focus on respondents recruited in the initiatives, cluster per cluster (Housing, Food, Goods, and Ecovillages). We then turn to panel respondents, by analysing first the lower-income group and then the higher-income group. In a last section, we investigate cross-cutting topics by building on the results of all three groups.

Summary of the results section

Section 3. In-depth analysis of highly sufficient lifestyles

3.1 Housing

3.2 Food

3.3 Goods

3.4 Ecovillages

3.5 Results of the carbon calculator

Section 4. Average lifestyles and the energy and climate crisis

4.1 Low-income households

4.2 High-income households

Section 5. Comparative analysis

5.1 Defining fundamental needs

5.2 Social class and stratification aspects

5.3 Gender aspects

5.4 Cultural aspects

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3 Highly sufficient lifestyles

In this section, we describe the motivations to enroll in an initiative, the expected benefits and needs addressed, the change of habits produced, the health, wellbeing, and quality of life impacts, the rebound and spillover effects and the adoption and diffusion mechanisms we observed based on our interviews, in the four sectors under study (housing, food, miscellaneous consumption, and ecovillages).

3.1 Housing

With regard to housing, two different kinds of initiatives were considered. The first one is cohousing, which we define as the fact of sharing a flat or a house with persons who are not relatives nor students, including common spaces and private spaces. Cohousing takes different forms in different countries, which we will describe thoroughly in the description of initiatives below. The second one is tiny houses on wheels (THOW) which is associated with the "tiny house movement". THOWs are defined by their size, which derive from road norms and not housing norms. They can be a maximum of 4m high, 2.55m wide, and 6m long and cannot exceed 3.5T in weight. Tiny houses are generally between 15 and 25m^2, which is far below the average per capita living space in Europe.

3.1.1 Description of the initiatives studied

In Italy, 6 persons have been interviewed in 3 different cohousing projects. 4 people living in a co-housing condo set up in 2013 have been recruited for in-depth interviews. 3 out of the 4 interviewees lived there from the beginning, one for the last three years. They were all present in the design and implementation phase of the building. The initiative was private, through a cooperative. 2 people are a couple, one is a sole parent living with her disabled daughter, and another ones lives alone. All own their apartments. The cohousing is set in a peripheral location. It comprises 14 flats (13 for private use and 1 for social use), and several common spaces, which represent approximately 12% of the total built-up area. It includes specific regulation for cohousing to be community-oriented. Another interview with a 42-years-old woman has been conducted in a cohousing consisting of a 5-floor residence in the centre of an important city, with18 rental flats to live in, 49 potential inhabitants, 5 common spaces for meetings, parties, activities, workshops, 1 participatory design process to share living. A 29-years-old woman who always lived in shared appartements (renting a room) and participated to a workshop to get in contact with other local people to evaluate the possibility to create a co-housing was also recruited for an interview.

In Germany, 4 persons have been interviewed in 2 different cohousing projects. First, 3 persons (one 29-years-old woman living alone, one 36-years-old man living with his wife and two children, one 64-years-old women living with three other women) have been recruited in an initiative for self-managed, ecological, communal, and solidary living. More than 80 people aged between 1 and 68 years live there: singles, couples, families with children, and cooperative living groups. Two associations are shareholders: one with all the active tenants, and a second open to tenants and all those who wish to support. The aim of the associations is to prevent the house from being sold or subject to property speculation. The tenants are only indirect owners of the project property through their membership of the association. The rents are adapted to the financial situation of the members. The property (1.5 houses) was bought in 2017 with a lot of direct loans (from members and supporters), bank loans and funding. Second, one 32 years-old man living with 4 other adults (2 women and 3 men) in a communal and self-managed cohousing was recruited for an interview. It is home to a group of around 70 people of different ages and lifestyles. Two associations are shareholders, this aims to ensure low rents in the long term by not being able to sell or privatise the property. The initiative is financed through a combination of direct and bank loans, which doesn't require any equity from the residents.

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In France, 6 persons have been interviewed in different contexts of small-scale private cohousings. A 70-years-old couple who just moved in a new shared housing project, after having lived over 10 years in cohousing has been interviewed. The shared house comprises 8 flats, common spaces, and a big shared garden in a medium-sized town. The group has bought the house together and has organised its renovation, so as to be able to create 8 separate flats for individuals and families who own shares of the house that are proportionate to the square meters of their flats. In addition 3 other individuals have been interviewed in different contexts : a 30-years-old man who lives in a shared house with his partner and a family of 4, a 75-years-old couple sharing their house with a family of refugees from Irak, and a 36-years-old woman with her partner and their baby, who bought a flat in a cohousing project with another family through a co-operative specialised in the funding of eco-living projects, and who lent them the money.

THOWs have been investigated in 2 countries, Germany and France. In both countries, tiny houses are a rather recent phenomenon and remain anecdotical in terms of absolute numbers but benefit from a growing interest. In Germany, tiny houses have been investigated in two "villages" dedicated to this kind of housing. One of them is situated next to a tram station on a campsite where there are currently 15 tiny houses. An association is responsible for the allocation of plots for new tiny houses, public relations work to communicate with interested parties and local authorities, as well as for regular meetings with members. To live in a tiny house on the campsite, you must be a member of the association. The second tiny house village is a pilot project initiated by private developers. They reached an agreement with the local authorities to allow the use of the area to be used for tiny houses and then allocated plots to interested parties. There are 6 plots on the site, 5 households live there. In one case, two tiny houses are joined together to make room for a family of 3. 4 persons have been interviewed (2 men and 2 women, ranging from 25 to 53 years old, 3 single persons and 1 living in couple with 1 kid).

In France, tiny houses are considered a form of "reversible housing", like mobile homes and caravans. This means that they theoretically can't stay at the same place more than 3 months in a row and can't be declared as a primary residence. For this reason, no tiny houses ecovillages exist except for some municipality-led initiatives that use it as temporary and transitional housing for vulnerable populations. The investigated initiative is a non-profit organisation that helps self-builders to achieve their projects of tiny house construction. The community provides support, exchanges tips on self-building a tiny house, and advocates for a legalisation of this type of housing. The focus is set on self-building (vs. building for selling), using reused and ecological materials. The place is linked with a non-profit material library providing easy access to re-used materials. The presence of a wood factory nearby also turned the place into the first "hub" for self-built tiny houses in France. 4 persons were interviewed (2 men and 2 women, ranging from 37 to 43 years old, 3 living in couple without children and one living in couple with 1 kid). This last person no longer lives in a tiny house, but was included in the study because of his experience and the opportunity to know more about the reasons why he quit this lifestyle.

3.1.2 Goals, values, role of sufficiency in the housing initiatives

In cohousing projects in France, Germany and Italy, sufficiency is addressed through the reduction of living space but the initiatives do not explicitly talk about sufficiency. Energy sufficiency is also addressed with frequent investment in renovation work, energy production, water recovery system, etc. Social harmony and sociability appear to be more important than ecological concerns with regard to cohousing. However, people involved in such projects often have ecological concerns and the fact of pooling financial resources through collective acquisition facilitates the implementation of ambitious renovation work and/or high-quality construction.

In tiny houses, sufficiency is addressed more directly through the importance of the control and minimization of resource use, which is often compelled by this kind of housing, both because of the very limited space and because of the fact of living off-grid. In this respect, living in a tiny house really amounts to what Vannini and Taggart call "onerous consumption" (Vannini and Taggart, 2016). Onerous consumption leads to greater conservation of resources, the authors say, because of the personal involvement that is necessary to install and run autonomous systems. This is particularly true in the case of France, because of tiny houses being self-built.

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3.1.3 Motivations and needs addressed

In the cohousing projects the participation of the respondents varies greatly, from the communitarian lifestyle to collective housing with rather limited shared spaces such as a garden. This fosters very different levels of personal involvement. Some participants are engaged in the creation of their own cohousing project, with the desire of living together: "*Everything started thinking of how we could create a building that would meet the expectations of each of us. And we realised that together we can go much further than alone*", explains a participant (man, 73, Italy).

Community is an important motivation for many participants. This community can refer to the ideal of a different lifestyle, with a transformative element:

"It is a desire of working on the community life and on living differently"
(Man, 41, France),

"*I was convinced that the possibility of living close to others would allow us to know our potential better and also to make it available to other people. It would have allowed us to live better, despite the dominant culture*"
(Woman, 73, Italy).

"*Living collectively is part of the solution to build a more solid society*"
(Woman, 29, Italy).

But besides community as a project of alternative lifestyle, the interest for social bonding and daily sociality is also put forward by several participants: living in a shared place allows "*to find connections*" (man, 36, Germany), especially with like-minded individuals. Belonging to a community project also allows for multiple opportunities of sharing resources and support. For example, elderly people find resources to age at home (woman, 73, Italy and couple, 75, France). It also brings about amenities which would not be accessible for single households, and cheaper rents. As a 29 years-old woman from Germany explains about a cohousing project she joined, "*I was flashed and impressed by everything that is possible here, and what can be done*".

The expected benefits of cohousing are thus community building, social bonding but also the opportunity to access affordable housing. This dimension of affordability is more present in the German cases, where initiatives also display the objective of fighting against property speculation and providing affordable rents in cities. In about a third of cases, the desire to live in a more environmentally sustainable way is clearly expressed: "*It makes it much easier to live in a more resource-conserving, ecological or grandchild-friendly way*" says a participant (man, 36, Germany). The main needs addressed by cohousing are first and foremost *empathy/sharing,* exemplified by the importance of the community, and less predominantly *meaning* (in a third of the cases), as well as *security* in the fact of providing rather affordable housing and social support.

Living in a tiny house, on the other hand, is a very committing and demanding lifestyle. However, due to the growing number of single households, this new kind of housing seems to meet a demand for smaller houses and particular situations. Tiny houses offer the possibility of owning a house at a reasonable cost, for single individuals who would otherwise not be able to access property. Indeed, almost all our interviewees are single individuals or couples, and affordability is a central motive for choosing this kind of housing. The fact of being able to design the house according to one's needs, and to access amenities that are usually reserved to upper-class housings (such as a big garden, beautiful views…) are also central.

The financial aspect is predominant, with the high renting costs France and Germany making it particularly difficult to access housing, as a tiny house owner explains:

"It's a lot of people in their thirties, who want to settle, to get out from the rental system and to access property without the 25-years loan"
(Woman, 37, France).

Some younger respondents are also attracted by the possibility of living everywhere because the house is on wheels. For the young active entering the labour market and subject to a lot of geographical mobility, this is particularly interesting. For example, a French owner of a tiny house explains that he could follow his partner during her studies, by moving the tiny house close to

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where she was. The main needs addressed by tiny houses, thus, are *freedom/autonomy* and *safety* by the fact of providing affordable and mobile housing.

3.1.4 Change of habits and impacts

In the case of cohousing, change of habits refer mainly to the collective organization of certain tasks (including the management of the project itself) and to the personal "ways of being" and acting inside a collective structure: *"Before living in a shared house, I was impatient. When you're 7 to decide, you soon learn to let it go, it makes you change in a good way"*, explains a participant (woman, 38, France). There are a lot of learning processes mentioned: learning how to live together, how to build common projects, how to decide in a group, etc. These learning processes provide more agency and control of inhabitants over their housing conditions since it allows them to find solutions collectively. "*I can, yes, co-shape, co-decide how I want to live*", summarises a participant (woman, 29, Germany). All in all, being in a collective appears to be a facilitator for change in general: "*it's easier to change collectively*", says a participant (man, 40, France).

Regarding tiny houses, the change is less social (it is still an individual kind of housing) than physical and material. Indeed, living in such a small space requires many skills and know-hows that the community shares, from tricks to spare water to smart design to gain more storing space. The weight of the house is also an important limit, thus pushing towards lighter solutions (for example, catamaran nets are widely used to lighten the weight of mezzanines). In addition, the fact of having designed the house by oneself pushes towards questioning the needs. As a respondent states, "*Everything must be useful for sure. If there is a doubt, it means you don't need it*" (woman, 25, France).

- Health and wellbeing

In cohousing projects, several respondents, especially the older ones, have referred to an increase of the feeling of security provided by the collective. Cohousing bring support in the ageing process (woman, 73, Italy and couple, 75, France) and for people with disabilities (woman, 67, Italy and man, 40, France). This sense of protection comes from the feeling of easy-to-find support in case of need. *"Everything is simple. For example, if I need my truck to be fixed, I can ask around and someone will help me"*, explains a participant (man, 41, France). The creation of meaningful relationships, protection from isolation especially for single participants and the sense of belonging are also factors of wellbeing.

In the case of tiny houses, many respondents reported an improved level of comfort when compared to regular housing. When they are well insulated, tiny houses are easy to heat. They often have big windows with a lot of light. *"I've never experienced such a comfort. I'm never cold and it is also healthier. In my previous flats I was heating a lot and I was always cold"* (woman, 25, France). Indeed, building small allows for accessing better materials, as a respondent says: "*I wouldn't have been able to afford such high-quality materials if I had to build a normal house"* (Man, 36, France). Tiny house owners thus often feel like they prefer to be in a smaller, but more comfortable space, than what they would be able to afford on the regular housing market.

Affordability also relieves many respondents from financial stress. Being free from paying a rent or a loan allows for choosing more risky career options (such as artist), or to work less:

"Living in a tiny house allows me to be less of a slave to work. To have the choice of working or not, of being self-employed… it allows me to take risks more easily"
(Woman, 25, France).

Having less things to take care of also relieves from the stress of ordinary daily life and leaves more space for leisure: *"I find it easier to take care of the house, because the other house was so big. So it's just to do with less of a time volume, also with less material things and with less monetary value. It's relieving"*
(Woman, 53, Germany).

Some respondents also express the will of living with less, referring to bigger space and more things as sources of mental load and wasted time:

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"Mentally, we felt really freer and more comfortable having less things"
(Woman, 25, France)

- Rebound and spillover effects

Living in cohousing first automatically increases the opportunities of sharing goods and facilities. Most cohousing projects include the (explicit or implicit) sharing of tools and activities. In the Italian initiatives, all utilities are shared. One initiative includes a common laundry room, a carpentry, bike repair area, pantry and a cellar. In Germany, objects that are in the common spaces are shared as well, such as the workshop and the needed equipment in the open spaces. In the different apartments, sharing is handled differently and autonomously. Some inhabitants do the shopping together and all the food is shared if not labelled explicitly. Some others share basic food items and utensils such as cleaning products. Another one tells that they share equipment such as gardening tools, but also the room for the bikes. Sharing practices include both formal and informal practices but seem to be fully normalised among participants: *"if you need anything, if you want to build anything, if you want to do anything, you either find it or you post in the signal group and ask if anyone has it. And then it will be found"* (woman, 29, Germany).

In the case of tiny houses, sharing is less widespread, but borrowing is frequent, because tiny houses owners do not have the space to possess many things. For example, on the day one of the interviewers visited two tiny house owners in France, they were thrilled to have borrowed a deep fryer from their neighbours for the day, which allowed them to cook French fries – something they do not usually do.

With regard to food, we observe that many interviewees have less carbon-intensive diets. Many of them mention being vegetarian or vegan, though it is not a general rule in the initiatives under study. Some cohousings serve as a distribution point for organic food, while others participate in local buying groups. As a participant explains, *"now, for the first season, we get our food delivered here to the neighbour's entrance in the basement, once a week. And pick it up there, so now we have a lot of locally produced organic vegetables"* (man, 36, Germany). In one case (France), the co-owners grow their own vegetables. Practices of zero-waste and/or bulk products are also common amongst the participants. All in all, food is an important concern. As a participant puts it, *"The food we eat, it does not concern just diet, it's a social issue"* (man, 73, Italy). In addition, the fact of benefiting from cheaper rents allows to spend more on food: *"so an area where I benefit from is that I do not pay so much money for the rent, that I can just focus more strongly on regional and organic products somehow and that is somehow also possible for me in terms of price now"* (man, 32, Germany).

In tiny houses, the whole lifestyle is affected by the fact of having less space to stock things, but also to stock waste. Some respondents were on a zero-waste action. More broadly, packaging is seen as a loss of space, and no space should be lost in a tiny house. It thus mechanically pushes towards choosing bulk products and changes the diet: "*When you start to avoid packaging, a lot of things get out of your diet because you can't find them in bulk products*", explains a participant (woman, 25, France). Since there are rather few spaces for storing food, living in a tiny house also encourages to buy fresh products more often. About half of the respondents, we interviewed were vegetarian or vegan, for environmental reasons. Two respondents also participated in a food-sharing initiative.

With regard to energy, cohousing often comprises green energy projects and/or renovation works. Expensive installations like photovoltaic panels are more affordable when purchased collectively. Thermic renovation can also be more efficient when pulling the resources. In some initiatives, resources are monitored and distributed according to quotas of consumption (Italy). Savings on water consumption are also common, with water recovery systems. However, lower temperatures of heating have only been referred to by one participant (woman, 38, France). In addition to the fact of sharing many objects and appliances, some respondents have mentioned preferring second-hand clothes, avoiding the use of electronic devices or limiting it (water boiler, dishwasher, washing machine, TV and AC). This attention for energy use clearly derives from a concern for lowering the energy demand:

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We try to make every piece of equipment run in the most energy sufficient way (Man, 73, Italy).

In tiny houses, access to water and electricity can be challenging, with many tiny houses being off-grid. The reduced number of appliances (and their reduced size: small ovens, small fridges and small washing machines) and the reduced surface of the house mechanically creates less demand for energy. Being off-grid also means creating new routines, for example laundering when the sun is shining because otherwise the solar panels do not produce enough energy, as a participant in France explains.

With regard to mobility, the situation is very diverse according to the location of the participants in both cases. In cohousing, rural projects remain car-dependent while some urban projects are entirely car-free, allowing for a collective reappropriation of the space used by cars, as explains a participant in Germany: "*We have grown garden beds on some parking lots*" (woman, 29). Bike use is widespread. Having a routine for working collectively facilitates car-sharing, which are part of one cohousing initiative in France and two in Italy. Some respondents in France also mention their effort to exclude plane use or to reduce it. In tiny houses, villages that are close to a city allow for the use of public transportation, though their situation is already somewhat peripheral, and the majority of respondents still own a car. In France, tiny houses are to be found in the countryside exclusively because of the need to be "hidden", since the housing regulation does not allow them to be occupied permanently. Thus, they are usually in very remote spaces and far from any shop and service. This creates a huge car-dependency that some respondents regret, and that even leads them to quitting this lifestyle, as a respondent in France explains: "*The notion of comfort evolves during the life. Now that we have a child [and live in the city], we really appreciate being close to everything and not needing the car. Even if we are not anymore in this minimalist lifestyle. It's a compromise*" (man, 38, France).

In cohousing, relying on a sustainable-oriented community has a positive impact on all the dimensions of lifestyle, by sharing solutions and responsibilities for adopting a lower impact lifestyle. Community also brings trust, which is necessary for sharing. This strength of the community nevertheless also has weaknesses, as we shall see in the next paragraph.

Living in a tiny house also has important spillover effects. It leads people to own less things, to care about resources which are made visible by the fact of living off-grid, and to raise the level or awareness on the environment, as this French respondent explains: *"There is a consciousness that comes from the fact that when we build a tiny house, we must calculate as precisely as possible our needs in energy. It is necessary and it drives you into questioning your lifestyle (…) some people have professional reconversions; some even go into activism because the awareness has jumped a level."* (woman, 37, France).

3.1.5 Negative aspects and barriers

In cohousing, living together with many different people and sharing decisions about daily life also brings difficulties. The daily practice of micro-democracy can be difficult and time-consuming, while the management of the project is also made complicated by administrative burdens. The emotional load of navigating the social relationships and social codes in the community, can also be difficult to manage: "*Where do I greet? Where do I engage in a conversation? Where do I just pass by?"* (woman, 64, Germany).

Social support can also sometimes derive to social control, and lead to disaffection, like this participant explains: "*You look more at what others are doing and then had the panic to be in a socially constricting village here, where one not only looks, but also evaluates what the others are doing. And that was too much for me. I had to withdraw*" (man, 36, Germany).

All cohousing projects also need to negotiate and find the equilibrium between the private and the shared spaces, which can also evolve over time as this participant explains: "*The need of one of the residents had resulted in the reduction of the common area for everyone. We had to process and accept this. Here we realise that sharing has benefits, but that there are sacrifices too*" (woman, 73, Italy). All in all, there is a necessary balance to be found between individual

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freedom and collective organization, between community and intimacy, like this participant explains: "*You can't go naked in your garden. So you can't want complete freedom. But you have respect*" (woman, 75, France). Financially, it is also worth noting that even though the private parts of cohousing projects are rather cheap, the maintenance of common areas can be expensive and/or time-consuming, when it relies on volunteering.

In tiny houses, the main difficulty is linked to the rather precarious settings and living conditions, because ordinary urbanism and networks are not fit for this kind of housing. For example, the provision of energy can be either off-grid and thus dependent on the weather, or on-grid and thus dependent on the provider – either a campsite, or most often the landowner in France. Although they tend to be more sufficient regarding energy use than other types of housing, tiny houses also have weaknesses with regard to energy: because of their small size, they need a strong air ventilation system to avoid humidity and mold. They also need ceiling fans because they tend to heat easily in summer. Therefore, although in rather small quantity continuous energy provision is necessary and this need is not always met. The temperature is also difficult to control: when the tiny house is well insulated, the temperature easily rises to 23-24°C as soon as the heating is on. On the contrary, a poorly insulated tiny house can be hard to heat. These weaknesses appear to be unsatisfying for the respondents that are the most involved in sufficiency.

Finally, the most important difficulty in France is the semi-legal status of the residents. This situation is not comfortable and stressful, as a respondent explains: "*You have this constantly over your head: 'I have been seen, I have been turned in, but I don't know if I'm going to be expelled*'". (Woman, 25, France).

3.1.6 Adoption and diffusion

Our data shows that cohousing projects are often very long processes which require a long-term and rather intense involvement. Building up the collective and the interpersonal relationships is the main task of this process, but the administrative burden of creating a housing facility is also extremely heavy, though dependent on the scale of the cohousing and on the municipality involved. Informal shared housing in the rural areas appears to be easier to build than publicly funded initiatives in the urban areas. As the example below shows, urbanism norms are complex and participants in the cohousing initiatives have to learn them "on the job":

"we had to submit a color to the city, how we wanted to paint the house. And what we had proposed was too yellow for the woman who was in charge. It was something like apricot. And that she actually approved. So sometimes there were things, really, where we thought, 'This can't be true'"
(Woman, 64, Germany)

However, even with small-scale rural initiatives, the process of creating new social norms and routines that need to be negotiated and implemented for the trust to be established is always long. It thus requires a lot of energy and determination. Many respondents thus reckon that cohousing is not meant to be a one-size-fits-all solution. However, they also report lots of positive feedback from people around them. Cohousing projects inspire each other, with many projects being based on existing experiences. However, for people who are not in this kind of initiative, the fact of sharing a house remains extravagant, as this respondent says: "*We didn't succeed in convincing other people. I was rather told that I was crazy!*" (man, 31, France).

Tiny houses, on the other hand, are ways of life that appear to be seen as more "radical" and difficult to disseminate. Some respondents have reported tensions with their families because of having chosen this way of life. The illegality of such housing in France also hinders its diffusion, since one who wants to live in a tiny house needs to find a local landowner that would accept to host the tiny house and even if so, the arrangement can always be reported to the local authorities. In this case, the local mayor can require that the house is moved away, even though some mayors accept to close their eyes. In all cases, this kind of housing is not fit for any household since only 1 or 2 persons can live in a tiny house. However, it has potential to meet the needs of certain people and certain situations. Indeed, experiencing life in a small and yet very

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comfortable and desirable type of housing, as something positive and utterly pleasant, even for a short period of time, could lead ordinary people to realise that living with less can be enjoyable. Students of architecture, home builders could also be familiarised with this type of housing to design more economic and yet comfortable houses. Also, many of the "tricks" tiny houses use to consume less resources and less space could be transferred to ordinary housing.

3.1.7 Levers

- Social habits

Regarding cohousing, our research shows that finding people who share the same values and who are willing to invest their energy in a collective project is the main lever for such initiatives. Knowledge is also important, since cohousing initiatives are not widespread, and are little known among the general population. Thus, forums and fairs about cohousing are an interesting lever for dissemination, since they allow people to learn about these initiatives and to get in touch with other people willing to build a community. This, however, requires a willingness to invest time and energy in a housing project, as well as certain mindset. In exchange, cohousing projects can provide affordable housing solutions.

Regarding tiny houses, our research shows that living in a tiny house is suitable for certain households only. It is a commitment that can be too demanding in the long run, especially when young people decide to have children. However, it can provide affordable solutions for accessing property and housing for single households, who often have to choose low-quality, energy inefficient housing if they stay on the market, because of the lack of affordable housing. It requires, however, an interest in living with less that also relies on experiences of travelling (sailing, backpacking).

- Infrastructures

Regarding infrastructures, support from local government is critical. Including cohousing as a routinised form of housing in land planning and urbanism would avoid many problems with projects having to circumvent existing norms, thereby creating an administrative burden. Training is also important, particularly for architects who are not used to working on this kind of housing. Architectural design is key in order to smoothly accommodate private and common areas while respecting both the need for intimacy and sociality.

With regard to tiny houses, one important limit of this kind of housing is its rather peripheral (in Germany) or even remote (in France) location. Allowing such housing to be established closer to city centres could allow it to be more sufficient (and less car-dependent). This housing cannot compete with multi-storey buildings in big cities, but it can provide an interesting alternative to urban sprawl and the boom of residential districts in smaller cities. Small and medium-sized city centres could provide spaces for such kinds of housing.

In both cases, there is a lack of access to funding solutions. As these kinds of housing do not cor-respond to the dominant model of housing funding schemes (one house or apartment–one household–one loan), they lack access to efficient funding solutions and the loan rates are often higher. For tiny houses, only consumer loans are accessible, meaning that all tiny house owners have to possess some personal funds to invest in their house.

- Social frameworks

With regard to social frameworks, awareness of sustainability issues is an important lever for get-ting people to agree to participate in a shared housing project. However, since these initiatives are still quite rare, joining such an initiative raises accessibility issues. Some respondents resort to remote work in order to live in such an initiative, but remote work is not possible for everyone. Dissemination would thus be by itself a lever for allowing more people to join such initiatives, including in underprivileged neighbourhoods given their relative affordability. In addition, such projects generally participate in bringing diversity and liveliness to neighbourhoods, by creating spaces of sociability. However, the one family–one house norm is very strong in western Europe. Sharing a house with people you do not know is seen as unappealing because it raises fears about mistrust, lack of intimacy, and potential conflicts. In order to increase this

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level of trust, people prefer to share with individuals with whom they share the same values, ways of living, and social norms. This mechanically creates social homogeneity, which is a lever in the sense that it facilitates trust, but it is also an important limit of such initiatives in terms of social mixing. With regard to tiny houses, there is a need to reconsider space as the prime definition of luxury. As we have seen, comfort, light, and access to a small garden are also amenities that are valued and that can be part of the definition of luxury. However, this kind of housing is also appreciated because it allows for mobility and/or living in remote locations, both characteristics that suggest potential rebound effects.

3.2 Food

Two different kinds of initiatives were studied in relation to food consumption or agriculture: different forms of direct buying and participation in agriculture initiatives (France, Germany, Latvia) and foodsharing (Germany).

3.2.1 Description of the initiatives studied

In a community supported agriculture (CSA), agriculture is decoupled from the market and food is produced in its own economic cycle. The farmer is dedicated to sustainable agriculture. A group of consumers shares the costs of the farm and receives the harvest in return. This creates a regional production chain. In the case of Germany, the farm is financed - not the individual foodstuff. The city community finances all the costs that arise on the farm during the year and at the same time guarantees the purchase of the food produced. This gives the farmers planning security and allows them to work independently of market pressures. CSAs can be organised in different ways. Once a week, city dwellers get the fresh harvest delivered to the pick-up points. In winter, vegetables are available every fortnight. In Germany, 4 persons have been interviewed in CSA: two 30-years-old men, a 40-years-old man and a 50-years-old woman. They have caring profession, freelancer, and office job. One has been part of the initiative since 2015, other few years ago. Two of them work at the farm on 4 days assignments per year. One has not engaged on the farm, as it is more than 200 km away and she could not make it so far.

In Latvia, such groups have been created and organised jointly by consumers to get fresh organically grown local food on a weekly basis, purchasing it directly from organic farmers and investing their time. Direct Buying Groups were formed in 2010 and within the framework of the movement, there are presently around 20 groups that serves more than 1000 families and involve around 100 organic farmers. The system operates on the initiative of the participants and does not require financial input, only time. All work related to the ordering and distribution of products is carried out by the members of the group on a voluntary basis – each week, on an internally established rotational basis, group members volunteer to make a list of products, receiving products from farmers and distributing them among group members. Direct buying is drastically different from the usual shopping in the market or in the supermarket. The group participant must learn how to plan the necessary products for the next week. Also, sometimes you have to be creative in order to prepare meals from what is available seasonally at a given moment. It also creates a strong connection between farmers and consumers and is based on the values of self-initiative, care, group strength and partnership, friendship, volunteerism and organicity (Bankovska, 2020). Community-supported agriculture is a way to support organic agriculture and the organic food movement in Latvia and to promote the realization of locally grown food, which creates a significant investment not only in the support of agriculture but also in social matters in Latvia (Danefelde, 2013). Four persons have been interviewed in such a group: a 48-years-old woman, and three 30-year-old women.

In France, community supported agriculture has been created through the Association for the Maintenance of Peasant Agriculture (AMAP), a partnership between a group of consumers and a farm, based on a system of distribution of weekly "baskets" made up of farm products, in a very similar fashion than in Latvia. They are intended to promote peasant and organic agriculture, which is struggling to survive in the face of the agro-industry. The principle is to create a direct link between farmers and consumers, who undertake to buy the production at a fair price, and consumers paying in advance and thus guaranteeing a stable income for the farmer. AMAP thus

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participates in the maintenance of local agriculture and the management of land pressure. The consumer group and the farmer also agree on the agronomic methods to be used. These are inspired by the charter of peasant agriculture and the specifications of organic agriculture. The AMAPs thus participate in the fight against pollution and the risks of industrial agriculture and promote responsible and shared management of common goods. There are over 2000 AMAPs in France. Five persons have been interviewed in such groups: a 40-years-old couple, two 40-years-old women, one 40-years-old man. They practice AMAP since a few years, two of them are volunteers, helping in the distribution. All of them buy vegetables. They have different kinds of jobs: informatician, doctor, administrative job, not working because of handicap.

Besides community-supported agriculture, initiatives aimed at reducing food waste have also been studied in Germany. "Foodsharing" is an online platform that emerged ten years ago in Germany. At that time, discussing the problem of food waste was still new in Germany: there were neither statistical surveys nor scientific research or studies on it. Public awareness of the issue has increased significantly since then. Some companies, restaurants and supermarkets have committed to reducing food waste, supply chains have been made more efficient, and promotions and discounts have been introduced for products that are close to their sell-by date. The aim of the foodsharing initiative is to save surplus food from being thrown away, to distribute it and thus to set an example against the everyday waste of this precious commodity. The principle is simple: traders or producers offer food free of charge for collection that would otherwise be thrown away - for example, because it has just reached its expiry date or more has been bought than can be consumed. 5 persons have been interviewed in this initiative: one of them is not a food saver (person who collects food from companies) but she takes care of the cleaning and organisation, the others support the 'fairteiler': picking up food at supermarkets and other grocery stores but also save food. Two of them are forty-years-old women, two are fifty-years-old women, and one is a thirty-year-old man. They work in public administration, social, therapy, or financial activities.

3.2.2 Goals, values, role of sufficiency in the food initiatives

In Germany, sufficiency as a concept and term was not known to most of the interviewees from those initiatives. After the interviewer explained the meaning, many agreed that sufficiency is important and seems useful. Without directly referring to sufficiency, many of the interviewees pay attention to resource saving, also in areas beyond food (mobility, living, etc.). Overall, however, (ecological) sustainability is emphasised more frequently.

In Latvia, sufficiency is a concept that is not an integral part of the movement surrounding the direct purchasing groups. Members of the initiative rather associate themselves with the concepts of localization and self-sufficiency.

For the AMAPs in France, sufficiency is identified as part of the initiative and linked to the opportunity to consume locally, therefore reducing the distance travelled by the products, reduce packaging, promote agriculture with fewer chemical inputs, and promote awareness of the ecological impact of food and agriculture which, according to most interviewees, prompts a more comprehensive awareness of consumption and its ecological and social impacts.

3.2.3 Motivations and needs addressed

Different forms of community supported agriculture in France, Germany and Latvia are close initiatives. Motivations are to get local, healthy, qualitative, tasty, and organic food from farmers (known origin), to provide good products not normally available elsewhere. Some people joined the initiative when they had their first children, so they wanted to feed them healthy food. Motivation is both private (get healthy, good quality food) and social (support organic farmers and local economy). Some people also want to contribute to reduce their ecological impact:

"Even if I am aware that it will not change the world, at least I participate in making it less bad" (Woman, 40, France)

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"I don't like industrial agriculture and am looking for greener alternatives."
(Woman, 36, Latvia).

The social connection provided with people and with the local environment is important, since picking up baskets or participating in the harvest are moments for social bonding. Some also find it fun.

Concerning food sharing in Germany, the motivations are environmental concerns, helping other and saving money.

"It does not only motivate me to save food but also it affects the system around me in which I live" (Woman, 45, Germany)

With community supported agriculture, the first need highlighted by participants is empathy and social bonding: most of the people talk about meeting other people:

"I am very happy to meet all the people in the network (both farmers delivering food and participants coming to pick it up."
(Woman 48, Latvia)

Meaning comes in a second position, people talk about doing this for society or the planet, it is meaningful.

"This gives me the awareness that I do what I preach for and the world should go towards organic food consumption"
(Woman 36, Latvia).

"*Sustainability from both a social and environmental perspective is a totally central thing*"
(Man, 32, Germany)

Well-being and pleasure are also referred to abundantly. Respondents talk about the quality of food and its healthier and tastier aspects. Autonomy comes after, since many respondents talk about cooking by themselves and sometimes contribute to grow vegetables. Security is also a need frequently referred to, through the solidarity and mutual aid provided by those initiatives.

Concerning food sharing, empathy and meaning are also first: it is about enjoying the community of like-minded people, and participation in the bigger movement that helps change the world for the better.

3.2.4 Change of habits and impacts

In the initiatives based on the maintenance of peasant agriculture, the planning and organization of the food week is an important challenge (collect the baskets, schedule the preparation of the meals, help the farmers, etc.). Change also concerns eating habits, the diet with different products and learning to cook certain vegetables.

- Health and wellbeing

The choice of participating in a peasant agriculture initiative induces lots of advantages. A pleasure factor which is described by the words "very aromatic", "fresh food" or "pleasure of meeting people". Freshness of the food has impacts on wellbeing:

"The freshness of the food is simply amazing. If you're a real bon vivant, you should do it."
(Woman, 58, Germany).

All the respondents considered the products to be a healthier option. They also claim to discover pleasure to cook themselves, to create and feel in adequacy with their environmental values. They also said they discovered more connection with natural rhythms.

For food sharing, benefits on wellbeing are focused on saving money. Some respondents also say that participation makes them feel better, because the food in food sharing is usually healthier (fresher food) and it offers them the possibility to try different food. They also appreciate the sociability dimensions.

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"You eat what's there and that has positive impacts as you learn about different food, which you would have otherwise not known about"
(Woman, 47, Germany)

- Rebound and spillover effects

Few rebound effects were mentioned, apart from the increase in meat consumption (as it is good local meat), and the need for a freezer to keep food fresh for longer. Some also mentioned waste in case the basket is not adapted to the needs.

Spillover effects include mainly the concern about how food leads to a progressive and comprehensive attention to other sectors, and the fact that it is a fairly accessible first step. Some also mentioned the lessening of the need to shop in stores and supermarkets and the reduced temptation for consumer products. Food is a very typical entry point for involving oneself in a sustainable lifestyle. It is a way of implementing rapid and simple changes in one's daily life, by proceeding in stages and offering diverse options. One can purchase baskets in an AMAP or shift to a less meat-based diet, one can buy organic or local, one can donate or collect food waste. Getting to meet other people involved in the initiative also leads to self-reflection.

"The community spirit in the CSA has also changed consumption habits to a greater extent"
(woman, 47, Germany).

There are various entries and levels that are rather accessible to each type of person. In this way, it is easy to get a foothold in a process which then opens up to other fields, with a concern for coherence. For instance, the concern for local issues will lead to an awareness regarding transportation, while food sharing is related to the waste sector. Cooking more for oneself leads to an interest in bulk food. The concern for organic food, even if motivated by health concerns, can lead to an awareness of food's ecological impact, and can encourage broader notions of sufficiency. Meeting others through such initiatives encourages the sharing of practices that have an impact on other sectors (housing, transportation, etc.) An interest in the land can lead to a willingness to share spaces (vegetable garden, dwelling).

3.2.5 Negative effects and barriers

For community-supported agriculture initiatives, the monthly fee for the food baskets can be considered high, and some people might find it difficult to cope financially. Committing to such initiatives also implies to dedicate time to help, which can be burdensome.

"A certain proportion of members must be actively involved, otherwise it doesn't work"
(Man, 32, Germany)

"It's not always easy to plan for the week and to remember to make your order on time."
(Man, 36, Latvia)

"You have to be there a certain day at a certain time"
(Woman 40, France)

The lack of availability of different products is also perceived by some participants as a barrier, as there is not much choice of vegetables (or at least, less than in a supermarket).

"People don't come because they don't have choice of vegetables and have the constraint of having to be there such day at such time".
(Man, 50, France)

"It's easier to go to the supermarket and pick what you want"
(Woman 58, Germany)

For food sharing, the law seems inadequate in Germany to support such initiatives. "*There are laws in other countries that restrict the destruction of food, but this is lacking in Germany so far*" says a participant (woman, 58). "It seems that wasting food is even easier than giving it away" explains another (man, 37). The continuous engagement of people is also necessary. When people are absent (due to illness, job constraints, etc.) sometimes not all food can be picked up from

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the shops. Other negative aspects mentioned is that people have to invest time and cannot choose the food freely.

3.2.6 Adoption and diffusion

- Adoption

The social relationships play a big role in the adoption process for community-support agriculture: many respondents have heard of such initiatives by their friends, colleagues, acquaintances, or neighbours. Health problems (stress, illness, accident) create also interests in a healthier and more respectful diet. Sometimes it leads to an increased sensitivity to nature and the environment, or it comes from this sensitivity. Awareness on food issues seems gradual: it can begin with choosing products, looking for local products, cooking, and then organic or vegetarian.

"Ecological sensitivity leads to consistent eating: eats more consciously and with more pleasure" (man, 37, Germany)

- Diffusion

Food seems to be a very common gateway to engage in sufficiency, because it is linked to health and pleasure and therefore affects engaging motivations. Commitment to a community-supported agriculture initiative does not bear a lot of constraints (compared with more engaging practices such as living in an ecovillage or a tiny house) and given the leverage it represents in terms of broader awareness, it has promising dissemination potential.

However, most participants find it difficult to encourage those around them to join such an initiative. Participating requires a motivation to be in a pro-environmental dynamic and/or to look for healthier products. It also depends on the local availability of such initiatives. Respondents report that people around them react positively to their involvement, but that they are sometimes seen as overly moral persons. "Word of mouth" approach seems to be the most effective in promoting the movement for both community-supported agriculture. For food sharing, a consistent legal framework to facilitate the collection and distribution of discarded food must be implemented.

3.2.7 Levers

- Social habits

For community-support agriculture initiatives, the first lever mentioned regarding social habits is education. This involves teaching children the basics of sustainable agriculture and food. Networking of actors is also mentioned, thanks to the community of peers, and the setting up of an "ecosystem of initiatives". Accessibility is necessary to have the opportunity to change their consumption habits, favouring local and seasonal products. On the other hand, producers should bring greater flexibility in their basket systems (e.g., more choice).

- Infrastructures

In terms of infrastructure, more agricultural land should be allocated to such initiatives and premises for distribution and storage should be provided. The settlement of such farmers should be encouraged. For food sharing, the infrastructure is also important as collection and distribution of food must be organised locally in an efficient manner, to avoid potential rebound effects in transportation.

- Social frameworks

One of the levers raised by respondents is working time reduction, for example through the 4-day week. Such initiatives require time, investment and eventually volunteering, which would be easier if the time dedicated to work was lower.

In their opinion, the legal framework should also be improved to foster this kind of initiatives, and greater public aid should be granted to them. The importance of training farmers was also stressed.

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With respect to food sharing, several levers were mentioned: the involvement of a larger number of contributing companies, a broader range of food sharing drop-off points. The legislation must also allow and encourage the reduction of food waste by the major food distributers (supermarkets, but also restaurants).

3.3 Goods

This category refers to the consumption of material goods. It thus encompasses a broad range of initiatives. Seven initiatives have been researched in four countries: a trade fair and a system of tableware rental in Italy, a freeshop in Latvia, a support group to decrease the carbon footprint, a zero-waste group and a low-tech lab in France, and a repair café in Denmark.

3.3.1 Description of the initiatives studied

In Italy, respondents have been recruited in a local trade fair about organic, km zero, critical fashion, sustainable mobility, responsible tourism. This fair displays strict selection criteria in order to stay true to the principles of the initiative and avoid any greenwashing. Exhibitors are businesses, organizations and associations that offer products and services that are environmentally friendly, socially responsible, and ethically produced. Items range from organic food, eco-friendly household goods, natural beauty products, and much more. Conferences and workshops are also organised to address various aspects of sustainability and responsible consumption (e.g., zero waste, energy, food labels…). Three persons have been interviewed in this initiative: one forty-years-old man, one forty-years-old woman and a fifty-years-old woman. Two are employed, one is unemployed by choice. One is one of the founders of the initiative, the two others are volunteers.

The second initiative researched in Italy is an initiative for borrowing environmentally friendly tableware for events and parties. It is made of washable and reusable material, available to anyone who wants to borrow it (families, friends, associations), at a free price. The aims of the project are to reduce the use of disposable plastic, which is extremely impactful on the environment, and to promote reuse. Three persons were interviewed in this initiative, all men (36, 66, 44). They are respectively technician, retired, and bank employee. One is a co-founder of the initiative, the two others are users.

In Latvia, the practice of freeshopping has been researched in two different locations of the country. Both initiatives are associated with NGOs and are managed by volunteers. The principle of free exchange means that these are places where clothing and other domestic things can be acquired for free. Both initiatives accept things as donations – there are no criteria other than good quality and usability. Five persons have been interviewed: only women aged from 30 to 60. They are cultural project manager, activist, event manager, volunteer program manager, linguist and university lecturer. They have different roles in the initiative.

In France, a support group for reducing the carbon footprint (“Carbon Conversations”, founded in 2006 in the United Kingdom by a psychotherapist and established in 8 countries worldwide) has been researched. Carbon Conversations are an original and friendly approach to support people in the sustainable change towards a lower carbon lifestyle, by combining technical and practical expertise on climate change and energy sufficiency with psychological know-how to facilitate change. Three people have been interviewed in this initiative: two men (age 30-50), one woman (age 30-40). They are technician, commercial and community project manager.

The second initiative researched in France is a zero-waste group, which encompasses a set of practices that can be implemented to reduce waste (packaging, plastics, single-use products, etc.) and waste (objects, resources, food, etc.), in order to contribute to reducing the environmental and health impact of waste. The approach is based on 5 “Rs” which are Refuse: goodies and other gifts that will not serve you, unnecessary packaging, etc.; Reduce: buy in bulk to avoid packaging and/or products in returnable containers; Reuse: favor reusable objects over their disposable version, extend the life of objects (maintain, repair, give a second life, etc.); Return to the earth: sort bio-waste (peelings, food scraps, etc.) separately and compost them and Recycle: sort waste that could not be avoided. Six persons have been interviewed: two men (age 30) and

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four women (age 30 to 80). Two are retired, others are engineer or teacher. Two are initiators of the association, three are workshop users or practitioners.

The last initiative researched in France is a low-tech lab located in a big city. Low-tech labs form a worldwide network that promotes practices, tools, objects and techniques that rely on three principles or characteristics: affordable, simple and useful. They frequently derive from engineers and try to promote alternatives to technology dependency and planned obsolescence by offering ways to self-build simple objects of daily life. The low-tech lab that has been researched organised workshops in low-income neighborhoods to learn how to self-build appliances (such as a solar oven). Three interviews have been conducted, two with users of the workshop, both women (77 and 60), retired and cook, and one with one of the organisers, a 23-years old female student in an engineering school.

In Denmark, a repair café has been investigated. Repair Cafés are open workshops, where citizens can access tools, workspace and help from volunteers (Fixers), to repair their faulty household items, preventing them from being thrown out. The concept first emerged in Amsterdam, NL, in 2009 and has since spread worldwide, as a movement to promote reuse and more sustainable use of resources. Today, there are 78 Repair Cafés in Denmark, located across the country in both towns, cities and smaller communities in the countryside. They are all run by volunteers and the fixers are often retired, local citizens with some knowledge of repairing or handywork. Three women (age 64 to 85) and a man (age 65) have been interviewed in this initiative. All are retired. One has been an electrical engineer before and is a voluntary fixer. Others are regular users of the repair café.

3.3.2 Goals, values, role of sufficiency in the miscellaneous consumption initiatives

In those initiatives, the word 'sufficiency' is generally not used, but the missions refer to reductions: reduce consumption, reduce waste.

The zero-waste approach aims to consume less, whether it be packaging or goods of any kind, by encouraging reuse. It also means going back to basics, that is, to needs, as this respondent highlights:

"It makes you think about your needs"
(Man 29, France).

Repair cafés also strive to reuse in order to reduce consumption and waste. The aim is to preserve resources, but also to value our repair skills. Sufficiency is linked to the circular economy with these initiatives that place value on the local, notably the free shops. Re-using, sharing, are common words in these initiatives. One of the objectives is to mitigate climate change. Carbon Conversations, in particular, are all about a "low carbon future". Therefore, it is also a matter of sufficiency in terms of emissions. The carbon conversations target a reduction in emissions from 6 on average, to 3 tons per person and per year. These sufficiency approaches are also underpinned by the desire to build new social networks and improve access to resources for local communities. This involves spaces where people can meet and share goods, but also tips, and knowledge. It also implies volunteering and an economic model based on volunteer work. Many of them question the "consumer society", but many do not consider themselves sufficient. They have high ambitions.

"I don't consider myself sufficient, I wish I were more so"
(man, 29, France).

Consumption is seen as a means of acting in society and changing things. However, sufficiency is perceived as easier when one is materially well off, as a respondent puts it: "*Sufficiency is easier when you are already in material comfort*" (man, 31, France).

For some respondents, this involves enjoyment, so it does not have to be restrictive. Lastly, there is the idea that it happens gradually, little by little, as a progression.

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3.3.3 Motivations and needs addressed

The most common motivation that has been displayed by respondents is the fact of being in coherence with their values to make the world a better place. This is thus a set of initiatives that are deeply anchored in the pro-environmental social movement and where ecology is a prime value. For some respondents, it means protecting the environment by reducing waste, and saving resources. For others, it means fighting against overconsumption. Equity and justice can thus also be important values. Some respondents also want to promote critical consumption, or want to raise awareness in people's way of living. Overall, they want to contribute to "make responsible economy grow" as a respondent in Italy (man, 48) explains: "*I've always been a responsible consumer, and this was my possibility to be it in a practical, professional way*". These sets of initiatives are probably the closest to the concept of "eco-consumption" or "circular economy".

Another important motivation is to develop friendship and respond to social needs. Respondents find in such places a good atmosphere, helpful people, and they intend to develop relationships with people who share the same values.

"Free Shop is primarily a clothing exchange point but not just that – there is a lot of human factors as well. It is very satisfying if a client who brings here one thing and sees that there is another real human who needs it and will use it further. That's very humane."
(Woman 40, Latvia)

Other motivations turn around pleasure and fun such as curiosity, challenge, game, especially for zero waste initiatives or interest in fashion or hobbies related to children's education.

We also found many references to creativity or self-expression: respondents feel accomplishment using their skills such as repairing things or sewing, or "*resisting against the established order*" (man, 31, France). The fact of discovering simple techniques is rewarding, as a respondent from a low-tech lab says: "*I think there is something really fulfilling in the fact of not wasting unnecessarily non-natural resources (…) First it doesn't cost a dime. And in addition, there is a particular satisfaction in watching your cake being cooked by the sun*" (woman, 77, France).

In less frequent cases, motivations can be connected to health, helping dealing with eco-anxiety "*to not feel guilty, not to be inactive*", says a 29 years old man in France, or using more sane materials like a respondent in Italy explains: "*This tableware has a positive impact also on health, on the healthiness of the land around us (microplastics)*" (man, 44, Italy).

A last motivation is connected to saving money: respondents repair or reuse instead of buying new things or they do things by themselves (cooking, sewing, etc) instead of buying ready made products.

Regarding the needs suggested by participants, the first need addressed is *meaning*, exemplified by the emphasis on values, whether it be ecology, resource-saving or social justice. The second most important need is *sharing/empathy*, that drives participants into collective actions and places where they can share their experiences and socialise. To a lesser extent, those initiatives also respond to the needs of wellbeing, self-expression and security.

3.3.4 Change of habits and impacts

Change of habits depends on the initiatives, with different level of engagement. For example, renting reusable tableware is not as engaging as participating in a zero-waste group or following a Carbon Conversations cycle. The main change in the daily life of participants is the degrowth of buying new things. Shopping habits are also altered. Zero waste implies to shop in special places where you can purchase in bulk. Because not all the range of usual food is available in bulk, it also implies changing products, doing more by yourself, and cooking more. Participants in repair cafés, freeshops and low-tech labs buy more second-hand, learn to build and to fix their own things, an activity they find rewarding. Exchanges with engaged people can impulse other changes in other sectors of the lifestyle (garden, bike, changing of job to have more time, solar panels, insulation,…). Some respondents decided to relocate, to be surrounded by more committed communities, or to live in shared houses.

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- Health and wellbeing

In these initiatives, the most cited source of well-being comes from relationships. People talk about "creating a network of trust" through the initiatives and have better relationships. "*I got the feeling that you are not alone, in short, in these choices and in doing things that are sometimes particular or difficult or that do not go in line with the rest of the world*", explains a 31 years-old man in Denmark. Initiatives help to create links and people find pleasure in being together, reconnecting with people through the use of material objects (repair cafés, low-tech lab) or through sharing experiences and support. Participating in those initiatives also seems to increase self-esteem and self-fulfillment.

"I always say that participating to this initiative gives me a lot of energy".
(Woman 47, Italy)

"We both feel very happy about these choices every day. And at the moment, that happiness is even bigger, because of all these terrible news of the rising energy prices. We feel so sorry for all these people and businesses. But it is not going to affect us very much"
(Man, 67, Denmark)

This feeling of not being affected by the current crisis because of adopting sufficient lifestyles is also present in other interviews, like this 60 years-old woman in France also highlights: "*We are not going to have enough electricity and gas to keep on living like that. But I will know how to cope with that. A lot of people won't eat out a banana leaf instead of a plate, it will be hard for them. But not for me.*"

Living in a way that is aligned to values also contributes to well-being, by providing the feeling "*of doing something good/contributing to change*", "*about implementing positive changes*" (man, 36, Italy).

Sharing with children the transmission of knowledge (where things come from, how they are made, etc.) also gives pleasure to parents.

- Rebound and spillover effects

There are few rebounds effect, the main one is the use of car to go to those places which are not necessarily widespread over the territory. As a 36-years old French woman explains, *"if you want to purchase in bulk sometimes there are no such stores close to your house*". Especially in the countryside, driving by car to shop can rapidly overweight the positive impact of buying local, bulk or second-hand things.

Spillover effects are numerous, such as changing food habits, changing views on consumption and the choice of ordinary objects such as tableware:

"That is, at home we followed the initiative a bit, in the sense that we don't keep plastic cups anymore, but we bought some that can be reused, similar to those of the initiative."
(Man, 36, Italy)

Participating in such an initiative also gives the impetus to engage in other initiatives, for example many participants of the Carbon Conversations decided to get involved in the "climate fresco", a tool to raise awareness about the climate crisis. It generated life changes such as change of housing in order to be more energy sufficient, or to live closer to work. Some respondents also felt the need to change jobs, to reunite their personal values with their professional interests. Some decided to create or to join an association to raise awareness on those subjects.

Repair cafés, Carbon Conversations, the Italian fair on responsible consumption, the low-tech lab and zero-waste groups appear to be initiatives that go beyond miscellaneous consumption to affect lifestyles. This is less the case for freeshop and rented tableware, which can also be adopted for economic or practical reasons and need less engagement and important lifestyle changes. The difference comes from the importance that is put on values and on a consistent alternative political and societal project that is put forward by some initiatives, such as zero waste, low-tech labs or repair cafés, and that explains the fact that many participants in such initiatives are very engaged and participate in more than one initiative. They also often are

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engaged in a process of self-reflection about their lifestyle, like in the case of the Carbon Conversations which focuses on all dimensions of lifestyle.

3.3.5 Negative effects and barriers

Potential negative effects are mainly related to the extra-time it may take to access places where it is possible to purchase second-hand, to find bulk products, etc. Some products do not exist locally (animal feed, milk, etc.). Doing things by yourself also takes more time than buying ready-to-go items. Furthermore, consumption temptations are recurrent and fighting against them can create stress and emotional fatigue. Homemade products are not always as effective as industrial ones, e.g. plastic is lighter and unbreakable:

"There are still too many advantages linked to the use of plastic"
(Man, 66, Italy)

"It can quickly become easy and tempting to go to the supermarket."
(Woman, 39, France)

Some initiatives that are particularly engaging can also create tensions with family and friends. For example, zero-waste initiatives recommend refusing unneeded material gifts, which can be a particularly hot topic with the close social circle. It can also create challenges in the couple and family's lives. For example, zero-waste is particularly difficult to adopt with babies and small children.

Barriers to develop the initiatives are relative to organizational aspects. Initiatives frequently lack permanent revenues and have difficulties to pay the bills (rental of premises, tools, etc). "*Economic factor is always the main driver*" says a participant (woman 47, Italy). They also lack volunteers, especially since the Covid crisis.

Barriers also concern the permanence of the dominance of the mass consumption model, that can discourage participants who feel powerless in face of big businesses.

"Those who work for mass consumption spend a huge share of their resources to convince people to buy what they want them to buy"
(Man, 30, France)

The respondents attribute the persistence of this dominant model to a lack of communication from the initiative, or a lack of interest and education from ordinary people. For the ecological fair studied in Italy, the main barrier is the tendency to greenwashing that volunteers constantly have to fight against, "*responsible consumers*" now being seen as a potential market for product-sellers less interested in sufficiency than in an emerging trend.

"The main obstacle is to organise such a fair in a society that doesn't encourage the fair's main values and goals"
(Woman, 47, Italy)

The necessity of compromising with the reality of living in a mass-consumption society can discourage some, but is also accepted by others:

"Politics is always involved in society's choices, and this will always imply some sort of compromises"
(Woman, 52, Italy)

3.3.6 Adoption and diffusion

- Adoption

Some respondents declared that they were already sensitive because of their education or childhood.

"*Awareness of saving resources was very much part of my childhood, it disappeared for many years as my financial status improved, but is coming back in recent years*" says a man in Denmark. In France, a 77 years-old woman also finds in low-tech solutions the ability to connect with her memories from childhood in Algeria:

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"It's also about remembering my childhood (…) We were free in the nature. Our games were to eat sea urchins on the beach, to pick oranges and jujubes from the trees. It's a feeling of liberty, and conviviality"

Some respondents were previously engaged in other initiatives or associations connected to ecological values, and militantism (for exemple against nuclear power plants). Others followed a process, starting from a particular questioning about one object in their daily life, and changing progressively.

"We were wondering about food… About the yoghurts that were going around the world. At the time, we didn't call that "eating local".
(Woman, 80, France)

"For me everything started when I started sewing my own clothes".
(Woman 47, Italy)

Some other respondents were convinced by friends or relations, or the local dynamic of the territory where they live. "*My arrival here allowed me to increase my commitment*", says a 70-years old woman in France. The Covid crisis was sometimes a trigger:

"The crisis has the potential to trigger behavioural changes"
(Man, 48, Italy)

"During lockdown, it was not all so bad. Just watching a plant grow, it was a wonder. It allowed us to re-discover the miracle of nature. There won't be an ecological revolution if mankind doesn't discover this enchantment"
(woman, 77, France)

- Diffusion

Most respondents have learned about the initiative through word of mouth, local associations, and public events. Some also mention social media and especially Youtube videos.

Participants frequently talk about their personal commitment in the initiatives to their immediate family, sometimes to their work colleagues. "*Some people start to use the dishware after they saw someone use that*" explains a user of the tableware renting in Italy (Man, 36). However, friends are not necessarily easy to convince, except those who already share the same values and orientations. Here again, we can see that frequently, participants tend to surround themselves with people who look like them in their approach and are not likely to question their choices. Companions or children, especially teenagers, may be reluctant to change some of their habits:

"I am more invested than my wife. As soon as she sees that I'm drifting a bit extreme, she calls me to order"
(Woman 39, France)

However, participants in the initiatives do not necessarily seek to convince. They are rather interesting in setting an example, or suggesting: *"it is not about convincing, but about giving clues"* (man, 40, France). Indeed participating in an initiative can sometimes be described as a more "*operational*" and tangible way of committing to the fight against climate change than political action.

Regarding diffusion potential, there are very different situations depending on the initiatives under study and the ambition put forward. For example, zero waste is about "going towards" zero-waste and not necessarily achieving it. Though it can be somewhat disappointing, the dissemination potential is greater when the ambition is lower. This initiative is interesting for the change of habits it promotes more than for the immediate carbon footprint impact that is not always straight forward (for example, with imported bulk products such as dried bananas and mangoes).

Carbon conversations can be suitable for everyone, as a way to return to sufficiency with more pleasure because of exchanging tips and experiences within a community. However, they attract more women than men because of their focus on emotions. They require to already be in a

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process of individual change and environmental awareness. However, they are also seen as too individual and theoretical for some, who want more "heavy" actions.

The concept of Repair Cafés has great diffusion potential, as the growing number of cafés in Europe shows. Because the local cafés are run by volunteers and have very few regular expenses and are quite easy to settle, once the initial sources of funding for tools and space are secured. The biggest issue seems to be finding suitable workshop space and money for rent. In some areas, the municipality helps with these expenses. The other main issue with the repair cafés is the amount of time needed from the local manager and the voluntary fixers. These are usually retired and have a great personal interest in either fixing and handywork or working for the community.

The fair has also a great diffusion potential, but the respondents have warned against the risk of greenwashing (as explained by the volunteers).

Regarding free shops, initiatives depend on efforts from local NGOs. However, they have the potential to reach more diverse populations as they offer a socially inclusive and place-based approach. Many participants see dissemination potential in the framework of urban renewal projects.

3.3.7 Levers

- Social habits

Alternative forms of civic engagement can encourage circularity in textile waste management and repair practices. With respect to secondhand products, free location-based exchange is a necessary adjunct to the emerging value chains in textile waste management. Thus, the criteria used to select items eligible for exchange (quality and type of goods) influence both delivery options (which are not the same as textile waste containers) and donation options (which are not necessarily charities).

The emphasis on specific use cases and materials may offer a broader development trajectory in the future. However, finding stable income streams to cover maintenance costs will remain a challenge for those initiatives. In parallel, different channels of exchange and waste management, free or price-based, should co-exist.

According to some of the respondents, the organisation of festivals should be bound by constraints of sufficiency (e.g., non-disposable and reusable materials). Education towards responsible consumption is seen as a crucial lever. Such education should take place at school but also within the population by designating zero-waste ambassadors.

- Infrastructures

The infrastructure levers to promote a more sustainable consumption pattern involve the implementation of areas to distribute bulk or second-hand materials, as well as the setting up of recycling circuits and materials for repair, and the development of collection points (textile containers, charity shops, etc.) along with online platforms. Facilities for repair cafes and low-tech labs are also mentioned.

- Social frameworks

Respondents, both initiators and participants, considered that it was necessary to implement legislation to regulate the process of designing products so that they can be more easily repaired. Pricing policies should implement financial incentives to repair rather than buy new, taxes or bans on single-use products, and to display the ecological impact of products. Incentive policies may support packaging reduction or bulk storage and the repair of goods. The price of products should incorporate their environmental impact.

Part-time work for the society (social and environmental) could be a good solution to compensate for the lack of volunteers in repair cafés, free shops or other eco-friendly associations.

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At municipal or local level, public services should be exemplary in their zero-waste approach. Municipalities should support local producers and encourage local consumption via a network of distributors and producers in favour of bulk. Local currencies can contribute to this approach.

A reflection on waste must be carried out in each territory, involving the offer of bulk products, second-hand products (deposit system) and repair cycles. Initiatives (repair café, low tech lab, free shop, etc.) in semi-public spaces at the neighbourhood level can be helpful. Shops could grant discounts to people who bring their own packaging.

3.4 Ecovillages

Ecovillages embody a form of dwelling that is sought to be compatible with planet boundaries. In that sense, they represent a more transversal type of initiative, that does not target one practice in particular, but the whole fact of living differently and to have a different relationship with the environment. Sustainability is often at the basis on ecovillages foundation – even if other motives such as spirituality and religion can also interplay. Ecovillages can be defined as "keeping the community together with socially harmonious, economically practical, and ecologically sustainable settlements to demonstrate that human beings can live cooperatively with each other and the natural resources. The ecovillage concept might include dimensions of environmental friendliness, economic alternatives, social networks and organizations that aim to achieve self-sufficiency to a greater or lesser extent, that point towards sustainability" (Singh et al., 2019). In France and Italy, they stem from communalistic experiments of the 1960s in the deserted rural hinterlands. They are often considered as the evolution from these experiments, in which the antagonistic drive to change society gives way to a focus on individual change. In India, they are more connected to a holistic perspective on the relationships between the human and the planet, including all forms of life and with a particular focus on nature restoration. In Latvia, the permaculture and self-sufficiency perspectives also conflate with spiritual elements and the quest for reconnexion with traditional pre-Christian lifestyles and paganism. Though present worldwide, ecovillages thus have different identities and cultural features across countries.

For this research, 10 ecovillages have been investigated in 6 countries (Germany, Italy, Latvia, Denmark and India).

3.4.1 Description of the initiatives studied

In Germany, one ecovillage founded in 1997 has been researched. The place presents itself as a social-ecological model settlement and community for a future-oriented way of life in which work and leisure, economy and ecology, individual and community, cosmopolitanism and village culture find a balance in small circles of life. Currently, around 150 people including about 50 children/teenagers live there. Starting with only construction trailers and 15 people with the idea of a village, the ecovillage now lies on an area of 115 hectares with 13 straw-loam-houses on it. Two interviews have been conducted there, one with a 63 years-old man that works in education and research, and one with a 20 years-old woman who is a volunteer in the hospitality part of the ecovillage.

In Denmark, three different ecovillages have been researched. All of them are rural, but one of them is rather close to a city. All of them are aiming for sustainability (environmental, societal, economic, cultural), and for self-sufficiency in some areas. They all have democratic organisational structures. The different activities are done in several thematical groups, which people choose to participate in. The ecovillages are also organizing guided tours, markets, and different courses on sustainability for visitors.

The first ecovillage is a newly established ecovillage project that started in 2015 and intends at building a "living community" where participants can live, work, grow food, have cultural events etc. in one single space, that would be completely self-sufficient with water, electricity, heating, and sewage. The ecovillage includes a shared working environment (coworking, and workshops). Four interviews have been conducted with two men (66, retired and 32, self-employed handyman) and two women (70, retired and 31, caterer).

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The second ecovillage is a community of 90 terraced houses and several community buildings, with about 130 residents, founded in 2017. It is surrounded by farmland, organic vegetable gardens and orchards. The community is self-sufficient in organic food production, energy with a local windmill, and has a water collection and sewage system. Houses comprises private ownership and social housing for rental, and the allocation of houses follows quota rules according to household type. It is located near a train station. Four interviews were conducted, with three men (61, 45 and 57, retired and student) and one woman (41, yoga teacher).

The third ecovillage was founded in the 1990s and comprises about 300 residents. There are both owner-occupied houses, build by the residents themselves, some build by professionals, rental apartments, apartments for people with special needs, and several community houses. The heating is provided by a wood pellet heating station, and solar thermal collectors. There are only a few roads going through the village, but regular driving there is not allowed, only for work or construction. Surrounding the village is a fruit orchard, shared organic vegetable production and fields for goats, chickens, and other small animals. The ecovillage also has its own shop selling organic products and a small café, a repair shop, a bakery, and a secondhand shop. There is also an e-bike and a car-sharing club. It is near a train station and close to a city. Four interviews have been conducted with two men (59, sustainability manager and 39, IT developer) and two women (62, social worker and 56, consultant).

In Italy, two different ecovillages have been researched. Both are settled in rural areas. The first one was founded in 2017 and directed towards the goal of having a as light as possible ecological footprint. It comprises agricultural, self-building and cultural projects. 5 persons have been interviewed in this ecovillage, including the founder and two co-founders (one woman who started the project, and two men between 37 and 51), and two young women (29 and 25), one who recently became a resident and one who is a volunteer. Most of those respondents dedicated their time to the ecovillage and work outside only occasionally. The second ecovillage is based on the concept of slowness and focused on having the lowest impact on the planet. A group of seven people started the ecovillage in 1993, building it themselves using natural material. It has few residents (6 to 7) but is involved in different local activities and associations (about 59 persons involved). One person, who is one of the founders of the ecovillage, has been interviewed (man, 57, electronic engineer).

In Latvia, three different ecovillages have been researched, all located in rural areas. Ecovillages in Latvia are influenced by global ecovillage and permaculture movements as well as neopagan and self-sufficiency narratives in Western and Eastern Europe. The focus of ecovillages in Latvia is on community development, sharing of resources, permaculture gardening, renewable energy and ecological construction. While some ecovillages were founded many years ago, none of them have established themselves expansively and members do not exceed twenty (including children). The communities are built without outside support and find many challenges to development due to unfavorable agricultural policies. All three ecovillages are closely allied with the permaculture movement and one of the communities is off-grid. Three interviews have been conducted (one in each of the above-mentioned ecovillages) with three men (36, permaculture consultant; 55, agricultural entrepreneur; 37, lecturer).

In India, an ecovillage built on a project of regeneration of degraded land has been researched. This experiment has started in 1992 through a trust. The foundational elements of the initiative encapsulate spiritual harmony (defined as inner work that ensures that thoughts and actions emanate from a sense of centeredness), and ecological balance (defined as outer work that respects the natural cycles and interconnectedness of all things). The community has founded a Community-Supported Agriculture (CSA) initiative comprising 28 families from nearby villages in addition to two families from the ecovillage. The CSA sells products through a store on the campus and through organic retail outlets too. The revenue generated goes to the Association of Persons (AOP) group and is distributed among the CSA members. All the land and property are held by the Trust and there is no individual ownership of land or property within the campus. Contributions from residents, as well as visitors, guests, and friends, enable its sustenance. The residents of the ecovillage are full-time volunteers and can voluntarily take up roles based on their interests like land-based work, bank work, etc. The residents must pay a yearly membership

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fee to the trust based on their internal guidelines, but they do not work outside the ecovillage. Nine interviews have been conducted with four women (86, 53, 40 and 37) and five men (67, 60, 56, 48 and 43). Three of them are part of the CSA.

3.4.2 Goals, values, role of sufficiency in the initiative

In ecovillages, sufficiency is often understood primarily as self-sufficiency, meaning the ability to fulfill the needs of the community without resorting to the capitalistic society and respectfully of the environment. A discussion on what is needed by the community is thus inseparable from the quest for self-sufficiency, which is often described as the ultimate goal for the project. Therefore, ecovillages usually aim at reducing the ecological footprint in all areas of consumption, even though in different ways. Sufficiency or close concepts (such as "well living" or "equilibrium") are well-known from participants, because ecovillages typically represent a needs-based lifestyle. Some variation can be found across countries, with more focus on eco-restoration in India than other countries, but all ecovillages seem to share the same principles.

3.4.3 Motivations and needs addressed

A notably distinctive feature of ecovillages is that unlike other initiatives, the desire to decrease the lifestyle's impact on the environment is explicitly put at the centre of the lifestyle choice. Participants in ecovillages are often people who have a long-lasting commitment to the environmental cause. Their commitment has been fueled by previous experiences with sustainability-oriented initiatives and/or political activism. Living in an ecovillage offers them the possibility to have a practical application of their ideas and life principles. It is precisely its encompassing dimension that makes it particularly desirable for people who wish to take their pro-environmental commitment a step forward, and to find meaning in the fact of taking part in the transition process:

"it offers me opportunity to give a sense, to question myself , to meet nice people, to learn…and to put in practice what I've learnt in 10 years of activism"
(Man, 46, Italy).

"I was moving towards a low carbon footprint lifestyle closer to the land, growing my own food and off the grid kind of life and it ticked my boxes even though I never realised I had these boxes" (Woman, 53, India).

For many people living in ecovillages, self-sufficient small groups and/or villages appears as the most sustainable way of living, even as an alternative society model.

"Here, you can come with your dream and your ambition of the most sustainable life you can imagine, and then you can work to realise that dream! This place was ambitious, trying to find new methods and ways of doing things"
(man, 45, Denmark).

Ecovillages combine the quest for autonomy and self-sufficiency that we found in the tiny houses movement, with the need for community that we found in CSA and shared housing projects. Indeed, community is widely referred to as a motive for joining an ecovillage, in all countries.

"Community and sustainability always go together for me. There are people who care about environmental sustainability but don't care about the relationships within the group… That's not for me". (Woman, 25, Italy).

"If I want to live ecologically consistently, I can't do it alone. If I want my energy supply, mobility, food supply, if all that is to be ecological, then […] I need a group for that."
(Man, 63, Germany).

The sense of community is felt through the fact of sharing daily life, knowledge, and to build things together as it is quite typical that ecovillage dwellers build their house themselves, with the help of the community. Absence of hierarchy is also sought for.

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Dissatisfaction with the mainstream, consumerist lifestyle is also an important factor for wanting to join an ecovillage. Many respondents refer to their urban life as imposed on them by society and not really chosen mindfully, as this retired Indian respondent explains: "*After 20 years of working we decided that we will try another side of life where we could do what our heart wants and where we could find joy in doing*" (man, 67, India).

The opportunity to live a rural life and to be closer to the environment is a frequent motive for respondents especially in India and Latvia, along with the conviction that small size rural units are the only sustainable way of inhabiting the planet, but also the most resilient. Like in the tiny houses' case, some respondents mention ecoanxiety as one of their motivations to change lifestyles and join a way of life that is perceived as more resilient to the crises:

"This was a process of reflection over the last ten years, as it is a step towards increasing one's independence and resilience. Assuming in how uncertain time we live, if I have more control over more aspects of my life, it creates, on the one hand, greater security for me and my family."
(Man, 37, Latvia)

Spirituality is also mentioned in Latvia and India. But most usually, the motivations are a combination of all the above-mentioned aspects:

"It was very much about climate, about community and about getting out of the city … I had worked with city-gardens for a few years but I wanted more. I grew up in the countryside and I was missing something that was not just concrete and pavement and concrete and more pavement…"
(Woman, 41, Denmark).

3.4.4 Change of habits and impacts

Ecovillages require high level of engagement. Unlike other initiatives that are sector-based, ecovillages embrace the whole lifestyle: nutrition, resource consumption, time allocation between paid and voluntary work, residential choices, mobility needs and habits, and even social relationships. "*Basically, the project changed my life*", summarises one of the respondents (man, 37, Italy).

- Health, wellbeing

Personal growth and self-realisation are often referred to as positive impacts of living in an ecovillage:

"I founded in the project the way to catalyze most of my interests related to social, building, sustainability"
(Woman, 51, Italy).

"Community for me is a synonym of personal growth"
(Woman, 25, Italy).

Living in accordance with one's values and ideals also brings less distress and a sense of fulfilment about doing the right thing, as several respondents in Italy, India and Denmark highlighted: *"I really like the fact that I can live a life where I do not feel that I have to compromise"* (man, 57, Denmark). In India and Germany, the opportunity to practice yoga is also referred to.

In India and Latvia, the access to educational opportunities (through social support mechanisms in India) for children are also mentioned:

"Our children's education was the biggest benefit after moving here. The second thing is health care. The third thing is that things are way better here than they are outside. There is dust, noise outside which is not there here. That is the biggest thing"
(Man, 43, India).

"When we were starting our family, we also searched for a place for settling. I was always interested in living in the countryside closer to nature. I think there are many families in the same situation – you have an apartment in a city but in parallel you are developing a place for your future with the thought that your children will have better conditions for living and growing up.

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That's the most important motivator I guess."
(Man, 36, Latvia).

Indeed, many respondents highlight the positive impacts of living closer to nature on wellbeing and health, through the access to quality food. In all countries, the improved quality of social relationships is also an important benefit, with a shared support from the community for the elderly, the sick and the children.

Trust can also raise the level of self-confidence:

"The ecovillage effect for me was that I started to believe in myself more, and I started to do new things"
(Woman, 29, Italy).

- Rebound and spillover effects

The main rebound effect of ecovillages is remoteness, that leads to increased mobility needs. Car-dependence is important since in many cases, ecovillages are poorly connected to public transportation, as this respondent explains:

"The car is a critical element. But it is necessary, both for me and for the ecovillage".
(Man, 37, Italy)

That said, dwellers are well aware of the carbon footprint of transportation and try to keep their mobility needs as low as possible. When available, public transportation is preferred. In Denmark and Germany, ecovillages under study seem to be better connected to the public transportation network than in Italy, Latvia, and India. In those countries, people are also keen on carpooling and sharing cars for the necessary commutes. Those, however, depend on the ability to find local sources of income, whether through personal savings, retirement benefits or local job opportunities. When those are lacking like it has been underlined by respondents in Latvia and Italy, people are forced to travel back and forth between the city and the ecovillage:

"It's very hard with our economic model to live in the countryside. But if you remain in the city, it's unreal to drive here as it's expensive and creates a large footprint. So in the end it will be against your principles of reducing emissions."
(Man, 55, Latvia).

Finally, another rebound effect is the fact that many ecovillages are made up of detached houses, which are not the most sufficient form of housing.

Spillover effects are numerous, as ecovillages are transversal initiatives that impacts the lifestyle as a whole, as this respondent from Denmark suggests:

"The grocery store sells organic produces, and we have a car-sharing initiative, so there are things here that you can use. There is also a well-established tradition of giving things away that you no longer need"
(Man, 45, Denmark).

The housing tends to be as sufficient as possible, with changes in the notion of comfort and a very careful use of natural resources, as this respondent explains:

"Most people who live here, live in conditions that are very different from the level of comfort we're used at home. I'm an example of it"
(Man, 37, Italy).

Hence, ecovillages often are innovative ongoing experiments in the areas of building, energy, water, and waste systems. Most of them are self-sufficient in water and electricity, and some of them are also off-grid. This both stems from their remote location and from their quest for self-sufficiency. Though creating legal constraints (see next section), the fact of being off-grid and self-built also allows for all kinds of experimentations, that ecovillages share and exchange from one another.

Another usual feature of ecovillages is the presence of vegetable gardens and/or permaculture projects. This possibility is often at the basis of ecovillages' philosophy, even though few ecovillages achieve in being self-sufficient foodwise, as this Italian respondent states:

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"The biggest improvement, for me, would be from an agricultural point of view. We should expand the garden. Out of the people here, only 3 are fully self-sufficient from that point of view".
(Woman, 51, Italy).

Besides their home-grown food, ecovillages often support or even participate in Community-Supported Agriculture (CSA) initiatives and have cobenefits that extend beyond the community, to the whole neighbourhood. This is particularly the case in India, where the CSA system put in place by the ecovillage involves a majority of small farmers around the ecovillage, who are offered the opportunity to generate income through their production and to access buyers through the ecovillage's network of retailers. This retains them in the countryside and avoids migration to the city, where they would be vulnerable to unjust living conditions. Local communities also benefit from eco-restoration. In India, a large part of the land is dedicated to wilderness preservation, several activities are around land and forestry management including trail and fence maintenance, fire control measures, tree planting, erosion control measures, security watch to prevent traps and poaching and cattle management. Ecovillages also often have dense relationships with the local associations, they can provide space for meetings, events, etc. Social housing opportunities can also be offered to the local population, but this has been found only in Denmark, and to some extent, in India.

Regarding diet choices, our data show that many participants are either vegetarian or vegan (Italy, Germany) or at least tend to reduce their meat consumption (Denmark). Local organic food is generally preferred, while the fact of sharing meals and/or eating self-produced food can lead to diet and cooking routines changes, as this respondent from Germany explains:

"If you want cheese, you really have to spend money, that's why you don't do it"
(Man, 63, Germany).

Similarly, the miscellaneous consumption habits change radically. Some habits can be seen as extreme: no toothpaste, no toilet paper, no chemical products are allowed in one Italian ecovillage. More broadly, practices of giving, exchanging and repairing are the rule in ecovillage. The absence of advertisement, mainstream culture and even stores to purchase things lead some dwellers to stop any shopping at all:

"There are hardly any incentives to buy anything"
(Man, 63, Germany).

As this respondent from Denmark explains, social affluence is sought for, in replacement of material affluence, as a vector of identity:

"We all want to be integrated, in a meaningful way together with other people. But if we do not have a community to be part of, people might consume in a specific way or dress a certain way, to feel like they are part of a group. It becomes about external things that you have to "adopt" to be part of something. But if you have something to gather around, something in common, it is different. I think our obsession with consumption is somehow a result of social disintegration. People try to compensate …"
(Man, 57, Denmark).

Finally, the fact of being part of a community leads to more change and collective action, as we also noted in the case of shared housing. For temporary participants (woofers, volunteers), the experience of living in the ecovillages can lead to raising awareness:

"The more I learned the more motivated I was, because I learned about the negative impact of our action, and I did not want to contribute to it"
(Woman, 29, Italy).

3.4.5 Negative effects and barriers

The main barrier to the foundation of ecovillages is access to land and funding for such projects. In the absence of support from local and national authorities – whether on land planning or on accessing funding opportunities, those rely on the resources of participants. In the case of an

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Italian ecovillage, the project could start because one of the co-founder inherited money, and succeeded in finding a place that suited the project:

"I tried 3 times to purchase the place for the village and it didn't work out. At some point I even thought that life wanted something different for me… That it wasn't meant to be"
(woman, 51, Italy)

In all countries, participants report that those projects need many financial resources:

"What hinders to move rapidly is the lack of a permanent house for living. In Lithuania, in a similar project they've defined that their goal is to speed up people settling in the place and they don't even create gardens but focus on building a house. But to do that they lend money to each other. We don't have such opportunities here. Therefore, it happens slower, but according to our conditions."
(man, 36, Latvia).

Financial stability and finding means of subsistence locally are also an important barrier. As mentioned earlier about mobility needs, it can be challenging to find income resources in an ecovillage. In some cases, like in India, internal social redistribution mechanisms allow households with no savings to access housing, since there is no property nor rental of the houses, and work in the CSA can suffice to cover the basic needs, while people hailing from monetarily privileged backgrounds participate in the global funding by spending their own money for construction. This is, however, not the most common case. In many cases, self-building a house does cost money and this money must be earned outside of the ecovillage, or held through savings. Hence, while telework can be described as a lever in Europe, it is seen as a potential disruption of the self-sufficiency philosophy in India, and an unnecessary need:

"if people are living and working from here it would cost more to get the required internet connection"
(Man, 56, India).

"Luckily here the signal isn't great. We keep telling people that it's not a bug, it's a feature"
(Woman, 53, India).

Time needed for self-producing, training and taking decisions is also an important barrier, as this respondent reckons:

"People spend so much time on this place. Doing practical work, on conflict management, on production and daily running and taking decisions and so on - It requires time and commitment" (Man, 45, Denmark)

That said, voluntary work is not regarded as work, but pleasure, as the interview excerpt below shows:

"We work every day, and all day long: but you make your passion your day…then you are satisfied"
(Woman, 51, Italy)

Time pressure, however, is particularly high for those who keep a job outside of the ecovillage, who then can get frustrated not to dedicate enough time to their project:

"I want to grow at least a portion of the food myself. (…) But it's also not an end in itself to grow everything for yourself, because it's a time budget thing again."
(Man, 37, Latvia).

In all countries, some ecovillage dwellers report finding it difficult to keep the same routines outside the ecovillage. This can lead to reduced contacts with family and friends, or even conflicts. One couple in India also stated that their children, having grown up in the ecovillage, found it difficult to adjust to city life as adults.

Finally, ecovillages bear the same barriers highlighted about shared housing regarding community life. Living in a community can lead to lacking and anonymity, and bears risk of social control. Personal conflicts sometimes arise and can endanger the project.

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3.4.6 Adoption and diffusion

- Adoption

As mentioned before, ecovillages are frequently built from scratch, meaning that joining an ecovillage is often a very long process which requires strong determination. Before starting their own project, many ecovillage dwellers have been visitors in other ecovillages, volunteering for short periods of time (summertime) or occasionally. It is usually after having had a first experience of what living in an ecovillage means that participants decide on taking on their own project:

"*I started by coming to help out a bit for a month, I was still studying… (…) Inside me, it was clear from the beginning that I wanted to live here*".
(Woman, 25, Italy).

"*I wanted to do voluntary service […] and then I came across ecovillages and because I am very interested in ecological life or I try to live in an ecologically sustainable way, it was a good fit*".
(Woman, 20, Germany).

Once the decision of lifestyle change is made, participants usually do not refer to any "adoption" process. Quite on the contrary, they feel a relief in the fact of being in a place where their preferences and social practices are mainstream, as those two participants explain:

"Society out of here is an obstacle to my lifestyle. When I didn't live here, I found it very hard to find solutions that made sense for me" .
(Woman, 29, Italy).

"The question/prompt about adjustment and adoption into the community suggests that rural life is difficult or one is depriving themselves of something by moving into a rural community etc. Rural life is about living comfortably, and the question is irrelevant".
(Man, 69, India).

- Diffusion

The main lever for adoption is also the main lever for diffusion: ecovillages are inspirational places that get a lot of visitors. Since ecovillages form a worldwide movement, those visits can come from all over the world, and many practices in permaculture, for example, are inspired by foreign experiences. For example, the Indian ecovillage shares learnings with visitors of all ages through workshops to plant some seeds in them and look forward to some change:

"We have touched so many lives and many have gone and started similar initiatives that is the satisfaction you feel about this"
(Man, 60, India).

This idea comes across many participants' narratives. Living differently is thought as a counter-model against the materialistic society:

"We can show people that come here to visit how things can be done differently. We start from ourselves, we try to act as role models"
(Woman, 29, Italy).

Most respondents believe that eventually the benefits of ecovillages will be more widely recognised and disseminated throughout the society. To that purpose, they organise events, are opened to the local associations, participate in raising awareness locally. In that sense, ecovillages are way more "activist" than other initiatives.

3.4.7 Levers

In a way, ecovillages accumulate all the levers and barriers of other initiatives, because they encompass all dimensions of lifestyles, and most of the social practices described before. This makes them at the same time very impactful (they can make a real difference) but also very challenging to mainstream.

- Social habits

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Skills in non-violent communication and willingness to live in a community are important factors for the success of the initiative. This explains why participants in ecovillages often are people with a long-standing experience of activism, and/or alternatives. An important lever would thus be to accommodate more room for learning and experiencing the tools of collective communication, for example at school. These skills are learned in some countries but not all.

Sufficiency skills, such as gardening have also been lost through the generations in most industrialised countries. Going back to learning basic construction and gardening skills could help participants to save time on learning things that they have never been confronted with before.

Finally, curiosity is an important lever since ecovillages are frequently seen as utopias and fantasies for original people. Having the opportunity to visit one and see for oneself would allow a larger part of the population to counter those stereotypes. Entering networks of volunteers such as the Erasmus+ program could help ecovillages gain more audience.

- Infrastructures

Bureaucratic and administrative burden is often referred to as one of the main barriers to the creation of ecovillages. Funding opportunities would allow a broader range of individuals to access ecovillages, since land and houses are often expensive, and as for tiny houses and shared housing initiatives banks are often reluctant to give loans outside the mainstream real-estate market.

Providing support and administrative facilitation would thus be an important lever to secure access to funding and to broaden the access to a larger share of the population (for example, by providing social housing). Support in the development of energy and water self-sufficiency would also allow less skilled individuals to participate in such initiatives.

Local municipalities could also support the establishment of ecovillages through land planning in order to revive depopulated areas, as this respondent from Italy suggests:

"Institutions did not even do the basics for us, like providing water, building streets… We were the only people coming to repopulate a dead valley, but they didn't see us like something that could bring value to the area"
(Man, 57, Italy).

Better transportation and accessibility are also a lever for enhancing the sustainability of those lifestyles. Our data shows that wherever available, public transportation and/or active modes of transportation are preferred by dwellers. Like for tiny houses, the fact that those kinds of housing are not considered in traditional land-planning forces them to choose remote locations where land is more available and affordable.

Finally, the agricultural policy could support the establishment of small-scale farms and community-supported agriculture rather than intensive, exportation-oriented farming would benefit to ecovillages with a small farming activity, as this respondent from Latvia regrets:

"The agricultural funding is given to turn meadows into forest plantations or chemical agriculture or to create aquacultures or to plant pasture grass which is not better than canola. This all creates monocultures, it's absurd. I've tried to apply for funding for biologically valuable grasslands, but I have given up after 2 years after the complex rules. All the financial instruments lead in the opposite direction than sustainability."
(Man, 55, Latvia).

- Social frameworks

Again, the availability of time to learn and to try new things is the main lever: the ecological lifestyle is more time-consuming especially at the beginning, when new processes have to be learnt.

Policies that enforce working-hour caps to facilitate creating space for slowing down would also help more individuals to engage in such lifestyles. Such policies can also create conditions for increased self-dependence towards performing household chores and equitable distribution of the same within the household.

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The availability of local jobs is also an important lever, and/or social policies that would not force people to look for paid work outside the village. Social policies could support the transition towards the establishment of a locally based activity (such as crafts, farming, etc).

3.5 Overview on the carbon calculator results

Besides the interviews, we have asked respondents from the intentional communities to fill in the carbon calculator that we used for panel respondents. The aim was to investigate to what extent their intention of leading a more sufficient lifestyle had impact on their carbon footprint. Since the carbon calculator was an online tool, we had to ask respondents for their email address and send them the link for completing the survey after the interviews. It was a voluntary participation and not all respondents agreed to participate, despite sending several reminders. Additionally, this option was not offered to respondents in India, because the timing of fieldwork and survey were not compatible.

Out of the 94 interviewees (excluding India), approximately half accepted to complete the carbon calculator (48). This includes 5 persons in Germany, 10 in Denmark, 13 in France, 8 in Latvia and 12 in Italy. This does not allow complex statistical calculations. The results, however, show clearly that their intention to pursue a sufficiency-oriented lifestyle does have impact on their carbon footprint, though in various ways. The table below display the differences between average scores of the general population surveyed in T3.1., and respondents from initiatives, in each category and each country. We have excluded electricity from this analysis, since the way electricity was calculated for carbon footprint calculation was not accurate for measuring the volume of consumption (i.e. green electricity was creating negative footprints, which was likely to affect the average and distort the results). We also did not include pets, because this wasn't part of the focus in the interviews.

	Heating	**Transportation Car + Motorbike**	**Diet**	**Total**
Germany	-30%	-72%	-10%	-35%
Denmark	-81%	-17%	-12%	-28%
France	-33%	-28%	-10%	-21%
Latvia	-75%	-65%	-17%	-49%
Italy	-24%	-24%	+2%	-12%
Total	-55%	-38%	-10%	-32%
Average CO_{2eq} (initiatives, all countries)	475	896	1412	2784
Average CO_{2eq} (general population, all countries)	1067	1443	1571	4082

Table 6. Carbon footprint of initiative respondents, when compared to the national general population's, by sector and by country.

If the **total carbon footprint decreases from roughly a third**, **results show important differences according to both sectors and countries**. **Heating is the most impactful sector**, especially in Denmark and Latvia. The decrease is less marked in France, Italy and Germany, despite the fact that the carbon footprint of heating is particularly high in Germany (1989 CO_{2eq}, vs. 1067 in all countries). The standard deviation in this category is relatively high, of about 50% (658 CO_{2eq}). We assume that this important decrease is due to the fact that most respondents live in energy efficient buildings and have had an interest in the energy consumption of their home, whether it be through renovation or efficient construction (frequent in the ecovillage and

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cohousing projects for example), or through the choice of a less carbon intensive mode of heating. Even if we did not investigate energy renovation as such, it is an interesting result to see that it seems to be a common feature of our interviewees – despite with some differences in terms of intensity.

The transportation sector is the second most impactful, but with very important differences between countries: from -72% in Germany and -65% in Latvia, to -24% in Italy and -17% in Denmark. When looking at the individual results country per country, we also see a lot of heterogeneity within the sample of initiative participants. Some initiative participants even display a higher carbon footprint than the average in this sector. This is the case of one respondent in Germany, two in Denmark (who even have a carbon footprint more than twice the average), three respondents in France, and three respondents in Latvia. Among a sample of 48 interviews, this is not anecdotical. This quite inconsistent pattern reflects the diversity of the locations of the respondents. Indeed, those located in city centres frequently are car-free and thus have a 0 in this category, while those located in the countryside can have very high carbon footprints due to the intensive use of the car. The standard deviation is very high (1309 CO_{2eq}). The heterogeneity of this category reflects the fact that regarding transportation, the carbon footprint is less dependent on individuals' willingness to take action than on the availability of transportation infrastructures. This is consistent with the decision we made not to focus on transportation as a part of the individual lifestyle, and to adopt an accessibility-based approach. However, this also highlights some of the contradictions of sufficiency-oriented lifestyles, for example the fact that ecovillages are remote and thus car-dependent.

The diet seems to be the most consistent, and yet least impactful category. It ranges from -17% in Latvia, to +2% in Italy, with all other countries being around -10%. When looking at the individual results, we can also see a rather small standard deviation (258 CO_{2eq}). This is a rather surprising result, because food is an important part of the global carbon footprint (Crippa et al. 2021), and one that is considered as quite easy to act on. However, the focus that is put in most of the initiatives we investigated on "eating local products" may not be the most impactful on climate. The diet is far more impactful (and particularly the quantity of animal-based products).

Another interesting way of analysing results is to look at the relative weight of different sectors in the global carbon footprint, both for initiatives respondents and panel respondents, in all 5 countries (see table below).

		Heating	**Transportation**	**Food**
Germany	Initiatives resp.	42%	11%	45%
	General pop.	42%	26%	32%
Denmark	Initiatives resp.	5%	56%	39%
	General pop.	19%	48%	32%
France	Initiatives resp.	20%	24%	55%
	General pop.	24%	27%	49%
Italy	Initiatives resp.	9%	30%	61%
	General pop.	19%	44%	37%
Latvia	Initiatives resp.	21%	24%	55%
	General pop.	24%	28%	58%

Table 7. Proportion of different sectors in the carbon footprint, per country and type of respondents. General population refers to the respondents of the survey conducted in T3.1.

We can see that **despite important national differences between countries, the composition of the carbon footprint of respondents from the initiatives is always following the global pattern of the national average,** except for the case of Italy in which the relative weight of food and transportation is different in the group of initiative participants. This tends to show, however,

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that **the composition of the carbon footprint of initiative respondents remains dependent, to some extent, on the national infrastructure.**

These results are interesting because they show to what extent people engaged in sufficiency-oriented practices manage to actually decrease their carbon footprint, and what are the main levers they use to do so. It must be noted, however, that this comparison has several limits. First, the size of the sample from initiatives is very small, especially in some countries (e.g., Germany), so it can't be considered a systematic measure, but rather an exploration. Second, many practices we have investigated are not taken into consideration in this carbon calculator (e.g., the fact of preferring second-hand over new things, the fact of sharing appliances, the fact of consuming less overall). Third, in order to really estimate the weight of the individual lifestyle choices, it would have been preferable to compare the initiative respondents with individuals who are similar to them in terms of residential location (rural/urban), gender and income (for the least). The scarcity and inner diversity of the qualitative sample does not allow for complex statistical calculation, but is rather a tool for exploring the issue of respondents lifestyles' impact on their carbon footprint.

4 Average lifestyles and the energy and climate crisis

In this part of the work, we focus on respondents selected within the T3.1. survey database, based on their carbon footprint, gender, and income. The choice was made to select individuals with similar carbon footprints defined as average (see Methodology above), but from different income groups. The research question behind this choice was to understand how different life conditions may lead to similar carbon footprints for different reasons, and how different social groups with average carbon footprints react to climate change and to the concept of sufficiency. The context of the war in Ukraine also led us to consider the impact of the energy crisis and rising prices in most European countries on the daily habits and energy consumption of "ordinary individuals". Building on the hypothesis that the level of income is likely to have a significant impact on the ability of respondents to cope with this situation, we have analysed separately respondents from lower and higher categories of income.

With regards to carbon footprints, it must be noted that despite their being recruited in the same relatively large sample of "average" carbon footprints (20-80%), there is significant variation between interviewees, with individual carbon footprints ranging from 1814 CO_{2eq} to 6663 CO_{2eq}. Carbon footprints do not follow income in a regular distribution pattern, though this may be due to the fact that the sample is very limited (10 people per country) and that the people who agreed to be interviewed may have had a special interest in these issues. Despite this, there is a 10% difference, on average, between the low-income and the high-income footprints (see table below). Out of the 41 interviews conducted in European countries, 14 display carbon footprints that are lower than the average of those involved in the initiatives. It comprises 3 Danes, 3 French, 2 Italians and 6 Latvians. As shown in the table below, the carbon footprint of "average" respondents is particularly lower than the mathematical average in heating and transportation, but with significant difference between countries. This probably indicates that the top 20% of carbon footprints are significantly pushing up the mathematical average.

CO_{2eq}	Electricity	Heating	Transport	Diet	Total
Average (total sample)	170	1067	1443	1570	4259
Average (interviewees)	145	700	821	1581	3248
Low-income panel	141	648	608	1572	2970

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High-income panel	147	732	964	1613	3341
Denmark	131	624	1168	1657	3589
Germany	318	1211	748	1504	3782
France	47	523	731	1550	2851
Italy	176	624	1032	1555	3388
Latvia	68	568	403	1635	2675

Table 8. Carbon footprints of panel respondents

4.1 Lower-income households

Lower income households are defined as pertaining to income categories 1 or 2 (out of 4 in Denmark and 5 in other countries), so below the median income.

In addition, fieldwork was conducted in India in an underprivileged neighbourhood. Seven interviews were conducted with inhabitants from an informal settlement of 693 households close to a big city in the state of Maharashtra. Most of its residents are migrants from various states across India, and also from different districts within the state of Maharashtra itself. There are small factories around the settlement. Most residents work as truck drivers, watchpersons, helpers etc. in these factories. People also work as auto rickshaw drivers, house help and some as daily wage labourers at construction sites, while some take up small projects within the community itself, too. Originally self-built on a plot of undistributed land, the settlement now has access to electricity, water and roads after inhabitants demanded such services from the local government. The community still experiences water scarcity and feels the need for better roads, better sanitation facilities, and other services. The house structures also evolved over the years, from what was once an amalgamation of kutcha (tin sheet roofs and walls), semi-kutcha (brick walls and tin sheet roofs), and pucca houses (concrete roofs and walls). Most houses have a single room, while some have two rooms. Very few houses have windows and the lanes between the houses are narrow in most cases. This additional fieldwork was conducted in order to investigate the issue of the "floor" of sufficiency (as opposed to its ceiling, defined as overconsumption), within the framework of the "doughnut model". Because of the cultural and social particularities of this part of the fieldwork, the interview guide was adapted and not all topics below were included in the interview.

4.1.1 Social backgrounds of the respondents

About four people were interviewed in each country except India, where seven people were interviewed. In European countries, each sample was designed to comprise both men and women from income categories 1 and 2. A variety of age ranges was sought but was not always been possible to achieve given the rather limited sample to extract respondents from. In India, the focus was set on a diversity of households (single households, multi-family households, couples), gender and age.

In Denmark, two men (71 and 73, both retired with vocational training) and two women (45 and 27, an administrative officer and a student) were interviewed. They come from mixed backgrounds. One respondent says that she grew up with very little financial freedom in her family, while the rest say that they have never felt like they were lacking anything they needed.

In Latvia, two men (55 and 70, unknown profession and retired) and two women (66 and 40, a cultural worker and a tailor) were interviewed. They all come from either peasant or working-class backgrounds and have been raised in different environments. They all declare that their parents were not sensitive to environmental issues.

In Italy, two men (61 and 76, unemployed and retired with vocational training) and two women (60 and 52, a homemaker and self-employed) were interviewed. Two respondents come from wealthy families, one from the working-class and one from the middle-class. They grew up in the

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countryside (three cases) or in the city (one case). Three respondents declare that their parents cared about consumption and savings: "*My mother and also my father were very careful, even if they could afford to spend a little more, they were very careful about saving money, also because they came from the war"* (man, 76).

In France, three women (32, 35 and 44, unemployed, a homemaker and a temporary worker) and one man (63, a retired cook) were interviewed. They all come from working-class families except one respondent, whose parents owned an organic store. They all declare having been raised with the concern of not wasting, as this respondent explains: "*My parents were careful about not wasting, because of the budget. But they were not sensitive about the environment, because it was not an important subject then*" (woman, 44).

In India, the interviews were conducted with an elderly man (77) living in a tin roofed and walled house with his wife, a woman (35) living with her husband, two children and in-laws in a tin roofed and brick walled house comprised of two rooms, i.e., a kitchen and a living room; a couple (35 and 28) living with two children in a two-room rented house made of brick walls; a woman (37) living in a single room house with a with her husband and two children; a woman (35) living alone and a young woman (22) living in a single-room house with her parents and brother. They all come from peasant families; except one respondent whose parents are shop-owners. Most of them have little formal education (10th grade or below).

In all countries except Italy where three out of four respondents own their house and in India where property is also widespread, the majority are tenants.

4.1.2 Opinions on climate change and the energy crisis

The opinions on climate change of the low-income panel respondents vary greatly between countries. **Danes appear to be the most sensitive to climate change issues, with all respondents expressing high levels of concern and a willingness to act personally.**

"I am at a place where it (climate concern, ed.) doesn't take up space in my life in the sense of volunteering in various organisations or attending climate marches, or something. But I think about what I can do myself a lot! I want to make as much of an effort as I can in my life"
(Woman, 27, Denmark).

This situation contrasts with that of Latvia, where respondents express very few concerns about climate change. In France, Italy and Germany, respondents generally acknowledge for the existence of climate change, but the role of individual lifestyles is not seen as important. Several respondents in France, Italy, and Latvia point to the responsibility of big firms, or of big countries like the United-States or China.

"Yes, of course I'm worried about climate change. But the solutions are always theoretical. And it's always up to the little people like us! The big firms should be doing the big efforts."
(Woman, 44, France).

Climate scepticism is also to be found in several interviews in Latvia, France, and Italy. **What is called into question is not the reality of climate change, but rather its anthropogenic nature**: "*I don't believe in climate change, because I have experienced several climate changes*" (man, 76, Italy) ; "*The climate is changing, but I don't think it's because of what the scientists say about GHG emissions*" (man, 70, Latvia).

The energy crisis is much more of a direct source of worry for those respondents, except for Latvians who do not seem to be affected by the energy crisis. Most of them declare having cut on expenses to cope with the rising prices, especially on their leisure expenses:

"I drive less now… which means that I do not visit my family very much, they live far away… I also use my woodstove more, instead of the heat pump. A lot of things are more expensive now. There is no room for anything but necessities"
(Man, 71, Denmark)

Many respondents in France, Italy and Denmark have the feeling that they were already very careful about their expenses, and question what more they could do:

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"We already had very low energy use, so it wasn't really possible for me to reduce it even more! Both electricity and heating – my consumption is very low when you compare it to the statistics for similar homes"
(Woman, 45, Denmark)

Indeed as we have seen, **respondents from the low-income panel have relatively lower heating footprints, and the energy crisis has led them to try to reduce it even further**.

Those topics were not explored with respondents interviewed in India.

4.1.3 Daily habits, changes, and impact

In all countries except Latvia, most respondents declared having changed their habits as a result of the energy crisis. These changes include a reduction of electricity and heat consumption (all countries except Latvia), reduced car use (France, Italy, Denmark), reduced heating temperatures (France, Italy) reduced number of rooms heated (France), and eating less meat (Germany).

Despite being often driven primarily by economic concerns, these changes are generally not described as forced, but as voluntary. Only few respondents refer to forced changes, mainly in terms of heating (France and Denmark).

Many respondents have the feeling that they have been amplifying concerns that were already present, as exemplified by this respondent from Italy:

"So I had already changed my habits a long time ago and I still maintain them, in the sense that I try to save more, especially on water, in the sense that if I have to fill a bucket with water to wash the floor instead of filling it all the way up, I try to fill it halfway. Even with gas I try to do one pot, even for the shower, five minutes maximum."
(Woman, 69, Italy).

In France, most of the interviewees do not relate their change of habits to climate change concerns. Some talk about environmental protection in general, but only one respondent displays clear climate change concerns, explaining to avoid packaging and food waste, and to limit the duration of showers for climate reasons. However, all interviewees are careful about their expenses:

"We've always been very careful about what we do with our money, so it doesn't change much. We only have less leisure, because we try to take the car less."
(man, 63, France)

With regard to food consumption, in all countries price is decisive for the respondents' food choices, but there are important differences between countries.

Danes seem to be the least constrained regarding their food options. Most respondents say they prioritise organic food. Two respondents have thoughts about their meat consumption but find it hard to reduce it. One has weekly meat-free days.

"We have considered cutting down on meat consumption many times, but we easily fall back into the old habits every time we try to eat more vegetarian. But this is one of my habits that I would like to change"
(Woman, 27, Denmark)

Local markets and farmers are also preferred in Italy, because of reduced costs and increased freshness. The consumption of meat is not systematic. **By contrast, the German and French respondents all go to the supermarkets for their shopping, as it is considered cheaper, especially with coupons and sales promotions**. **Local and organic food is seen as a luxury that is not very affordable.** However, some interviewees would be interested in local food if it was easy to access in their neighbourhoods and affordable. A decrease in meat consumption is not considered positively in Latvia or in France, as meat is seen as a necessary part of one's diet: "*Decreasing the meat consumption, no. It's in our DNA. We try to eat good meat, unprocessed, that's already something*" (man, 63, France).

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Respondents from India are the most constrained regarding their food options. Meat is rarely eaten except for chicken. The diversity of food is lower because the community depends on seasonal and locally available food: *"Food choices are made according to what is available at the market, as seasonal vegetables are readily available at a reasonable price, whereas non-seasonal vegetables are costly and not affordable*." (woman, 35, India). Rotis (Indian flatbread), seasonal vegetables and rice are the staples, and respondents eat home-cooked dishes primarily. Price is the main determinant of people's food choices, followed by health considerations. Most respondents indicate that they are content with the food they consume. However, they also express the desire to eat out and try new dishes occasionally. Money is a barrier to meeting this desire.

Regarding transportation, most respondents from Italy, Denmark, and France declare reduced their car use. In Denmark, respondents with daily access to cars seem to only drive them when they view it as necessary. In France, respondents declare having cut down on their leisure and holiday trips. In Germany, cars also do not seem to be used very often. There is a clear-cut difference between, on one hand, pensioners, homemakers, and unemployed individuals who seem to use their car only to access places they cannot reach by foot or public transportation, and, on the other, working people who rely on cars for their commutes. In France, Italy, and Germany, respondents report an increase in walking, which is seen positively: "*I really enjoy walking more, it's pleasant*" (Woman, 32, France).

Bicycles are rarely used, except in India where rather large distances used to be travelled with bike, as this now 77-year-old man recalls from his youth: *"I used to travel for 50-60km by bicycle when I was young and able to do it*". In all countries, health is a frequent motive for not using the bicycles, which are seen as too sporty or dangerous. Most respondents do not use long-distance trains or buses, except in India, where many respondents have family living far away.

Many respondents feel that they have a reasonable consumption of goods, mainly out of economic concern, except for Denmark, where respondents are all very conscious about the environmental impact of consumption. The respondents who buy second-hand often enjoy the fact of having unique objects.

"Aside from those basic things like being better for my finances and being more sustainable, to me it is also just … a nice thing … I like the fact that things have a history, they somehow have more soul. I must say, I might be a little materialistic, but in a very nostalgic way! I also love giving new life to old things!"
(Woman, 27, Denmark)

"No, I'm not a frequent buyer, I always tend to use as much as possible what I have. I buy a new item, when I see that it can no longer last."
(Man, 61, Italy)

"We change [appliances] only when they stop functioning."
(Woman, 35, France)

Sharing through institutionalised practices is not common among the respondents, nor is second-hand buying (except in Denmark, where it seems to be widespread). However, informal gifts and lending are common: "*I don't buy second-hand but people have given me things. And I also give things myself*" (woman, 44, France).

In India, the amount of electrical equipment owned by respondents is very limited. Electric bulbs, a fan and a mobile phone is the most common equipment across all houses. Most respondents declared themselves satisfied with what they have, but some express aspirations to own a mobile phone, a television, a washing machine, and a cooler to provide relief from the summer heat.

In Germany and France, the size of living surfaces of low-income respondents is below the average. Respondents from France express their desire for better insulated homes, which would allow them to cut down on heating expenses, while German respondents would fancy a bit more space, a bathtub, or fewer stairs.

In India, the people interviewed have migrated from villages to the city primarily for livelihood purposes and for better educational opportunities for their children. Their house structures have

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evolved over the years. Some respondents who used to live in rented spaces initially, now own the houses they live in. **Owning a house of their own was and is a priority for all respondents.** The community still experiences deprivation from basic services. Most houses have a single room, while some have two rooms. Very few houses have windows, and the lanes between the houses are narrow in most cases. The residents wish they had access to water and electricity without cuts, and need bigger houses:

"Currently we all live in the same house. We need a bigger house as it doesn't feel good and its uncomfortable as we sleep, cook and live in the same room (…) *We need to improve the basic amenities in the house such as having a toilet and bathroom in the house, and having one more room, as the children are growing. The roofing needs to be changed before the monsoon arrives to avoid water seepage"*
(Woman, 35, India).

4.1.4 Barriers to the adoption of sufficient practices

The interviews with respondents from low-level income categories show that many of the barriers to the adoption of more sufficient practices are infrastructural. Indeed, with the exception of Latvia, where sufficiency does not seem to be a concern, most of the respondents from the low-income panels expressed sufficiency-oriented values – even if generally not out of environmental concerns. However, their levers are limited by the accessibility and affordability of alternative choices.

In Denmark, the energy crisis has particularly hit people who are not connected to the district heating network. One interviewee in this case has invested in electric heat pumps in recent years, as these were marketed as a good, sustainable choice of heating, but are now (in 2022) affected by rising electricity prices. Indeed, lower-income households are more likely to be affected by contextual elements such as fluctuating prices.

In some countries, the accessibility and affordability of repair work is also an important barrier. It is often cheaper to buy new products than to repair old ones. Lower-income households thus try to extend the lifetime of objects as much as possible rather than repairing them once they are broken.

"I don't really repair things… it is too expensive to get it done. You have a quick look around, to see what it costs, and if it is not expensive you can have it fixed. But usually not."
(Woman, 47, Denmark)

The same goes for locally grown food, which appears to be an affordable choice only in Italy, while it is deemed too pricy in France, Latvia, and Germany, despite respondents declaring they would buy such food if they could. The lack of accessibility is also a concern since many respondents living in suburban areas do not have an easy access to locally grown food.

For most low-income households, energy equipment like solar panels is unaffordable: "*We do not have anything efficient (solar panels, hot water pump) because we cannot afford it today*" (man, 76, Italy). The fact of being a tenant also restricts choices in terms of equipment and potential improvement of the house: hot water systems can not be chosen (France, Italy), and changing the heating system depends on the owner, who may be reluctant:

"*We asked our landlord two years ago [about insulating], but he never did anything and always told us it was impossible."*
(Woman, 35, France)

Some respondents also mention the lack of clear perception of the impact of efforts made to decrease their impact on the environment: "*I am happy that I have succeeded in my own small way in trying to reduce my environmental impacts, but I have had no feedback*" (woman, 67, Italy).

Negative impacts are not widespread among interviewees, most of them have adapted to changes (such as walking more or pooling journeys) except for restrictions on heating, which impacts comfort:

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"It clearly has an impact on comfort. And there is also the mental load, of always having to remind to turn off the heating"
(Woman, 32, France)

This kind of energy sobriety that is more suffered than chosen and is adopted in reaction to the impossibility to face the increasing heating prices is different from sufficiency. **When individuals are not able to fulfill their needs, they are not likely to react positively to any governmental injunction to consume less. This is reflected in the political opinions they express** (see paragraph 4.2.7).

Lastly, it seems that sustainability is not a concern for Latvian respondents, for whom health and employment concerns seem to prevail over the rest. That said, the carbon footprint of respondents from Latvia is already lower than that of respondents from the other countries, and close to the average carbon footprint of participants in the initiatives (2711 CO_{2eq} for low-income Latvian respondents vs. 2784 for initiative participants), but their well-being is not so good and seems to be lower than in the other countries (except for India).

4.1.5 Levers for the adoption of sufficient practices

In Italy, one respondent mentioned the energy crisis as a lever for making important lifestyle changes:
"Households may have changed the way they consume. The crisis has acted as a bit of a lever and has prompted them to think and reflect to consume a bit more consciously."
(Woman, 52)

Some respondents engaged in sufficiency-oriented practices also mention the fact that they have learned gradually to change their habits, which is consistent with the trajectory of people we interviewed in the first part of this report: no change happens overnight, and it is a "step by step" process:

"*If you do it little by little, it's possible. That's what we try to do. We don't use plastic boxes anymore; we only have washable wipes… I cook a lot and I do a lot by myself*"
(Woman, 35, France)

In France, some respondents also put forward the fact that they are already focussed on the necessary and have always had a "sufficiency-oriented culture":

"It's always been natural for us, and we have always told our children to save electricity, to close the doors, etc. We try to do our best. For example, if we turn the oven on, it should serve for several purposes, not just one dish."
(Man, 61, France)

Indeed, low-income households have several sufficient practices that they do not label as such, for example the fact of lending or giving, or the fact of trying to extend the lifetime of appliances as much as possible. **They are however reluctant to participate in the sharing and second-hand market, and this seems to be related to a general lack of trust in institutions, and what could be perceived as governmental injunctions (see next paragraph), but also to a different material culture, with less objects circulating in their homes overall.** They generally seem interested in better insulation, green electricity and organic food and regret that they cannot afford it.

Having an income that allows one to make ends meet and fulfil the household's needs is also an important lever for sufficiency. This is particularly true for the "floor" level of sufficiency, which is exemplified by the respondents from the underprivileged neighbourhood in India. If viewed solely from the "carbon footprint" lens, the residents of this neighbourhood appear to have a very sustainable lifestyle: all community members purchase groceries from local shops that are located within 200-300 m of their homes. They travel by foot to these shops. All except for three respondents who own a motor bike travel by public transport, i.e. the local bus or auto rickshaw to travel to other places within the city. All respondents use the bus or train for long-distance travel across cities and even states. They eat home-cooked food, and few respondents purchase snacks from nearby establishments – only once in a while on their children's insistence.

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However, their lifestyle is not sufficient with regard to the fulfilment of needs and well-being. Respondents' general consumption choices are determined by their budget, which is not sufficient to cover all their needs, and frequently leads them to make trade-offs between different needs. Being deprived of access to diversity in their food choices, of minimum comfort standards (e.g., of sufficient space per person), or of the facilities they need negatively affects their well-being.

The provision of basic services and women's participation in the labour market are seen as potential levers for getting out of poverty by the community members in India. All the female respondents asserted the need to have home-based income generation work which they can engage in flexibly alongside their home-making work. Other pathways to alleviate their economic situation involved educating their children who may contribute towards the family's expenses in the future. One respondent shared that seeking loans from relatives is something the family resorts to when necessary. Protesting at the community level and pressurizing administrative authorities to provide facilities such as water, roads, etc. is another way to try to ensure enhanced living conditions that emerged from the interviews.

4.1.6 Opinions on policy measures

The main common point between interviews on the topic of policy is a general discontent and profound distrust towards governmental action. **Interviewees do not trust their political leaders to make the right choices and behave properly, except in Denmark**. In France, Italy, and Latvia alike, respondents condemn their leaders' lifestyle which is seen as particularly un-sufficient. Exemplarity is sought when it comes to political leaders, as this respondent underlines:

"For starters I would ask them to do the same things they ask of us. I feel like it is not fair to everyone. They don't realise how we live."
(Woman, 32, France)

The questions we asked about policy levers did not generate very specific feedback from the interviewees. **They generally seemed a bit lost in the energy transition debate and worried that decisions would end up in social injustice and/or worsening their current situation.** Many respondents pointed towards big firms, either as being those with the biggest impact on climate or as the main lever / key players for changing things at the global level.

Danes seem to be the most prone to accept policies based on incentives on individual behaviour, which is consistent with the fact that they are the ones that are the most convinced that lifestyles play an important role in climate change. More radical criticism is to be found in other countries, either leaning towards the far-right (priority on national jobs and wealth) or the far-left (criticism of capitalism). In Italy and France, some interviewees mentioned the problem of car dependency and the lack of efficient alternatives, especially in the countryside but also in peri-urban areas.

4.1.7 Differences between countries

In all countries, the concern for the economic parameter is an important part of people's lifestyle, which has shaped the way they live and the habits they have adopted throughout the years. For several interviewees, it seems that being aware of how much they spend, and of whether or not they actually need something before you buy it is just a "natural" part of how they live.

There are however some important differences between countries. In Denmark, respondents seem to have internalise both the climate urgency and the injunction to change lifestyles. This may be related to the fact that Denmark has the highest carbon footprint of all countries under study and that there is some awareness about the responsibility of being high emitters.

In Latvia, however, which is the country with the smallest carbon footprint (except for India, where the calculation has not been made but it can be expected to be lower[7]), there is strong

[7] COP 27 reports that India's greenhouse gas emissions per capita is still one third of the global average (2.4tCO^2eq, versus 6.3tCO^2eq for the average, and 6.8tCO^2eq for the EU).

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scepticism and reluctance to undergo lifestyle changes. Priorities are linked to the economy and health, and respondents do not seem to display a satisfactory level of well-being. The same goes for Germany, where respondents expressed feelings of unhappiness, loneliness, and social difficulties. This is specific to those two countries, since, except in relation to the energy crisis, the Danish, French and Italian respondents have not expressed feelings of being deprived or unhappy. On the contrary, some showed a certain degree of pride in the fact of living a "simple life", or to be pioneers of sufficiency in their own way.

In Italy, we can notice a strong interest in water management and droughts, which is rather specific to this country and linked to climate change in the Mediterranean area, which is particularly rapid and intense. Another specificity to be found in Italy is the clear-cut gender divide, with women being aware and concerned about climate change, while men are more likely to express climate scepticism.

In France, the low-income respondents we interviewed do not seem very concerned about climate change, nor about sustainability as a concept. However, they do display sufficient practices, because they are careful about not wasting resources (because they cost money). People interviewed positively identify with the concept of sufficiency but do not feel like they have any leverage to act. Living a simple life is more related to the ethics of the working class than to the lure of having more free time for self-expression as in intentional communities.

4.2 Higher-income households

Higher-income households are defined as pertaining to income categories 3 and above, thus including the median income and above.

4.2.1 Social backgrounds of the respondents

Between six and seven people were interviewed in each country, including both men and women. Participants were selected from the middle- to high-income group, divided between the different income brackets. In Latvia, the women were aged 24, 28 and 27 (a bookkeeper, a clerk, and a youth affairs specialist), and the men 65, 86 and 55 (a researcher, a physicist, and an engineer). In Italy, seven people were interviewed: four men aged 43, 77, 56, 69 (unemployed, retired, a banker, and retired) and three women aged 40, 37, and 46 (a homemaker, an engineer and self-employed). In Denmark, 3 men aged 58, 55, and 52 (a bus driver, a warehouse worker and an engineer) were interviewed, and three women aged 42, 33, and 43 (an interpret, a bioanalyst and an office worker). In France, three men aged 69, 72, and 63 (a driver, a former journalist, a railroader), and three women aged 45, 38, and 52 (a payroll manager, an executive assistant, a data manager) were interviewed. In Germany, two men aged 78 and 70 (retired and unknown occupation), and three women aged 57, 59, and 45 (a university teacher, unknown occupation and a professional) were interviewed.

Most French high-income respondents declared originating from working-class families, worried about saving because of financial but not ecological reasons. The elderly point to the post-war period as an example of sufficiency.

"There was less waste. There were no supermarkets. People did their own shopping, vegetables and so forth. We didn't worry about environmental issues"
(Man, 69, France).

"We didn't talk about the environment. My parents are rather conspiratorial. They are sceptical about all this. I moved to a different social class. I disagree with them; we avoid such topics so as not to get angry. We used to avoid waste for economic reasons; we came from a working-class background. They didn't specifically tell us to turn off the lights, but I think we did"
(Woman, 52, France).

The Danish respondents all came from different family backgrounds. Some grew up in cities, others in rural areas or smaller towns. Some had experienced financial strain during their studies, while others expressed that they had always "*had everything they needed*" (man, 55, Denmark).

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In Italy, all respondents were middle class and mostly living in cities. In general, parents were concerned about consumption and savings, but not from an ecological perspective.

In Germany, both German and European history play an important role in several biographies: many of them have lived in East Germany or in an Eastern European country or have moved from a rural to an urban environment, which has had an influence on their relationships with consumption.

Overall, for each country, these individuals are largely academically educated, some with a technical diploma, others with a second degree.

4.2.2 Opinions on climate change and the energy crisis

Most are worried about climate change, specifically concerning water resources, but more so for their children than for themselves. The concern seems to be particularly high in Italy, where drought is again a common fear among interviewees. However, many respondents claim to be more affected by the energy crisis on a daily basis, particularly in Germany, even though the majority could afford to pay more for their bills.

"I am worried about all the things you see on TV, but as long as it doesn't happen to you, it's different"
(Man, 54, Latvia).

Some are scared to learn more because they fear the consequences of climate change, and thus tend to avoid news about it:

"I used to follow the climate change debate closely and seek knowledge. Now I think it is a bit too depressing..."
(Man, 52, Denmark)

Others feel overwhelmed and not convinced that individuals can do much:

"I don't really think about it on a daily basis, because I can't really influence anything by myself."
(Woman, 24, Latvia).

Several respondents believe that climate change has natural causes. They all more or less agree that the topic is exaggerated. **They do not act to limit climate change, and some think they already lead a rather simplistic life.**

4.2.3 Daily habits, changes, and impact

Overall, many high-income respondents feel they are doing the best they can, do not see what more they can do, or are not willing to get more information. They are fearful of having to change their lifestyle, of losing their freedom and pleasure.

"We talk about the impact of streaming. But I don't want to hear about it, because watching something online is a small pleasure. We can't deprive ourselves of everything"
(Woman, 52, France).

"I don't feel like I am consuming so much"
(Man, 69, France).

Lately, the energy crisis had made them change their behaviour more than climate change. Differences are observed between countries. In Latvia, the respondents do not mention any changes in practices, while in Denmark and Italy, they have implemented new habits in terms of heating, travel, and consumption at large.

"I have tried to minimise my gas consumption, for example. I have changed my consumption habits and so I try to avoid buying unnecessary things or to cut down on all these things here, maybe starting to walk short distances or riding my bike instead of taking the car"
(Woman, 40, Italy).

Some respondents have switched to bicycles or electric vehicles, others have reduced their shower time, etc. A few are considering improvements to their homes, such as better insulation,

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but for many the rise in prices, particularly of electricity, has made them more aware of energy consumption. They actively monitor their consumption and the price, as they want to save energy.

In Italy, changes are experienced as coerced but also as deliberate.

In Denmark, changes are made by choice rather than by constraint, out of a concern for climate change: *"We made some changes because we thought it made good sense, but not because we had to."*

In France, changes seem to be viewed as less important, as people from this high-income group do not feel greatly affected financially by the energy crisis. They notice its impact on their bills, but it does not have much of an effect on them, because they can afford it. They are aware that they are privileged. The biggest change for them has been to reduce their heating. Many have switched to heat pumps. Some have turned off the Internet box at night, following the recommendations of the government.

"We've been switching off the box for a few months now, it's part of the sufficiency measures recommended in the news"
(Man, 69, France).

Some individuals implement measures that they do not really understand: *"we turn off the appliances at night. We've heard that it damages them to charge them at night rather than during the day"*
(Man, 69, France).

In Germany, many respondents have reduced their heating, at least a little. Some mention a more conscious use of electricity - but none of them have had to reduce their food consumption or car travel. Only one has slightly changed his purchases due to the increase in prices.

Some positive unexpected effects have occurred due to the changes resulting from the energy crisis. In Italy, for example, a woman (37) has implemented habits that she has come to enjoy, and would like to maintain even after the energy crisis. She has increased her awareness in purchasing and consumption: *"I avoid waste. I only buy the quantity that I know will be consumed. If there are leftovers, we recycle them the next day or in some other way, but we don't waste food. This is another change we have made"*. Another Italian woman (46) states: *"I feel more responsible for myself, my family and the planet."*

4.2.4 Barriers to the adoption of sufficient practices

What mainly prevents the respondents from implementing sufficiency measures is the feeling of being coerced or of losing well-being and peacefulness. They are not ready to share their home or other objects, nor are they ready to carpool, or support local agriculture, since this is considered too restrictive. **Overall, they are satisfied with their lifestyle and comfort**. The major difficulty for them would be using the car less, as it is very convenient in terms of schedule, and they are afraid to use bicycles for safety reasons. In France, when purchasing, they show more interest in aesthetics, taste, style, brand, and product performance than low-income respondents, who favour solidity and price. Some are considering installing solar panels, acquiring an electric heat pump, or insulation, but the low financial grants available due to their high income are a hindrance, and so is their age (many are retired) and the administrative complexity.

In Latvia, the respondents do not seem to be greatly concerned about climate change and changing lifestyles. Like the low-income households, they are suspicious that decreasing their meat consumption will have a negative impact on their health: "*Vegetarian food does not have a complete composition, it does not contain everything the body needs*" (man, 86), and all except one prefer to use the car daily because it is faster and more convenient.

When there is a concern for climate change, some inconsistencies between ideas and actions emerge. For example, in Italy, people generally want to use as few resources as possible, but if they can financially afford to buy something, they prefer to buy it rather than borrow or rent it, perhaps due to a lack of an established culture in this respect: *"in the sense that it is more*

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difficult to buy second-hand than new in some respects, so one has to be very cautious and make very thorough evaluations" (man, 56, Italy).

In general, respondents all have the opinion that it is difficult to have things repaired, with the exeption of cell phones, for which there seems to be easy access to repair shops. Most respondents have also experienced that it was very expensive or troublesome to have repairs done.

Tenants remark that not being able to choose the appliances in their apartment is a drawback as they cannot choose high-quality and energy-efficient appliances, or a heat source, which is important to them, especially in Denmark, as appliances such as washing machines, refrigerators, cookers, etc., are often supplied by the landlord.

With regards to the size of their dwelling, only a few people consider that living in a smaller place would be a viable option.

In contrast to the respondents from intentional communities, these high-income panelists' main needs concern security, tranquility, and well-being, which are not easily compatible with more sufficient lifestyles in their minds. Some are aware that their needs are not compatible with global issues but feel like they are not being pushed in the other direction: "*The car is more comfortable than the train, plus there are the timetables, with age… That's the problem with an individualistic society that defends individual interests instead of collective interests*" (man, 72, France).

In all countries, the most challenging issue is transportation, especially the use of cars, as alternatives do not seem to be sufficiently safe, flexible, or conducive to serenity and well-being (which are the main needs expressed by those respondents).

4.2.5 Levers for the adoption of sufficient practices

Respondents claim that only coercion would really push them towards change (obligation or heavy pricing), but they would rather have incentives or empowerment.

"*Incentives to use renewable energy and thus emit less CO2, but not forcing us to do things like convert houses to better energy classes, those are obligations that don't encourage people to change their behaviour anyway, right? In my small town I work in a municipality that offers an economic incentive (20 cents/km) to cycle to work. Thanks to this incentive, I started to use the bike for all purposes. So, my behaviour started to change thanks to an economic incentive*"
(woman, 37, Italy).

Particularly in France, health is a crucial criterion in food choice (which leads to eating organic food and eating less meat, because of the recognised effect of excessive meat consumption on various diseases). This also applies in Italy and Denmark. It's not the case in Latvia, however, where vegetarianism does not seem to be an issue for the respondents, who believe that eating meat is necessary for their health. For all of the German respondents, quality and taste are major aspects in food choice.

4.2.6 Opinions on policy measures

The measures advocated in Italy, France, and Latvia are quite similar: education, renewable energy, nuclear energy, transition funds, waste management, industrial pollution control. **All consider that the state is not doing enough.**

In Denmark, the focus is rather more directed towards agriculture and aviation. Agricultural production in particular seems to be a priority. Many express frustration that this sector has been "let off easy" for far too long. Most agree that taxes or other mandatory changes are now the only option. There is also a strong emphasis on a faster shift to sustainable energy sources.

"I would start by taxing the farmers who do not produce in a climate-friendly way. So, on one hand, tax these ones, and on the other hand, maybe give incentives to those who are actually changing" (man, 55, Denmark).

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"I think that with the agricultural sector, we have now tried everything but force. So now we have no choice but to resort to bans and laws" (man, 52, Denmark).

On the idea of banning greenhouse gas emitting products, in France and Italy, the respondents are generally in favour of the idea, but without hindering the consumer's pleasure, thus rather by giving them responsibility. In Germany, all respondents are opposed to bans and give preference to incentives.

Regarding individual CO2 quotas, there are mixed feelings, because of the risk of injustice, and because of the difficulty of measuring individuals' carbon emissions without interfering with individual freedom.

On taxing certain products or practices: in France, the proposal is rather to distribute taxes in various ways, especially for those who use private jets, yachts, etc. In Italy and Denmark, half of the respondents are in favour of it, while the German respondents are generally against it. Some respondents claim that they would be opened to paying more taxes :

"Second homes should be subject to higher taxes, and it is ridiculous that the Council tax has been abolished. People like me can afford to pay it" (man, 72, France).

In Latvia, respondents all seem to be more or less opposed to all these proposals, mainly because of the limitation of freedom they create or their supposed inefficiency. They rather insist on the need to build more decarbonised electricity production facilities, such as nuclear power plants and wind and solar energy.

4.2.7 Differences between countries

Our interviews reveal that environmental and social concerns play an increasingly substantial role in shaping daily habits and worldviews, but that they also face significant barriers.

In Denmark, all respondents favour buying locally produced and organic food, which is not the case in Latvia, nor in France, Germany, or Italy. None of the respondents are considering ceasing to eat meat, though some Danish, Italian, German, and French respondents are considering eating less meat, but no Latvian respondents. The Danish tend to be more acquainted with buying second-hand than the Italians, Germans, French or Latvians. Some participants mention the Fall of the Berlin Wall as a factor in their relationship with sufficiency, as this Italian respondent of Polish descent explains:

"When the Berlin Wall fell in 1989 and communism collapsed, life changed and became, like all around Europe, a matter of consumerism and the stores started to fill up with different things" (Woman, 46, Italy).

In Denmark, the respondents seem to be more sensitive to environmental issues and their financial situation allow them to improve their homes and/or buy low-carbon equipment such as an electric car. This high level of awareness is however not always reflected in the carbon footprint, with half of the sample displaying scores over 5000 kg CO_{2eq}/year. This high score is however principally caused by their intensive car use.

In France, many people have the impression that they are doing the best they can. They either do not see what else they could do or do not want to know and to get better informed. They fear that they will have to change their lifestyle, losing their freedom and pleasure. Their actions are a response to the energy crisis rather than climate concerns; they see it on their bills, but it does not have much impact on them, because they can afford it.

In Italy, the energy crisis appears to have a greater financial impact than elsewhere, and the respondents are apparently more aware of their everyday behaviour. Like for the low-income panel respondents, there is a huge concern for water supplies in the country.

In Germany, the high-income panel participants show particularly little concern about sufficiency, because they do not pay attention to climate issues or because they feel too old, and they are generally not impacted by rising prices.

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5 Comparative analysis

In this section, we compare the results between the participants from the initiatives and the panel respondents (both from low-income and high-income households), in order to understand the specificities of individuals engaged in sufficiency-oriented practices and the extent to which they differ from the two other groups. We investigate three different aspects: the relationships of with fundamental needs, the sociodemographic profiles of both groups, and the gender aspects of different lifestyles. For each cross-cutting topic, we describe the main differences observed between the three groups (i.e., participants in the initiatives, low-income panel respondents, and high-income panel respondents). Because of the specificity of the context, interviews conducted in the Indian underprivileged neighbourhood are also sometimes described separately, where relevant.

5.1 Defining fundamental needs

It can be noted that sufficiency will be either constrained or chosen according to the kinds of need it is supposed to fulfill. **In our study, we have found that households from intentional communities will engage in sufficiency practices to fulfil their needs for *meaning* (ecological and social justice values), *empathy / sharing* (willingness to engage in a collective project), and *freedom / autonomy* (desire to unleash themselves from materialism).**

"I really enjoy unburdening myself, as it takes a financial and mental weight off my shoulders. I like the great feeling of freedom of not having bills anymore. And having so much time to give freely to projects that make sense to me, and contribute to my well-being"
(woman, 36, France).

The freedom obtained from caring less about material consumption seems to be reinvested in maintaining numerous social relationships, as one respondent says:

"[I don't want to own many things] because this way I don't need to care about them. It's a form of freedom. If I lighten myself on those things, I will have less things to do at home, and more time to spend with others."
(woman, 60, France)

It is worth noting that the fundamental needs of the respondents from intentional communities are very different from those of the panel respondents, selected based on their average climate footprint.

Indeed, **low-income households from the panel adopt sufficient practices primarily to meet their need for *security* (reduced heating will allow them to save money for food or rent), *empathy* and *recognition*.** Low-income households often mention family as a priority in their lives, which corresponds to those three fundamental needs (family security, transmission and recognition or empathic sharing). **High-income households, on the other hand, most frequently refer to their need for *security, peace (tranquility)* and *wellbeing (leisure, pleasure)*.** These results support the findings of Tapia-Fonllem et al. (2017) who argue that empathetic and altruistic individuals are more likely to be engaged in environmental protection. The fact that low-income households put security first also echoes many sociological works showing that the lack of financial security deeply impacts how households look at the future (Hoggart, 1957).

In the underprivileged Indian neighbourhood, many respondents have experienced extreme poverty and even hunger, as one respondent recalls: "*We have gone through a lot of difficulties. There was a time when we used to have only one roti to eat. My wife and I used to eat half and give the other half to the children*" (man, 77). Three respondents indicated that their current lifestyle does not allow them to fulfil their needs and that they would need more income in order to access better standards of comfort. **All respondents in this neighbourhood with young children quoted their children's education and the overall well-being of their family as their main priority**. Two respondents also quoted the material improvement of their house as a priority. **In the Indian ecovillage, by contrast, main motives were the quest for a different lifestyle (e.g., less carbon-intensive and closer to nature) and voluntary simplicity, i.e., needs that are**

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more related to *meaning* and *well-being* and are similar to those of European ecovillage dwellers.

To summarise, motivation is what sets in motion (coming from the latin *movere*, to move). Action is possible because it is supported by motivation. Motivation and resistance are two sides of the same coin, namely the basic need. Individuals' motivations depend on their position on the scale of needs. Needs satisfaction is therefore the source of the deepest motivations in human beings. Understanding the motives that drive individuals to adopt sufficient lifestyles requires an explicit statement of their needs. Their motivations are clearly related to satisfying the needs they consider as priorities. In the study, we collected either the respondents' needs, when they were able to communicate them (which requires a certain level of self-knowledge) or their motivations for action, and, from these motivations, we were able to trace the needs. Hence, for example, motivations for sharing, meeting, and supporting farmers which lead people to participate in a community supported agriculture initiative can be linked to the fundamental need of "*empathy-sharing*". The chart drawn up by Gaëtan Mangin and Alex Roy (2023) inspired the following chart illustrating the connections between the motivations and needs emerging from our research.

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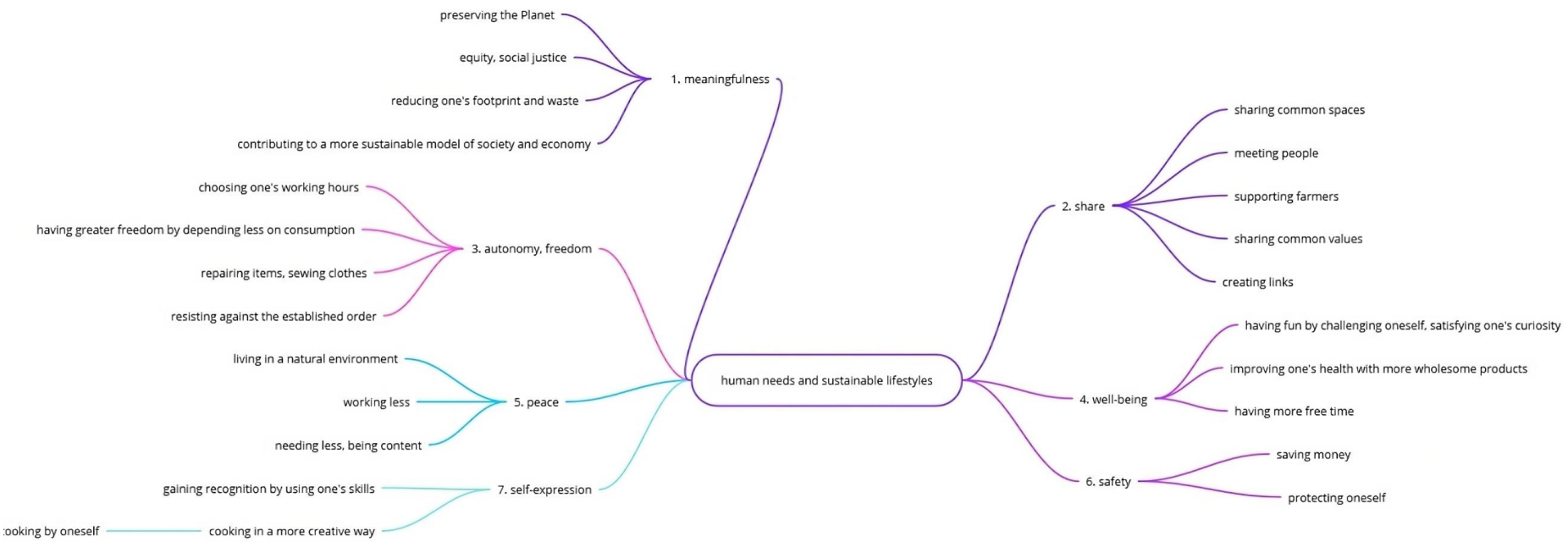

Figure 2. Needs expressed by respondents in sufficiency-oriented initiatives

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5.2 Social class and stratification aspects

Our results show no clear-cut pattern concerning the relationships between sufficiency and level of income. Participants from initiatives have different levels of income, some of them are affluent while others have modest sources of income. **The difference with the panel respondents concerns choice: while some respondents from the initiatives chose to earn less money through the market in order to dedicate more time to volunteering activities or leisure, the panel respondents are more likely to feel deprived of opportunities, to endure low levels of income despite working long hours and to not feel in control of their lifestyle, especially in Latvia and India.**

Income is not directly connected with being sufficient (or not), but savings are (which means, indirect sources of income). The ability to invest an initial sum of money is important, and thus the amount of directly disposable money people have matters. More efficient appliances, green energy production equipment like solar panels, renovation work and insulation, electric cars, and electric bikes are costly and require the ability to invest an important sum of money at once – even though there can be a return on investment on the long run and/or important subsidies (for example with solar panels). Even investing in a different kind of living (tiny house, shared houses) often requires buying shares or the house itself – although tiny houses are much cheaper than regular houses, since traditional mortgages are not available one must often buy it in cash. The availability of money for such investments is a determinant driver. Like in the case of microcredit, it has long been demonstrated that lower income households do not have savings and that **the fact of paying small amounts of money regularly rather than a big investment at once is an important lever for them.**

Another important difference between the initiative and the panel respondents, especially those from low-income households, is the share of the knowledge economy and cultural capital. Almost all of the initiative respondents have an academic degree and work in the tertiary sector. Among the most represented professions, we can find managers (10 cases), teachers (5 still working and 3 retired), care and social work professionals (nurse, doctor, therapist, educator, social worker), engineers (4), IT professionals (3), public administration officers (3), entrepreneurs and consultants (4). Researchers and lecturers are also not uncommon (9 out of 103 cases). The social, care and education sectors are thus clearly overrepresented. This reflects the fact that cooperation and care are core values of these professions, and that the commitment to society as a whole extends from their career to their personal lives. It also reflects the importance of education, knowledge and cultural capital in order to access those initiatives. "Like-minded" people often means not only a proximity of ideas, but also common habitus, shared cultural backgrounds and references, which means social homegeneity. More broadly, participants in the initiatives belong to the educated middle-class.

The most important category however is that of people who are not in employment (25 people, i.e. one quarter of the total sample). This includes retirees (17), inactive people (2), homemakers (1), and full-time volunteers (5). Most of these persons are far from being inactive and are deeply involved in volunteer work. In some ecovillages, particularly in Italy and India, unpaid work and volunteering is an integral part of the lifestyle, with the subsistence economy replacing the market one.

With regards to family backgrounds, there are no significant patterns that have emerged. Some respondents from intentional communities come from overconsuming affluent families. Others have been raised with environmental values, with their parents involved in the first wave of pro-environmental activism. Some come from the middle-class and others from farming families. Working class extraction, if not totally absent, seems less represented among the initiative respondents and more common among the panel ones.

The panel respondents' social backgrounds are also diverse, as described in section 4. Working class extraction, however, is common among this group while it is rare among initiative respondents. **The main lever for engaging in a sufficiency-oriented lifestyle thus seems to be education and the fact of meeting like-minded individuals who belong to initiatives, and being**

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part of a community. This is however more likely to happen in certain social circles than others, with the general homogamy of urban neighbourhoods and workplaces limiting the ability to mix social circles. University is also a time when new ideas and knowledge are gained, and when new experiences and new social encounters are made.

Time affluence is also an important characteristics of initiative respondents, because of the importance of volunteering in most initiatives. This can be understood at the daily life scale (working part-time, being on a leave) but also at the lifecycle scale: one important common point amongst the participants in initiatives is their experience of rather long periods of travelling (especially backpacking, woofing, etc). This is somewhat contradictory with the quest for a low-carbon life, since many interviewees admit that they have flown a lot in the past. However, low-carbon forms of travelling are not uncommon either (hitch-hiking, train travel, bike travel, sailing) especially among the younger respondents. The importance of travel reflects the ability to take time for oneself and one's own personal projects, which is not widespread among the less privileged respondents. Besides the fact that the cultural and mobility capital of the respondents reflects the values and taste of the middle-class, it also allows them to have time for self-reflection and to discover other cultures, values and lifestyles – especially when travelling outside of the Western world. This is often referred to as a turning point in many biographies, as described by this Latvian permaculture consultant living in an ecovillage: "*My whole journey started from my experience abroad where I lived in several ecovillages and learned permaculture design. After I visited several projects, I started to develop similar ideas in Latvia and we founded a permaculture association".*

5.3 Gender aspects

Each country has its own specificities regarding the gender aspect in sufficient lifestyles. There are also common elements, which will be explored below.

In **Denmark**, the respondents do not mention that those lifestyle changes have influenced gender roles in their household. It seems to be an established pattern that women do most of the housework, while cooking and grocery shopping are more equally divided between men and women. Men do most of the maintenance and outdoor work. None of the respondents express dissatisfaction with the division of domestic labour. No one makes a clear link between self-sufficient habits and the distribution/amount of domestic work.

In **France**, the intentional communities survey reveals that women are more involved than men in several initiatives. This applies to zero waste approaches, for example. In the community-supported agriculture initiatives, more women buy the products, but men are more involved in the organisation and volunteering. Women also seem to predominate in shared housing. Some respondents note that the young male generation is more active in household tasks than the older ones. *"Younger men are more sensitive. I can see it with my sons-in-law"* (woman, 72, France). Within these young couples, the division of tasks appears to be much more balanced than in older generations. For them, innovation in terms of sufficiency seems connected to an innovative model of task sharing and gender equality. *"Gender equality is a topic of discussion*", says a 60-year-old woman living in shared housing. In these approaches, it seems crucial to be in tune with one's spouse because these lifestyles have an impact on daily life. "It's make or break", says a 42-years-old man. For those for whom "it's make", the fact of being in a couple has fostered commitment. One's partner may allow one to take the sufficiency approach further, by supporting each other*: "I find it difficult to start alone, I prefer to do it together*" (man, 42, France), or sometimes moderates it: "*I am more committed than my wife. As soon as she sees that I'm drifting a bit towards the extreme, she calls me to order*" (man, 32, France). Some young women interviewed say that they occasionally need to impose their choice on their partner. Discussion is essential to reach agreement on choices. "*With my partner, we discussed a lot and fortunately we agreed"*, says a woman who went zero waste with her family (36 years-old, France). When it comes to technical areas such as construction, men seem to be more involved, *"Men have the knowledge about housing, so women need their approval before making a decision about renovation work"*, says a man living in shared accommodation (60, France). Construction work is often gendered. The issue is to empower women to acquire construction skills. Women's

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participation to the labour force is perceived to be the cause of the division of tasks. "*Women working forces men to get involved in domestic tasks. I was working night shifts so he had to take care of it, otherwise he would have avoided doing it*" (woman, 70, France).

In **Germany**, they generally feel that there are no gender aspects in these initiatives. Sometimes they state that there are more women than men in the project, especially in shared housing. A 36-year-old man explains that in terms of parenting, an equal division of care work is not currently possible. "*I'm finishing my PhD, looking for a job and my girlfriend has parental leave; especially in the beginning, when there is a lot of breastfeeding, it doesn't work very well with 'equal sharing'*" (man, 36, Germany). The parent-child relationship seems to be a bigger issue than gender itself. Children are more or less supportive of their parents' involvement, but they are not always happy, for example due to the limited choice of food. *"I don't force my children to participate, but they appreciate my involvement and help me if necessary"* (woman, 47, Germany). A 31-year-old woman who lives with her husband and their baby in a tiny house in Germany explains that they have both taken parental leave and have now reduced their working hours by the same amount in order to spend more time together as a family.

In **Italy**, the same observation was made, that sufficiency approaches do not seem to have an impact on gender dynamics. The tasks appear to be well distributed within one ecovillage: "*As you can see, men are in charge of cleaning and cooking (...) However, I take into account that I have to weigh heavy stuff*" (woman, 51, Italy). Egalitarian distribution seems to be linked to the sufficiency approach:

"*We start from the idea that such gender stereotypes are harmful. We wanted to be horizontal, so this idea that women should stay in the kitchen is not accepted here"*
(man, 48, Italy).

"Here, stereotypes don't work!"
(woman, 42, Italy).

"As with all other activities, the work is divided according to preferences and skills, not gender. Once a month we all do the cleaning together, without exception" (man, 87, Italy).

However, a tendency to revert to gendered division of labour may arise:

"The distribution of roles happens slowly and naturally. If there was something that required more physical strength, a man would do it. If there was something that required a bit more care, especially in the field of relationships, a woman would do it" (man, 48, Italy).

Some initiatives are run mainly by women: *"The gender balance among our volunteers changes all the time, there are different people every year. There are maybe a few more women*" (man, 48, Italy).

In **Latvia**, there are no major gender differences either. There is more disparity when it comes to age:

"Young people are more open. It could be harder to convince people over 50 to get involved in this movement" (woman, Latvia, 41).

"Age matters – in Latvia more than elsewhere. When people approach 40, their habits and needs change" (man, Latvia, 32).

In ecovillages however, "*women tend to do more care duties, but it is perceived and acknowledged as labour; and other gendered tasks, such as wood chopping that men do are seen as equivalent. We manage how much time it takes to compensate for what men or women do*" (man, 68, Denmark). Some ecovillages aspire to more predetermined gender roles, while others embrace more feminist ideas. In one of them, "*there is a woman's circle for mutual support*" (woman, 56, Denmark). One of the Latvian ecovillages is also influenced by Megre's Anastasianism with commitment to rather conservative gender roles.

These findings about gender within the intentional communities should be compared with the different perceptions within the panel. For these individuals, tasks seem to be more gendered, and the fact of caring about the environmental impact of the household's lifestyle also

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falls on women. It has to be noted also that only men expressed scepticism with regard to climate change among our interviews with panel respondents.

In **France**, some of the interviewed women do more housework than their husbands. In the high-income panel, they more frequently telework, or work from home. They declare that it suits them. One of them points out that her husband eats a lot of meat and that she finds it difficult to reduce the household's meat consumption. Women interviewed in the low-income panel are often solely responsible for all the domestic work, and more often homemakers or unemployed. They organise the supply and care of the whole family. The cost is important for them, as is the time spent on shopping, which they all try to rationalise as much as possible. One exception is a man, retired, whose wife still works and who spends a lot of time shopping online. However, he still waits for his wife to make the decision of buying. The use of online shopping thus allows him to participate in the shopping without having to make the call on his own as to what to buy.

In **Germany**, there is also an overall tendency towards traditional roles within the panel respondents. The youngest couple is the one that shares responsibilities most equally, while older ones are more traditional.

In **Italy**, some respondents state that the gendered division of work was a forced choice, derived from the reluctance of employers to hire young mothers. "*It was a choice that happened to me at the time because I was working with temp agencies. Then I got married, and as a newlywed they contacted me much less often, and because the usual question was whether I was thinking of having children and I stupidly answered yes. Eventually, we found that they called me very little anyway, they would call me for a week to do something and then nothing. I decided to be a young mother, and then goodbye, so I stayed at home, but now I'm happy, I like it"* (woman, 40, Italy).

"As far as domestic work is concerned, I don't do much because my wife does it, both the cooking and the cleaning, but I also participate when I can, as far as I can. Let's just say that everyone has their own competence. I can't even imagine telling my wife to check the electrics because she wouldn't be able to handle that part. On the other hand, I can only cook the most basic things, like bread, but I wouldn't know how to make other stuff, like pastry or fresh pasta" (man, 50, Italy).

In **Latvia**, the gender division of work did not come out as a concern for the respondents. However, traditional gender roles are dominant and internalized as being "normal".

In **India**, within the underprivileged neighbourhood, the gender roles are extremely strong. All the women interviewed are primarily responsible for all the domestic work, with the help of daughters, even when they also work. For example, in one case of a family owning a milk farm, women and men share the work on the farm but women take care of the majority of household responsibilities in addition to farming. Men help out with minor tasks around the house. The daughter of the family is particularly affected by this inequality with her brother: *"I need someone to help me with the chores, but I don't see anyone ready to take up more chores besides what they already do. My brother only milks the buffaloes once a day and my father does it once a day too. My brother still never does or looks to do other chores like feeding the buffaloes, giving them water, bathing them, or cleaning the shed"* (Woman, 22, India). Women are also solely responsible for child-rearing, which starts early in life as most of the women interviewed married at a young age. The possibility of working from home is seen as a potential way to earn some money while taking care of the household, as this respondent explains: *"If I get some work to do from home, I can do that. I don't go out to work because my children are small"* (Woman, 37, India). In the ecovillage, the gendered division of domestic work also remains dominant. Women takes on most of the domestic chores while men help out occasionally, especially when their wives are unwell. However, there is also a system of help that is provided by the community for elderly or sick people. This contributes to lightening the load of care work for women, who are generally in charge of both children and the elderly.

In Italy and France in particular**, there is an overall impression that in intentional communities, men and women share fewer stereotypes in the distribution of tasks than in the panel. Sufficiency seems to have an impact on the gender issue in intentional communities, bringing a more balanced division of labour, especially by reducing stereotypes, but this relates**

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more to the general awareness of social issues related to environmental challenges than to housework itself. This does not necessarily means that gender equality is achieved, but it is set as a concern in many initiatives.

5.4 Cultural aspects

Besides social class and gender, culture also influences social practices in different ways across countries. The national specificities of each country with regard to sufficiency (historical, political, and economic contexts) will be further discussed in deliverable 5.1. However, based on the data gathered in this report, some cultural differences between the main driving forces behind sufficiency-oriented lifestyles in the six countries can be highlighted.

Denmark is a rich country with a generally very high standard of living and high levels of consumption. A sufficient lifestyle is one that works against this high consumption by reducing consumption of natural resources, reduces energy-use and actively choses more sustainable options when it comes to activities such as driving, choice of housing, eating and other consumption. The driving force behind this lifestyle is a concern for the consequences caused by the climate crisis and the belief that concrete action is needed if we are going to mitigate it. This is closely linked to concerns about the environment and biodiversity and the subjects are often pooled together in the term "Sustainability". For some people within this group subscribing to a sufficient lifestyle, a driving force behind reducing consumption and thereby spending less money, is a desire to work less. They seem to strive for a life with a different work-life balance, than what is widespread in the rest of society. In connection to this trend, some talk about "the simple life" -which is more focused on spending time with loved ones or appreciating "the small things" instead of being preoccupied with materialism and consumption. One important driver for the people in the initiatives is the desire to be part of a community that shares their values and goals when it comes to a sustainable lifestyle. Another distinctive feature emerging in our data, is that of financial opportunities. Within the high-income cluster, and among the Initiative respondents with a high income, there is a clear pattern of them being able to make specific choices with regards to sufficiency, which requires a high level of financial freedom that low-income respondents do not have.

In **France**, sufficiency as a concept is widely known thanks to pro-environmental social movements and initiatives, which frequently refer to it in opposition to the capitalistic accumulation and growth-oriented society. Respondents from the initiatives share a common focus on a quest for self-sufficiency, autonomy, increased wellbeing, and time for oneself. They have little time pressure and even though their involvement in sufficiency can be demanding, the time and effort dedicated to it are considered a pleasure, because they bring meaning to action. Sufficiency is often chosen to decrease the need for money, and thus for work, and to dedicate more time to social relationships. Food is a frequent first step for taking interest in sufficiency and sustainable lifestyles, coming from a concern for health and environmental protection (organic farming). Community-supported agriculture is particularly widespread in France due to the existence of "back-to-the-earth" and communalist movements in the 1960s, that still influence the perception of sufficiency (Pierre Rabhi, one of the main theorists of sufficiency in France, was an agronomist). This explains the fact that many sufficiency-oriented initiatives are to be found in the countryside, where public transportation is almost nonexistent and car dependency remains high. The panel respondents we interviewed do not seem very concerned about sustainability as a concept, but do care for the environment. However, high-income respondents fear changing their lifestyle, loosing freedom and pleasure. They do not have incentives to limit their consumption, since the price does not really affect them. Many of them have improved their energy system (for example, by installing a heat pump instead of fuel) but for efficiency and improved comfort rather than for environmental reasons. Low-income respondents, on the other hand, positively identify with sufficiency as "a simple life". They display sufficient practices because they are careful about not wasting, for economic reasons. However, they have little agency because the energy crisis has already started to decrease their level of comfort (heating) and quality of life (less leisure, fewer options for food consumption). Moreover, they do not have control over the main changes that would allow them to alleviate their budgets and carbon footprints

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(heating and car use), since most of them are tenants and car dependent. They also have a very different relationships with leisure. Leisure is not central as it is in intentional communities' motivations for sufficiency. Living a simple life is related more to the ethics of the working class and social justice outlooks than to the lure of having more free time for self-expression.

In **Germany**, the sustainability culture is strongly focused on renewable energy, recycling and organic farming, seems to be reflected in the understanding of sufficiency in Germany by people in intentional communities. Overall, the focus of the interviews is on resources and using only those resources that are necessary for a basic lifestyle. Some interviewees have included aspects of equity, emphasising the importance of distributing available resources in such a way that everyone can live a good life. The idea is not to provide everyone with the same quantity of resources, but to ensure that no one has too little. However, it also became apparent that for some, sufficiency is related to renouncing or sacrificing luxury or living standards. Even if the interviewees do not have such a concept of sufficiency, such a perspective is often apparent in the reaction of others to their individual choices of lifestyle (especially concerning cohousing and ecovillages). For the interviewees, sufficiency seems to be rather a question of well-being and living in a way they are content with and that addresses their personal needs. Based on the interviewees and their level of education, sufficiency and the opportunity to live a sufficient lifestyle also seems to involve high levels of social welfare, education, and gender equality. The interviewees were mainly from an academic background, and even though the extent differed, all of them had an understanding that climate change and overconsumption (be it of space or of products) are problems that need to be addressed. Most people were not activists but had an interest in mitigating climate change. However, all interviewees also reported aspects in which it was not possible to live an overall sufficient lifestyle that met all aspects of reduced and mindful consumption, e.g., needing to use a car sometimes, still eating meat, flying for holidays or living in large spaces. The panel interviewees were not familiar with the concept of sufficiency and did not advocate such a lifestyle. Nevertheless, several but not all were most critical about wasting food or high consumption levels.

In **Italy**, a common driver for sufficiency-oriented initiatives' participants is related to environment concerns and preservation and promoting a more sustainable way of living ("being light on the planet"). There is also a desire to fulfil a need of identity, personal growth, self-actualization, coherency (living in a way that is aligned with their values) and sense of belonging by meeting people who share the same values and developing meaningful relationships. Most respondent in general avoid excess, care about responsible goods consumption. They do not feel deprived of anything and strongly believe that implementing best practices sets a positive example and inspires others.

Among most panel respondents, it emerges that the driver for adopting sufficient practices is rather the energy crisis, than climate change, although most respondents are concerned about the latter, especially with regards to water management and natural disasters. The needs that drive lifestyle are primarily related to physiological and safety needs, as well as love and belonging. The changes made by the respondents mostly involved reducing energy consumption in heating and transportation, by shifting to less expensive solutions such as biking and public transportation. It's worth mentioning that none of them reported difficulties in implementing these new habits, and some even expressed a desire to continue them.

Most initiatives' respondents try to act on several sectors. They buy most products from solidarity-based purchasing groups (GAS) and half of them are vegetarian. Most use bikes or car-sharing for transportation and minimise car use, exchange and use second-hand or self-made clothes and limit their digital consumption. Many have past experience in volunteering, activism in political and/or sustainability-oriented initiatives and/or social justice and were really engaged in their community and municipality before participating the initiative. They challenge themselves, step out of their comfort zone and commit themselves to shifting from abstract ideas to reality. For them, the initiative represents a dream come true and a new starting point to promote a more sustainable way of living.

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Among most panel respondents, people generally want to minimise their resource usage, but most are not sure or disagree to find desirable to possess only few things. Additionally, unlike the initiative sample, they prefer to buy something rather than borrow or rent it, as long as they can afford it financially. Half of the respondents, irrespective of their income level, are hesitant to buy second-hand items except for a few goods such as cars or kids' clothes. They prefer not to share. Unlike the initiative sample, none of the panel respondents had any political engagement or activism experience, and their volunteering activities were generally low and mostly related to social cohesion.

In **Latvia**, the driving forces behind a sufficient lifestyle are complex and multifaceted. Historically formed discourses on the virtue of hard agricultural labour mingle with Soviet habits of using informal networks for the provision of needs and suffering through hardship, as well as with neoliberal expectations during austerity that responsibility should lie on the individual. Additionally, the transition to a market economy has fostered positive attitudes towards wealth and consumption, by encouraging the economic catching up with Western Europe in terms of material wealth, which has become the standard of good life.

Thus, on the one side, individualism is strongly associated with well-being and development, which often manifests itself in the valuing of self-sufficiency as a capacity to independently live with what one has. But on the other side, individualistic quests for wellbeing can be also seen as one of the biggest obstacles to a sufficient lifestyle in Latvia as people seek to improve their own lives and increase their consumption of consumer goods and services, build bigger houses, and switch from public transport to private cars. At the same time, there is also a growing pro-environmental social movement in Latvia that is pushing for a more sustainable and responsible approach to consumption and lifestyle willing to experiment with community-led solutions. This movement emphasises the need for individuals to take responsibility for their impact on the environment and to work towards reducing their material consumption and environmental impacts with community means. Nevertheless, sufficiency-oriented initiatives remain marginal and face cultural, economic, and regulatory barriers.

India's socio-economic diversity warrants an approach aimed at understanding people's present context and history to determine their notions of sufficiency and related practices. A one-size-fits-all definition of sufficiency therefore does not exist in this country. Based on learnings from this research, for those who have grown up in monetarily privileged conditions, sufficiency is primarily associated with a low-carbon footprint. Their predominant motivation is to live an alternative lifestyle based on healthy consumption practices and to attain inner peace through mindful practices such as yoga which can support a sufficiency-based lifestyle. For those who have grown up in and are still living in monetarily underprivileged conditions, sufficiency is exhibited through mindful consumption decisions based on their personal budget limitations. For a few individuals it also encapsulates the need for additional sources of income to support adequate living conditions for their families e.g., to enhance their house structures. The perspectives shared by interviewees indicate that barriers to 'sufficiency' for affluent people include a culture of competitiveness that entices people to purchase products that are newly introduced on the market, e.g., an upgraded version of a bike or television. Advertisements were mentioned as one factor that contributes to fueling the same. It was also shared that people's fast-paced lives are dominated by excessive screen time which does not leave space to observe injustices in the world around them and inadvertently fuels people's behaviour of accumulating surplus wealth for themselves at the cost of the health of the planet and its inhabitants, especially the marginalized. People's disconnectedness with nature was identified as another catalysing factor for unsustainable living practices. In the context of barriers to attaining 'sufficiency' for people with less than sufficient resources; inadequate income is the primary contributing factor in addition to the dearth of facilities such as water availability.

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6 Conclusions

In this concluding section, we summarize the main findings and outline first policy objectives that are derived from the interview results as a draft to be further developed and fed into the subsequent deliverables of WP 3 (i.e., D3.4).

The main benefits of sufficient lifestyles for participants in the initiatives that we derived from our fieldwork confirm what has been found elsewhere in the literature: increased autonomy and possibility for personal development (creativity, peace of mind), increased quality of social relationships and increased quality of life and health. The focus on social bonds and social relationships as a major source of increased wellbeing, which has also been underlined in other studies (e.g. L'Huillier et al., 2022), appears particularly important in our fieldwork.

These co-benefits are well known by the participants in the initiatives we have researched, since they represent in most cases the prime motivation for joining an initiative. Indeed, except for ecovillages which appear distinct from other initiatives from that point of view, the desire to decrease one's carbon footprint is rarely the main motive for joining an initiative. Participants rather look for a different experience and the opportunity to meet people and share a project together (even though ecological concerns are by no means absent, but they usually are not the first reason people give when asked about why they do what they do). This finding tends to indicate that a communication on lifestyle change that is focused on ecological benefits as the main driver, with social aspects described as mere "co-benefits", may not be the most convincing for people. Opportunities to access tasty and healthy food (CSA), to gain knowledge and skills while saving money (repair cafés), to access comfortable property at an early age (tiny houses) or to be supported by a community of more than neighbours (shared housing) are arguments that are probably more powerful than the prospect of decreasing one's carbon footprint. **Providing these arguments as benefits for increasing the participation in sufficiency initiatives and sufficiency lifestyles could be one policy objective.**

Evidence that the level of wellbeing of participants in the initiatives is high is undisputable, and as noted in the GLAMURS research project, the mere fact of participating in an initiative does provide wellbeing, through fulfilling the needs for meaning and social bonding (Carrus et al., 2020). That said, it does imply a lot of voluntary work that is likely to provide a feeling of work overload when participants also have full-time working arrangements and children to take care of. Even when intense, voluntary work is not felt negatively when respondents feel free to manage their own workload, for example when paid work does not compete with unpaid work (for example, when participants are on leave, in retirement or have savings to live off). This financial freedom is not always possible, and, in this case, sufficiency can be described as too demanding (especially for lower income groups). **Increasing the availability of time for volunteering through social support mechanisms (e.g., paid leave to volunteer in sufficiency-oriented initiatives) is another potential policy objective, that would facilitate the participation of a wider audience. Facilitating the operation of sufficiency initiatives would also decrease the need for highly skilled individuals, who can navigate through the administrative and financial maze.**

Our research also confirms that for many individuals, "lifestyle choices" are not choices, but are primarily constrained by the availability and affordability of options, especially for deprived households who often have to make trade-offs between different needs. Our research thus supports the evidence that sufficiency can only be achieved once basic needs are satisfied (Vita et al. 2019), especially the need for safety. The results from the part of the research conducted in the Indian informal settlement confirms the necessity of both stable sources of income to cover daily costs, but also good public services (water, electricity, transportation) to fulfil basic needs. **Waivers or lower prices on the coverage of basic needs for the more vulnerable (e.g., progressive tariffs and/or guaranteed access to a minimum level of consumption of water and heating, vouchers for local, organic food…) is another policy objective that would allow sufficiency to truly provide a "consumption space for all" (Akenji et al., 2021).** Moreover, higher education which is often linked with higher income provides the basis for time and cultural resources to reflect on sufficiency and a potential change in one's lifestyle - once the basic needs

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are fulfilled. **Access to culture** (both academic and non-academic) should thus also not be overlooked.

However, our research also indicates that the level of environmental awareness does not seem to be a major distinctive feature between participants in the initiatives and low-income panel respondents, except in Latvia where few respondents from the panel expressed interest in those issues. **Raising awareness thus may not be the main lever for the diffusion of sufficiency-oriented lifestyles**, since the fact of being aware of the climate crisis does not necessarily predict the fact of acting on it (Coulangeon et al., 2023). Individuals frequently lack the time and opportunities to enroll in such initiatives, and because these initiatives are poorly supported by institutions, they often rely on individuals' own resources (financial, cultural, social) and are thus inaccessible to groups of the population who might lack such resources. More broadly, our results confirm the socio-economic determinants of the feeling of "having agency" over one's lifestyle choices and impact on broader society, confirming what Kennedy and Givens (2019) call "eco-powerlessness—fear and uncertainty in the face of environmental issues and a sense that one's daily actions have little bearing on broader issues". This lack of agency results in a feeling of dissonance and ultimately rejection regarding injunctions to reduce individual climate footprints. With the striking exception of Denmark, where the interviewed individuals appeared to be the more willing to act individually, and also the most trustful of their governements, respondents from lower income households are generally doubtful of the governmental action and feel like there are double standards for people with high social status. **Trust, transparency and empowerment thus appear to be important levers for efficient policy-making.**

That said, the research with panel respondents from high-income categories shows that a certain level of affluence and education, awareness on the climate crisis, and the fact of having agency over lifestyle choices are by no means enough to engage in a sufficient lifestyle. High-income panel respondents are also aware of climate issues. They feel that they are already doing the best they can, but they have an inaccurate vision of their own impact, and/or are not willing to know more. They fear that they would have to change their habits and ultimately suffer a loss in freedom and pleasure. Respondents claim that only coercion would really push them towards change (obligation or heavy pricing), but they would rather have incentives or empowerment. Indeed, they are generally supportive of the general objectives of protecting the environment, but reluctant to decrease their freedom of choice. **Offering different options for mitigating one's carbon footprint, with possibilities to make trade-offs between sectors, could thus be a potential policy lever for increasing the willingness to act for those who have actual choices. However, this kind of policy avenue cannot be effective if, on the other hand, radically unsustainable options continue to be available on the market (even at high prices, since price is not a major criterion of choice for affluent households). A better control of the environmental impacts of all products should thus be implemented in priority.**

We also found that the energy crisis led to people changing their behaviours more than climate change, but that it did not end up in what can be described as a "sufficiency-oriented lifestyle". For low-income respondents, the decrease in energy consumption has resulted in a loss of comfort (e.g., heating only one room, cutting on leisure mobility) unlikely to persist in the long run because of its costs on wellbeing, while for high-income respondents the willingness of safeguarding unchanged levels of comfort leads to marginal changes that are not likely to produce a fundamental change in lifestyle (e.g., turning off the internet box at night, changing the appliances for more energy-efficient ones). **Policy orientations should thus take into account the fact that price signals and/or economic shocks weight heavily on the poor, while being easily circumvented by the more affluent.**

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Appendix 1. Interview guide for initiatives

Topic addressed	Questions	Comments for the interviewer
The initiative / sustainable lifestyle	1. What is the initiative ? 2. Since when do you participate? 3. How did you learn about this initiative ? How did you get involved ?	(how many people ? men and women ?)-> gender division, division of roles, structure of the initiative (formal, informal)? Try to have a precise description of the purposes, objectives of the initiative, but also on its organisation, stage of implementation and precise role of the respondent (founder, user, specific role, etc.)
Motivations to participate	4. Why did you participate in this initiative? What were your motivations?	If the respondent refers to environmental issues, climate change, or economic concerns, try to know when did he or she started to think about this, how, why, what was the context, and how does she/he feel about that (e.g. ecoanxiety, economic stress, etc.) Make the respondent elaborate about what he or she is looking for when it comes to housing / food / etc. depending on the initiative perimeter). Possibility to refer to a list of needs (see page 5) and submit it directly to the interviewee.
Daily life and habits	5. Can you describe to me how you live? 6. In what kind of building/house do you live? Where and why? *7. Would you like to tell me about your habits about...* -> Food and diet -> Mobility & transport, -> Equipment and especially digital equipment & consumption (data, videos etc)	Here the goal is not to have a precise description, but to have people elaborate about how they reflect about those different domains of energy consumption, how they label their own practices, what are the reasons, the constraints and other options available (if so).

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The adoption process	8. What aspects of your everyday life changed since you joined this initiative? 9. What made this change possible? (preconditions + current conditions) 10. Did some specific events triggered the change? 11. Did the respondent receive any help? By whom? 12. What else the respondent would have needed that would have been helpful? 13. What would be the conditions for doing other changes? Are there some limits that you think are impossible/particularly difficult to overcome? For what reasons? (eg financial cost, time resources...)	Please adapt the tense (past, present or future) of the questions depending on the state of development (fully implemented, in progress, just started…) Ask about life events e.g. relocation, birth of a child, change of work… Try to address structural effects, social environment, leverage effects, financial subsidy, public policy… Identifying lacks in policy/organisation and expand on barriers (structural, etc)
Assessing the effects	14. What is it providing you as a person to be part of this initiative? What needs do it address? (physical, social, emotional) 15. What do you think it provides the society? / what societal needs does it address? 16. Did you experience any unexpected effects? 17. What is more complicated, costly ? What is not fulfilled? 18. Do those practices involve changes in the time you need to do things? 19. Who takes care of what in your household? Has it changed?	Focus on health, wellbeing, quality of life, etc. Make the respondent elaborate on the possible rebound or spillover effects Try to see if the social environment was a lever or a barrier, why, how. Try to have the person talk about the gender division of work and especially the work caused by shifting to sustainable habits (e.g. who's washing the washable dipers, who's biking to work, who's monitoring the energy consumption, who's shopping and cooking etc)
Diffusion	20. How about the persons around you (family members, friends)? Did it affect them? Were they part of the change? How did they react?	How does the respondent relate the change to his or her social environment
Opinions about sufficiency and societal change	21. What does the word sufficiency / « sufficient lifestyles » makes you think?	

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	22. According to you, why some people are interested by sufficiency / sustainability and others are not? 23. According to you, can everyone do what you do / live like you? What would be the enablers – barriers? 24. What are your aspirations for the future? And about the society? / societal change?	i.e. not only about taking action but also being aware / interested by the subject.
Biography and past	25. where did you grow up? in what kind of housing, what kind of social environment? what were your parents doing? 26. what were your parents' practices in terms of housing/food/mobility&transport 27. what is the respondent's school and professional career? 28. Was there any past involvement in other initiatives, activism…	Try to see if the respondent has been influenced by childhood, mates, training, education or anything else in his or her past (socialisation effects) (depending on the initiative perimeter and/or what the respondent told you before) If there are breaks / shifts / disruptions, make people elaborate / explain
Personal information (if not already mentioned)	29. Occupation / Work 30. Is your income sufficient as it is now to fulfill you daily needs? [need more / could do with less]	See short questionnaire below

STANDARDISED QUESTIONNAIRE

Gender	
Age	
Household composition	**Single / Married or Cohabiting** **Number of children (if any)**
Working status	**Employed / Unemployed / Retired / Other**
Place of living	

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Appendix 2. List of interviewees from initiatives (N=103)

Country	Category	Initiative	Gender	Age	City size	Type	Face to face or virtual/phone interview
Italy	Ecovillages	Ecovillage	Woman	51	275	Rural	Face-to-face
Italy	Ecovillages	Ecovillage	Man	37	275	Rural	Face-to-face
Italy	Ecovillages	Ecovillage	Man	46	275	Rural	Face-to-face
Italy	Ecovillages	Ecovillage	Woman	29	275	Rural	Face-to-face
Italy	Ecovillages	Ecovillage	Woman	25	275	Rural	Phone/Teams
Italy	Ecovillages	Ecovillage	Man	57	567	Rural	Phone/Teams
Italy	Housing	Cohousing	Man	87	27000	Middle-size city	Face-to-face
Italy	Housing	Cohousing	Woman	73	27000	Middle-size city	Face-to-face
Italy	Housing	Cohousing	Woman	67	27000	Middle-size city	Face-to-face
Italy	Housing	Cohousing	Man	73	27000	Middle-size city	Face-to-face
Italy	Housing	Cohousing	Woman	42	388000	Urban centre	Phone/Teams
Italy	Housing	Cohousing	Woman	29	106000	Urban centre	Face-to-face
Italy	Miscella-neous	Renting Tableware	Man	36	3 883	Small city	Phone/Teams
Italy	Miscella-neous	Renting Tableware	Man	66	1052	Rural	Phone/Teams
Italy	Miscella-neous	Renting Tableware	Man	44	3 883	Small city	Phone/Teams
Italy	Miscella-neous	Fair on critical consumption	Man	48	117914	Urban centre	Phone/Teams
Italy	Miscella-neous	Fair on critical consumption	Woman	47	117914	Urban centre	Face-to-face
Italy	Miscella-neous	Fair on critical consumption	Woman	52	117914	Urban centre	Phone/Teams
France	Miscella-neous	Low-tech lab	Woman	60	160649	Urban centre	Face-to-face
France	Miscella-neous	Low-tech lab	Woman	77	160649	Urban centre	Face-to-face
France	Miscella-neous	Low-tech lab	Woman	22	160649	Urban centre	Face-to-face
France	Miscella-neous	Carbon con-versations	Man	36	903	Rural	Face-to-face
France	Miscella-neous	Carbon con-versations	Man	45	8270	Small city	Face-to-face
France	Miscella-neous	Carbon con-versations	Woman	39	8270	Small city	Face-to-face
France	Food	Community supported agriculture	Woman	41	8270	Small city	Face-to-face
France	Food	Community supported agriculture	Woman	50	8270	Small city	Face-to-face

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France	Food	Community supported agriculture	Man	50	8270	Small city	Face-to-face
France	Food	Community supported agriculture	Woman	40	8270	Small city	Face-to-face
France	Housing	Tiny house	Woman	35	8270	Small city	Face-to-face
France	Housing	Tiny house	Woman	25	2866	Rural	Face-to-face
France	Housing	Tiny house	Man	38	8270	Small city	Face-to-face
France	Housing	Tiny house	Woman	38	2866	Rural	Face-to-face
France	Housing	Tiny house	Man	39	800	Rural	Face-to-face
France	Housing	Cohousing	Man	40	8270	Small city	Face-to-face
France	Housing	Cohousing	Woman	70	6896	Small city	Face-to-face
France	Housing	Cohousing	Man	70	6896	Small city	Face-to-face
France	Housing	Cohousing	Man	40	64431	Middle-size city	Face-to-face
France	Miscella-neous	Zero waste	Woman	32	8270	Small city	Face-to-face
France	Miscella-neous	Zero waste	Man	29	8270	Small city	Face-to-face
France	Miscella-neous	Zero waste	Woman	31	8270	Small city	Face-to-face
France	Miscella-neous	Zero waste	Man	31	8270	Small city	Face-to-face
France	Miscella-neous	Zero waste	Woman	75	8270	Small city	Face-to-face
France	Miscella-neous	Zero waste	Woman	80	8270	Small city	Face-to-face
Den-mark	Ecovillages	Ecovillage	Man	66	7200	Small city	Face to face
Den-mark	Ecovillages	Ecovillage	Man	32	7200	Small city	Face to face
Den-mark	Ecovillages	Ecovillage	Woman	70	7200	Small city	Face to face
Den-mark	Ecovillages	Ecovillage	Woman	31	7200	Small city	Face to face
Den-mark	Ecovillages	Ecovillage	Man	61	2300	Small city	Face to face
Den-mark	Ecovillages	Ecovillage	Man	45	2300	Small city	Face to face
Den-mark	Ecovillages	Ecovillage	Man	57	2300	Small city	Face to face
Den-mark	Ecovillages	Ecovillage	Woman	41	2300	Small city	Face to face
Den-mark	Ecovillages	Ecovillage	Woman	62	3500	Small city	Face to face
Den-mark	Ecovillages	Ecovillage	Woman	56	3500	Small city	Face to face
Den-mark	Ecovillages	Ecovillage	Man	59	3500	Small city	Face to face

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Denmark	Ecovillages	Ecovillage	Man	39	3500	Small city	Face to face
Denmark	Miscellaneous	Repair café	Woman	75	Rural	Rural	Face to face
Denmark	Miscellaneous	Repair café	Woman	64	Rural	Rural	Face to face
Denmark	Miscellaneous	Repair café	Man	67	285000	Urban centre	Face to face
Denmark	Miscellaneous	Repair café	Woman	85	285000	Urban centre	Face to face
Denmark	Miscellaneous	Zero Waste	Woman	30	285000	Urban centre	Face to face
Latvia	Ecovillages	Ecovillage	Man	36	Rural	Rural	Virtual
Latvia	Ecovillages	Ecovillage	Man	55	Rural	Rural	Virtual
Latvia	Ecovillages	Ecovillage	Man	37	Rural	Rural	Virtual
Latvia	Food	Community supported agriculture	Woman	48	800000	Urban centre	Face to face
Latvia	Food	Community supported agriculture	Man	36	800000	Urban centre	Face to face
Latvia	Food	Community supported agriculture	Woman	36	800000	Urban centre	Face to face
Latvia	Food	Community supported agriculture	Woman	38	800000	Urban centre	Face to face
Latvia	Miscellaneous	Freecycle	Woman	32	672000	Urban centre	Face to face
Latvia	Miscellaneous	Freecycle	Woman	38	672000	Urban centre	Google meet
Latvia	Miscellaneous	Freecycle	Woman	57	672000	Urban centre	Face to face
Latvia	Miscellaneous	Freecycle	Woman	40	67000	Middle-size city	Google meet
Latvia	Mobility	Ridesharing	Man	28	67000	Middle-size city	Google meet
Latvia	Mobility	Ridesharing	Woman	41	67000	Middle-size city	Google meet
Latvia	Mobility	Ridesharing	Man	40	25000	Middle-size city	Google meet
Latvia	Mobility	Ridesharing	Man	32	672000	Urban centre	Google meet
Germany	Housing	Cohousing	Woman	29	160000	Urban centre	face-to-face
Germany	Housing	Cohousing	Man	36	160000	Urban centre	face-to-face
Germany	Housing	Cohousing	Woman	64	160000	Urban centre	face-to-face
Germany	Housing	Cohousing	Man	32	160000	Urban centre	face-to-face
Germany	Ecovillages	Ecovillage	Man	53	3400	Small city	face-to-face

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Germany	Ecovillages	Ecovillage	Woman	19	3400	Small city	face-to-face
Germany	Food	Foodsharing	Woman	42	3,6 million	Urban centre	phone
Germany	Food	Foodsharing	Woman	58	3,6 million	Urban centre	face-to-face
Germany	Food	Foodsharing	Man	37	3,6 million	Urban centre	phone
Germany	Food	Foodsharing	Woman	52	3,6 million	Urban centre	phone
Germany	Food	Foodsharing	Woman	47	3,6 million	Urban centre	phone
Germany	Food	Community supported agriculture	Man	32	3,6 million	Urban centre	phone
Germany	Food	Community supported agriculture	Man	37	3,6 million	Urban centre	face-to-face
Germany	Food	Community supported agriculture	Woman	47	3,6 million	Urban centre	face-to-face
Germany	Food	Community supported agriculture	Woman	58	3,6 million	Urban centre	phone
Germany	Housing	Tiny House	Woman	31	12300	Middle-size city	face-to-face
Germany	Housing	Tiny House	Woman	53	12300	Middle-size city	face-to-face
Germany	Housing	Tiny House	Man	25	12300	Middle-size city	face-to-face
Germany	Housing	Cohousing	Man	35	1470	Rural	virtual
India	Ecovillages	Ecovillage	Woman	86	13	Rural	Face-to-face
India	Ecovillages	Ecovillage	Man	67	13	Rural	Face-to-face
India	Ecovillages	Ecovillage	Man	60	13	Rural	Face-to-face
India	Ecovillages	Ecovillage	Man	56	13	Rural	Face-to-face
India	Ecovillages	Ecovillage	Woman	53	13	Rural	Face-to-face
India	Ecovillages	Ecovillage	Man	48	13	Rural	Face-to-face
India	Ecovillages	Ecovillage	Man	43	13	Rural	Face-to-face
India	Ecovillages	Ecovillage	Woman	40	13	Rural	Face-to-face
India	Ecovillages	Ecovillage	Woman	37	13	Rural	Face-to-face

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Appendix 3. Interview guide for panel respondents

Dear sir or madam,

We come back to you following the survey you have responded to, in order to discuss further with you some aspects of your daily life. The purpose of this research is to understand how households can live better with less - including related political and societal structures that impact the lifestyles of individuals. For this reason, we would like to discuss with you some of the answers you have been giving to the survey, in order to understand the reasons and motivations for your choices.

A. Description of lifestyle

Methodology: Going back to the person's answers to make them elaborate about why they have such behaviour, depending on what they do in each of the 4 sectors considered.

➔ Housing

1. What drove you to live in this place? (in the city / in the countryside). How do you feel about it? What are the motivations for choosing this kind of housing over another? Did you feel like you had different choices? If not, why?
2. Would you consider changing your heating system? (if relevant)
3. Would you consider living in a smaller place? (if relevant)

➔ Food

4. How do you choose what you eat? What are the reasons?
5. Would you consider eating more local products? If not, why?
6. Would you consider being vegetarian or eating less meat? If not, why?

➔ Transportation

7. What are the reasons why you choose this type of transportation? What are the constraints?
8. Would you consider biking / taking public transportation more often? If not, why?

➔ Miscellaneous

9. How do you choose what you buy in general?
10. What are the places of consumption (hyperstores / online / retail)?
11. Would you consider buying second-hand things ? If not, why?
12. Digital consumption: equipment, uses, habits
13. Would you consider watching less online videos / movies? (if relevant)

➔ Gender division of work

14. Who takes care of what in your household?
15. How does it affect your decisions (concerning housing, transportation, food etc).?

B. Sufficiency and lifestyle changes

16. Interest and knowledge about climate change: What do you think of climate change? Why? (sources of informations, influence of people / media, etc)
17. What does the word "sufficiency" mean to you?

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18. Have you heard about the climate and energy crisis? Does it impact you personally?
19. Have you been brought to make changes in your life because of it?

B.1. IF YES (Changes have been made)

20. For which reasons? (*was it voluntary or forced*)

21. Which ones? Since when (adoption process / influences)? Did some specific events trigger the change? Did you receive any help (if yes, by whom)?

22. If those changes are chosen: what made them possible? (preconditions + current conditions)?

22b. If those changes are not chosen: How do you cope with them?

23. How did it affect your everyday life? (positive / negative, unexpected effects, etc).

24. Have you recommended some of those changes to other persons?

B.2. IF NO (No changes have been made)

25. Why not? What are the things that you would have liked to change if you could?

26. What are the difficulties/barriers that you experience?

27. What could make you want to change some things? What could help you doing so?

C. Carbon footprint and climate change

28. Among all of your daily consumption and habits, what do you think has the most impact on energy / climate?

29. And what would be the most difficult to change?

30. What would make you consider sharing more things? (e.g. car, washing machine, etc)

31. What would make you reduce your general consumption of goods?

D. General opinions

32. Do you feel like you have enough free time in your life?

33. What would you be doing with your free time if you had more?

34. What are your priorities in life, in terms of personal needs?

Freedom / autonomy ; safety / protection ; empathy / sharing / participation ; peace (calm, silence, rest) ; meaning ; self-expression / creativity ; understanding ; leisure

E. Policy

35. If you were an elected official, what would you decide to do in order to fight climate change ?

36. What would you think of the following policies in order to fight climate change

- Forbidding the most emitting products (for example, fuel cars ?)
- Limiting the consumption to some maximum levels (for example speed, temperature)?
- Quotas for each person
- Taxation

F. Personal situation

37. What is your profession ?

38. Do you participate in any volunteering, or have you in the past ? Why?

39. Where did you grow up? in what kind of housing, what kind of social environment?

40. What were the parents doing? Were they sensitive to environmental issues?

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Appendix 4. List of interviewees from the panel (N=57)

Country	Age	Gender	Income group	Face to face or virtual/phone interview
Denmark	58	Man	3	Virtual
Denmark	42	Woman	3	Virtual
Denmark	71	Man	1	Virtual
Denmark	73	Man	2	Virtual
Denmark	27	Woman	2	Virtual
Denmark	55	Man	3	Virtual
Denmark	52	Man	4	Virtual
Denmark	45	Woman	1	Virtual
Denmark	33	Woman	4	Virtual
Denmark	43	Woman	4	Virtual
Latvia	66	Woman	1	Virtual
Latvia	28	Woman	3	Virtual
Latvia	70	Man	2	Virtual
Latvia	55	Man	4	Virtual
Latvia	55	Man	2	Virtual
Latvia	86	Man	3	Virtual
Latvia	40	Woman	1	Virtual
Latvia	24	Woman	5	Virtual
Latvia	65	Man	5	Virtual
Latvia	27	Woman	4	Virtual
Italy	40	Woman	3	Virtual
Italy	42	Man	3	Virtual
Italy	37	Woman	4	Virtual
Italy	64	Man	4	Virtual
Italy	56	Man	4	Virtual
Italy	45	Woman	5	Virtual
Italy	56	Man	5	Virtual
Italy	69	Woman	1	Virtual
Italy	60	Man	1	Virtual
Italy	52	Woman	2	Virtual
Italy	75	Man	2	Virtual
France	44	Woman	1	Virtual
France	63	Man	2	Virtual
France	58	Woman	3	Virtual
France	38	Woman	4	Virtual
France	63	Man	3	Virtual
France	69	Man	4	Virtual
France	76	Man	5	Virtual
France	51	Woman	5	Virtual
France	32	Woman	2	Virtual
France	35	Woman	1	Virtual

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India	35	Man	1	Face-to-face
India	33	Woman	1	Face-to-face
India	35	Woman	1	Face-to-face
India	28	Woman	1	Face-to-face
India	22	Woman	1	Face-to-face
India	37	Woman	1	Face-to-face
India	77	Man	1	Face-to-face
Germany	69	Woman	1	Virtual
Germany	78	Man	3	Virtual
Germany	45	Woman	5	Virtual
Germany	34	Man	2	Virtual
Germany	64	Woman	2	Virtual
Germany	59	Woman	3	Virtual
Germany	70	Man	5	Virtual
Germany	61	Man	1	Virtual
Germany	57	Woman	5	Virtual

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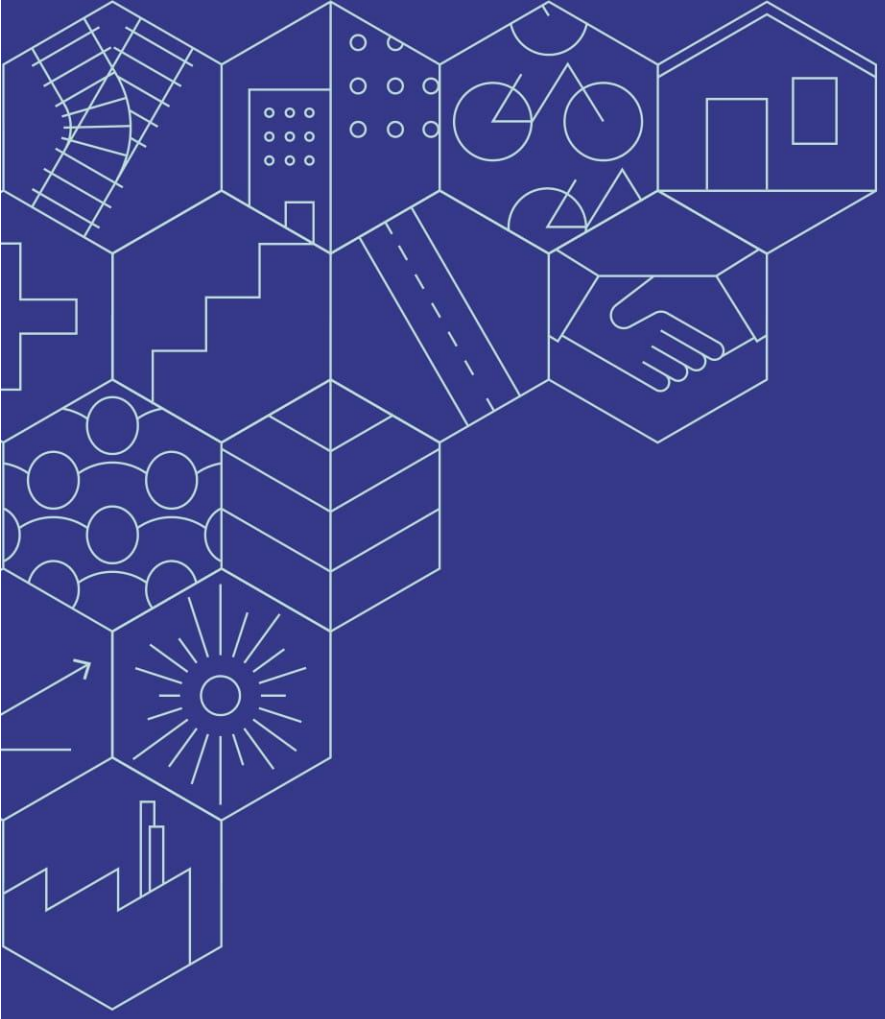

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