Research Agenda – 1ˢᵗ Cycle

South East European Research Center (SEERC)
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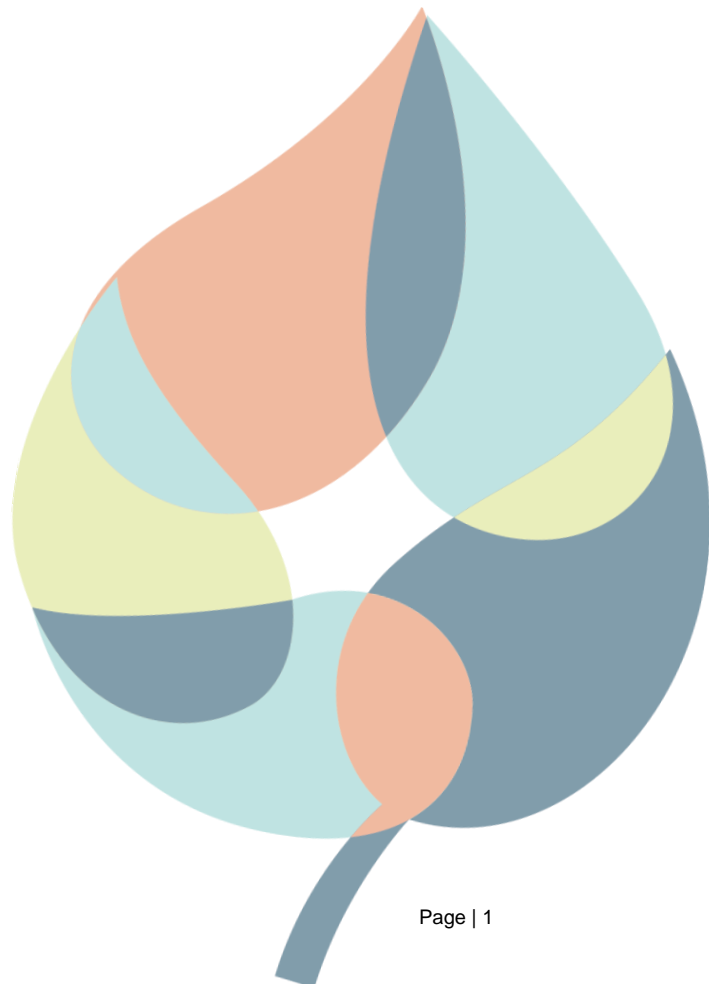Submission Date [19 October 2023]

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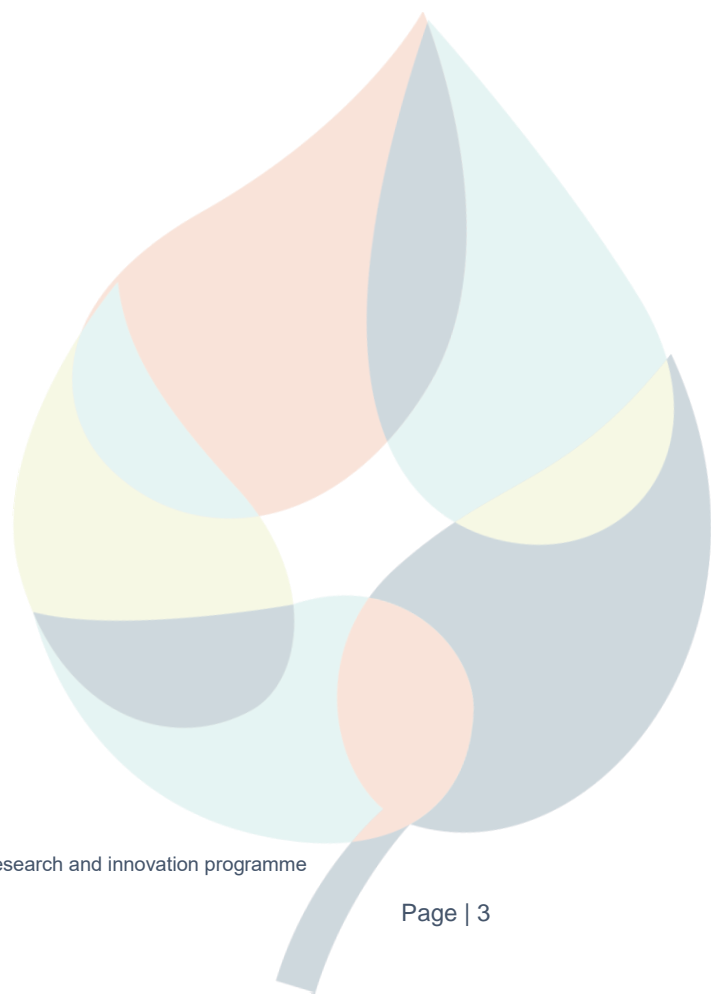
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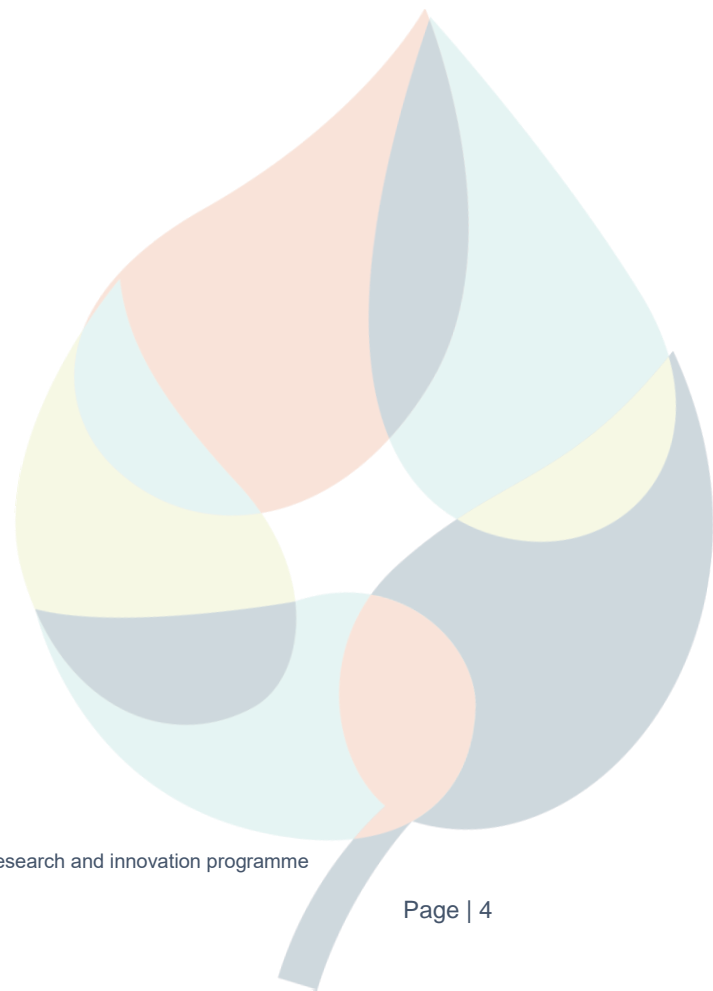
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List of Acronyms

GD	Green Deal
NGO	Non-governmental organisation
RL	Research Line
SME	Small and Medium Enterprises

The ACCTING project

The European Green Deal foresees efficient use of resources for a circular and clean economy. However, inequalities emerge in the context of its policy and interventions. The EU-funded ACCTING project mobilises research experimentation and innovation to promote an inclusive and socially just European Green Deal focusing on the inequalities produced by its policies. The project explores the impact of Green Deal policy initiatives on individual and collective behaviours, provides evidence, and empowers policymakers and stakeholders to anticipate policy responses and potential negative influences, and to mitigate such impacts in decision-making. ACCTING collects new data on Green Deal policy interventions and co-designs and implements pilot actions to reduce or prevent policy-related inequalities.

Project Consortium
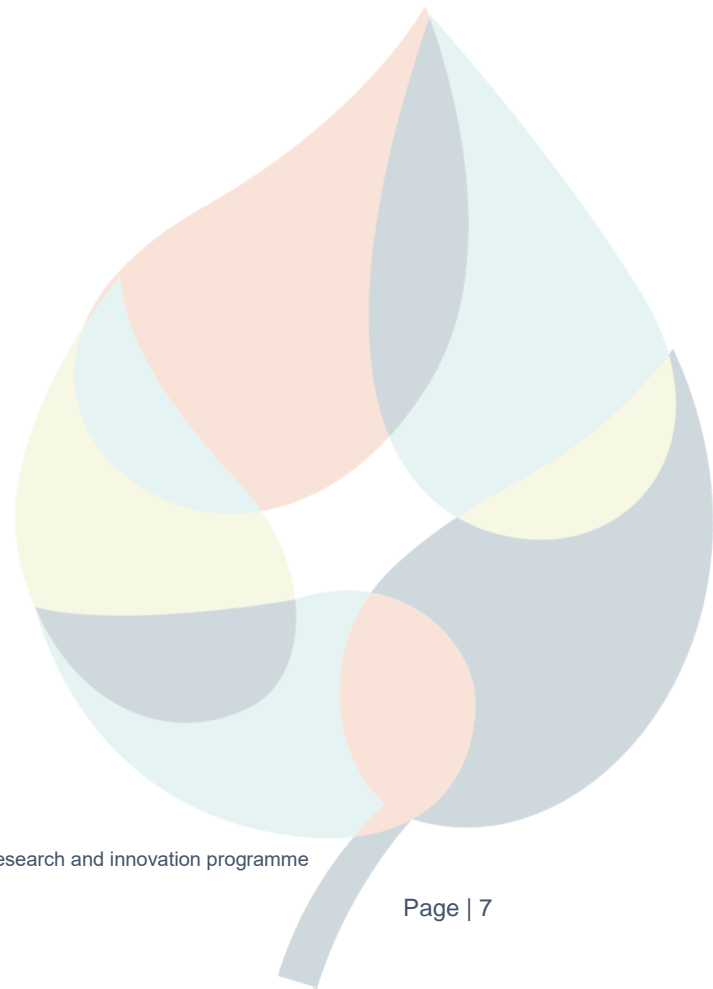
SCIENCE CONNECT — YOUR PARTNER IN SCIENCE (EUROPEAN SCIENCE FOUNDATION)	European Science Foundation (ESF)
ÖREBRO UNIVERSITY	Örebro University (ORU)
YELLOW WINDOW	Yellow Window (YW)
K&I Knowledge and Innovation Srls	Knowledge and Innovation (K&I)
ZSI	Zentrum für Soziale Innovation (ZSI)
NTNU Norwegian University of Science and Technology	Norwegian University of Science and Technology (NTNU)
ICLEI Local Governments for Sustainability	ICLEI - Local Governments for Sustainability, European Secretariat
Sabancı Üniversitesi	Sabanci University (SU)
IGOT Instituto de Geografia e Ordenamento do Território UNIVERSIDADE DE LISBOA	Instituto de Geografia e Ordenamento de Território (IGOT)
SOUTH-EAST EUROPEAN RESEARCH CENTRE (SEERC)	Southeast European Research Center (SEERC)
ALEXANDRU IOAN CUZA UNIVERSITY of IAȘI	Alexandru Ioan Cuza University of Iasi (UAIC)
ecsa European Citizen Science Association	European Citizen Science Association (ECSA)
UNIVERSITY OF GOTHENBURG	University of Gothenburg (UGOT)

Summary

This deliverable aims to provide an overview of the research gaps identified within the framework of the Green Deal policy areas. The findings presented in this deliverable are based on the first cycle of the Research Lines and Open Studios. The primary objective of this deliverable is to address the need for a comprehensive understanding of the existing research gaps within each policy area of the Green Deal. By doing so, it aims to contribute to the development of future research agendas and pave the way for effective policymaking and implementation. This deliverable may serve as a crucial reference document that encapsulates the research gaps identified per Green Deal policy area. By incorporating insights from multiple cycles of research analysis and pilot actions, it offers a comprehensive understanding of the research needs and priorities within the context of the Green Deal. The outputs from this deliverable will facilitate evidence-based decision-making and support the development of effective strategies to achieve the goals of the Green Deal initiative.
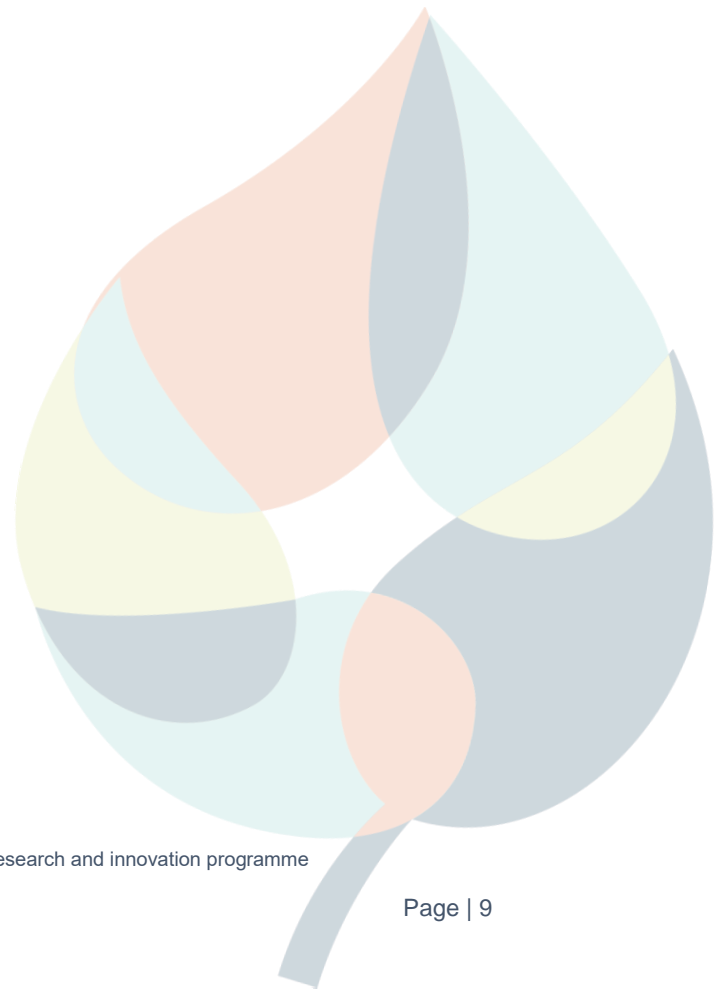
Introduction

This deliverable focuses on the development of future research agendas in the context of Green Deal policies. Its primary objective is to provide a roadmap for policymakers, researchers, and stakeholders to identify key knowledge gaps and address critical research questions. By harnessing the power of interdisciplinary collaboration and evidence-based insights realized by ACCTING, this endeavour aims to accelerate the adoption and effectiveness of Green Deal policies.

Our findings highlight the challenges faced by socially vulnerable and marginalized individuals in achieving behaviour change aligned with the goals of the Green Deal. On the other hand, results from RC1 reveal that enabling and hindering factors for behaviour change are interrelated and context-dependent, while possessing knowledge, education, self-efficacy, and access to equipment and tools are identified as crucial enablers, while their absence acts as hindrances. Social communities and relationships play also a pivotal role in supporting behaviour change, because they provide moral support, awareness, and knowledge sharing. Nevertheless, public infrastructures, societal and economic conditions, and actions (or lack thereof) by public authorities and politicians are highlighted as significant barriers to change.

The development of future research agendas required a comprehensive understanding of the multifaceted challenges faced by the ACCTING consortium, during the first research cycle, and their associated policy domains/RLs. These challenges encompass a wide range of topics, including climate action, clean, affordable and secure energy, sustainable and smart mobility, 'farm to fork' practices (see Farm to Fork Strategy (europa.eu)), biodiversity (see EU Biodiversity Strategy for 2030), and social equity, among others. Each area requires targeted research efforts to unravel complexities, quantify impacts, and develop innovative solutions.

To ensure the success of this deliverable, an inclusive and participatory approach is essential. By engaging with experts from various disciplines of ACCTING consortium, a holistic understanding of research priorities was attained. Furthermore, the outcomes of this deliverable will be instrumental in shaping the research landscape for Green Deal policies. It will facilitate evidence-based decision-making, inform policy development, and support the implementation and monitoring of Green Deal initiatives. By addressing critical knowledge gaps, this deliverable will contribute to the ongoing transformation towards a sustainable, low-carbon, and inclusive future.

In conclusion, the development of future research agendas in the realm of Green Deal policies is of utmost importance to effectively tackle the pressing environmental challenges of our time. By identifying research priorities and fostering interdisciplinary collaborations, this deliverable aims to empower stakeholders to make informed decisions, drive innovation, and pave the way for a greener and more sustainable future.

1 Climate Action

RL1: Valorising Local Knowledge in the Frame of the Community-based Disaster Management and Mitigating Exposure

Findings from Research Activities

Summary of RL1 findings:

1. The extent to which disasters are disastrous depends on the conditions under which those affected normally live. This means that:
    a. Disasters should be regarded not only as events, but as outcomes of long-term social processes including structural inequalities, patterns of housing, welfare and infrastructural investment, and practices of land use and resource management.
    b. Social and natural vulnerabilities to disaster are locally specific and the knowledge and experience of local people must be included in disaster risk management.
2. Dominant strategies of disaster management emphasise general training programmes that aim to raise awareness and motivate preparatory action (see D3.2, part II, section 1.2.1). However:
    a. These tend to overlook the social determinants of disaster and ignore the local context in which disasters unfold.
    b. They may also unjustly burden individuals with responsibility, leading to feelings of anxiety and hopelessness, which undermine lasting change.
3. Disaster awareness, preparation and response are gendered (see D3.2, part II, section 1.3.2):
    a. Men tend to emphasise policy failure and individual self-efficacy. This can reinforce existing forms of ignorance, selfishness, and protectionism.
    b. Women, especially in poor communities, tend to stress the importance of existing social relations and collective action. These are more attuned to the social determinants of disaster.
4. Local people are well placed to perceive, understand, and respond to their social and natural vulnerabilities to disaster (see D3.2, part II, section 1.2.2):
    a. This occurs in both rural and urban environments.
    b. It includes a sensitivity to situated ecological relations and processes.
    c. And to the potential of living with and learning from diverse others.

5. Agency for positive, transformative change exists in unexpected places (see D3.2, part II, section 1.3.3):
   a. In reflections of immigrants on the differences in disaster mitigation policies and practices between their countries of origin and the country of residence.
   b. In the memories and recollections of older people with experience of disaster response.
   c. In the experiences and capacities of disabled persons to respond to uncertainty and change.
   d. In the traditional land use practices of herders and farmers, and their willingness to engage with scientific knowledge.
   e. In the community and openness to others of queer and non-binary persons.

6. Disaster can be effectively managed by addressing social vulnerabilities, activating local agencies, and building and reinforcing community capacities to respond (see D3.2, part II, section 1.3.3). Support can take the form of:
   a. Direct financial aid to those in need.
   b. Investment in housing, welfare, and infrastructure.
   c. Sharing local knowledge and skills within education programmes.
   d. Including local actors within disaster policy processes.
   e. Supporting existing community-based organisations and networks.
   f. Building capacity in municipal governments in poor/marginalised areas.

Limitations of Research & Identification of Gaps

Limitations:

1. The sample size was limited and the coding between the country-level studies not consistent enough for obtaining statistically significant results (see D3.2, part II, section 1.1.4.1). The quantitative data was therefore used primarily as a support for the interpretive analysis of the qualitative data.
2. Respondents tended not to reflect on gender-based vulnerabilities to disaster (see D3.2, part II, section 1.1.4.2). A preliminary finding was drawn from derivative data, but it could be strengthened by additional research.

Research Gaps:

1. There is a need to further explore the role of climate change in disasters and how people apprehend and adjust. This includes:
   a. The (well established) relationship between climate change and natural hazards and how climate change affects the social determinants of disaster (e.g., how people live).
   b. How the effects of climate change (on people and environments) are themselves a form of (slow) disaster.

2. There is a need to better understand change amongst authorities to include local knowledge within disaster planning and policy processes. More research is needed on:
   a. Why and how the pluralisation of epistemic practices and the expansion of the knowledge base occurs.
   b. And what it is that makes for successful gender+ intersectional engagement.

Future Research Agenda

The first cycle research in ACCTING clearly demonstrated that both disaster management and response play a pivotal role in ensuring the safety and well-being of communities facing unexpected crises. We identified several aspects critical to enhance disaster community resilience. Several points and questions arise from this for future research:

The importance of strategies for disaster management to include building capacities for response, federated knowledge networks, rethinking responses, recognizing existing strengths, re-making gender+ community infrastructures, disaster simulations, involving local knowledges, and promoting co-creation and problematisation.

1. **How to transition towards resilient disaster communities.** This includes two tiers of inquiry:
   a. **Building capacities for response:** Future directives and research need to focus more on avenues to improve the ability of communities to respond quickly and effectively during disasters. Our research emphasises the importance of investing in training, resources, and infrastructure to enhance response capabilities. Future research can look further into how to ensure that individuals and organizations have the necessary skills and tools, and that communities can effectively mobilize resources, coordinate efforts, and minimise the impact of disasters.
   b. **Creating federated knowledge networks:** Attention in research should also be put on how and what kind of federated knowledge networks can be established such that they are beneficial for disaster prone communities. As seen in our research, these networks provide a platform for sharing experiences, best practices, and lessons learned across different communities facing similar challenges. Future research should consider the role of supporting collaboration and 'slow solidarity' for communities to learn from one another, enhance their collective resilience, and promote more efficient disaster response strategies.
2. **How to rethink responses.** This implies three potential avenues for the inquiry:
   a. **Recognizing and reinforcing existing strengths:** Communities possess inherent strengths and forms of 'slow solidarity' that can contribute to disaster resilience. Future effort should be focused on recognizing and reinforcing these strengths, involving raising awareness of existing networks, informal support systems, and community-driven initiatives. By

amplifying these strengths and providing support, communities can build on their collective assets, fostering resilience from within.

b. **(Re-)Making gender+ (community) infrastructures:** Another direction that stakeholder and research need to focus on is to rethink technology and infrastructural investment from a people-first perspective, which is essential in building resilient disaster communities. Our research emphasises the importance of considering gender dynamics and community needs when developing technological solutions and infrastructure. Future research needs to delve further into how adopting an inclusive approach can help disaster response address diverse vulnerabilities, promote equitable access to resources, and ensure the active participation of marginalized groups.

c. **Disaster simulations:** Focusing on the development of disaster simulations, such as serious play and backcasting workshops can offer a valuable platform for communities to think through vulnerabilities and disaster management strategies. These simulations should be developed on the basis of research, and they can encourage active participation, foster critical thinking, and facilitate the identification of further potential gaps and innovative solutions. By engaging stakeholders in these exercises, communities can enhance their preparedness and response capacities.

3. **How, when, and whom to involve to include local knowledges.**

a. **Methods for co-creation and problematisation:** Future researchers need to work more systematically on finding ways of engaging local knowledge systems and co-creation methods in disaster management processes, which seems to be very crucial. Local communities possess invaluable insights and traditional practices that can inform effective disaster response. This approach recognises the importance of valuing indigenous local knowledge and integrating it into decision-making processes. Future research agendas should focus on i) incorporating diverse perspectives, and on ii) communities that can develop context-specific strategies that align with their cultural, iii) social, and iv) environmental realities.

2 Clean, affordable and secure energy

RL3: Energy Poverty

Findings from Research Activities

1. Low-income groups, who are vulnerable, often renovate their old buildings to improve insulation. This helps to conserve energy and keep their homes warm.

2. Community / urban shared spaces (e.g., community gardens) have the potential to improve social integrity and cohesion within local communities. This evidence highlights the importance of community-led initiatives in fostering a sense of belonging and connection among individuals, regardless of their nationality. Government subsidies can assist residents in constructing solar panels or renovating their old buildings to conserve energy.

3. Clarification and transparency in energy projects would help residents to participate actively.

4. Providing a clear timeline of the project's progress would assist residents in adapting to the development.

5. Residents participate in different workshops and projects in their communities and have a strong relationship with each other.

6. The government's financial support and incentives can encourage more people, particularly vulnerable groups, to participate in energy projects.

7. Individuals with low incomes face difficulties in paying their bills and require financial assistance from the government to cover their expenses.

8. Self-building initiative associated with good experience, highlighting gender roles.

9. Local initiative building solar panels on houses, saving money and benefiting the environment.

10. Demonstration house showcasing autonomous energy supply using hydrogen technology, addressing the energy crisis and concerns about electricity prices.

11. Distrust in policymakers and lack of long-term planning for the green transition.

12. Transition from city-life to reconnecting with nature, changing lifestyle and perspective, promoting harmony and trading with neighbours.

13. Fondo Saccà energy and solidarity community improving lives, supporting mothers, providing educational services, and promoting environmental activism.

14. Sharing resources within the community, such as electronic devices and heating methods, reducing costs and energy demand, emphasizing the importance of community support.

Limitations of Research & Identification of Gaps

Limitations:

In the first research cycle, we adopted the strategy of surveying residents in specific and limited areas of four countries (Austria, Denmark, Italy and Norway) where we knew that there were ongoing projects for developing community energy initiatives involving vulnerable groups. Nevertheless, we did not deliberately target citizens engaged directly with these projects. Instead, we attempted to select citizens by the criteria of living in the neighbourhoods included in the community energy plan and their vulnerability

characteristics. The rationale was that we would have liked to understand from the interviews the ordinary challenges of vulnerable citizens in satisfying their energy needs and whether they had heard of not of community energy projects in the area and, if so, what opinion they had of them. Clearly, this approach has some limitations that we intend to address in the second cycle of research of the ACCTING project.

1. The first cycle did not target citizens or other actors involved directly in the community energy project; this meant that we did not research the suitability of the individuated community energy projects to involve vulnerable individuals and improve their condition, particularly regarding energy poverty.

2. We selected a small number of cases of community energy projects, and we carried out a limited number of interviews (only ten) in each country. In Denmark and Norway, all the interviews were collected in the areas involved by a case per country, while in Italy and Austria, the same number of interviews were collected in a few areas. This approach that was finalised at surveying chiefly vulnerable individuals about their personal experiences as energy consumers, had the limitation of considering only a limited and rather small number of citizens (40) across four different countries and in some countries (Italy and Austria) across different sites, that clearly could present quite different geographical characteristics and institutional and social contexts.

3. We focused on individuals who didn't face any issues with energy services and had no trouble paying their energy bills. As a result, some of the interviews could not provide a comprehensive understanding of energy poverty in the chosen community. Based on the narrative interviews, the findings cannot be generalized to the wider community. This is because individuals have unique life experiences and may not face the same problems or challenges as those interviewed.

4. During the narrative interviews, language barriers were a limitation in certain countries like Norway. We only interviewed individuals who were fluent in English, which resulted in certain groups, such as vulnerable populations, being unable to participate due to language barriers.

Research Gaps:

The research gaps presented here regard both the ACCTING project and the literature on community energy schemes, without the ambition of being exhaustive and capable of accounting for our considerations of all the vast amount of literature so far produced regarding community energy schemes.

1. This research was kickstarted by the ambition of filling a research gap: chiefly the seemingly limited information and research regarding community energy projects deliberately targeting vulnerable individuals and aiming at reducing energy poverty. This gap arguably regards particularly energy communities intended as bottom-up initiatives, i.e., initiatives initiated, led, or significantly and actively participated by citizens or citizens' organisations, albeit not exclusively participated by citizens only, as we know that often local authorities or other organisations might contribute particularly in deprived areas. From our perspective, current literature cover generically energy communities often participated and led by resourceful individuals or energy projects in council (social) housing contexts of

high deprivation where citizens are most often considered passive recipients of energy upgrades delivered by the municipalities or housing associations.

2. Further specific research gaps that we aim to address regard the involvement of specific vulnerable groups. Particularly, we made the choice in this project to use a gender plus approach, meaning that our research would be attentive to gender equality aspects and with regards to energy communities, so we are interested in understanding how and to what extent women, whom we know to be on average displaying stronger pro-environmental attitudes than men (Gifford and Nilsson, 2014)1 are involved and participate in community energy schemes.

3. Further vulnerable groups whose participation we are interested in investigating are the young and the elderly, who often do not have the means to invest in energy communities and ethnic minorities who might find that communication, cultural and possibly financial barriers prevent them from participating in energy communities.

4. Another research gap is the variation in the geographic distribution of the chosen case studies. It's essential to consider each community's unique features and cultural background before conducting narrative interviews. For example, Norway, one of the case studies, has relatively minor issues with energy poverty, which may lead to incomplete data analysis as some individuals may have yet to experience significant struggles to discuss in their interviews.

5. Some of the narrative interviews highlight people's participation in community gardens, which could potentially increase community-led initiatives by offering financial incentives for installing solar panels in those gardens. However, RL3 solely focuses on community energy projects and does not consider these crucial initiatives that drive community energy projects. Therefore, more attention should be given to them. It is imperative to consider each country's various policies and strategies in providing energy services to its citizens. Norway, for instance, has a highly efficient welfare system that extends financial assistance to all its residents, regardless of location. The government shoulders the energy expenses of all groups, irrespective of their income levels, ensuring that virtually no one faces difficulty accessing energy services. Therefore, when conducting research, it is essential to carefully consider such policies and opt for suitable case studies for investigation.

Future Research Agenda

1. With regards to the ACCTING project, we aim to address, in the second cycle of research, the limitations and gaps so far highlighted targeting with qualitative and possibly quantitative methods, vulnerable citizens and organisers of energy communities aiming at reducing energy poverty and at including the active participation of vulnerable groups. Our research will deepen our understanding of the barriers and drivers affecting vulnerable individuals and other actors engaging in the target type of energy communities.

2. While the scope of our research will be limited to two or three cases in the countries of Austria, Denmark, Italy and Norway, we believe that future research should address the differences of institutional context and social culture across

Europe in order to contribute meaningfully to producing policy recommendations that might support policymakers willing to promote further energy communities as significant agents of change in the European Energy Transition.

3. We advocate for employing, as much as possible, an energy, social and environmental justice framework that will highlight the necessary actions and schemes to increase equity and inclusion towards vulnerable groups. While this approach isn't new, we believe it can be further developed and more often applied in social science research design in order to return policy valuable research that might facilitate an equitable Energy Transition.

4. Through narrative interviews, it has become clear that people are aware of the importance of nature conservation and the need for sustainable energy consumption. It would be beneficial for future research to focus on training different groups with a sustainable approach in the community, especially those who may be more vulnerable. During a narrative interview, participants may share their experiences based on their beliefs or desired outcome, which means we cannot rely solely on their perspective. To gain a more comprehensive understanding of the research topics, it is recommended to use a mixed-method approach. Narrative interviews have limitations, so utilising surveys and observations can provide valuable information about the community.

5. Residents can gain a better understanding of the significance of energy consumption behaviour and their role as activists in community energy projects through workshops. Further research can be conducted to establish these workshops and clarify the energy projects, increasing people's awareness of what will be done in their community and encouraging greater engagement in these projects.

6. To involve more people in community energy projects, it is important to establish trust with policymakers, local authorities and NGO. Unfortunately, low-income groups often cannot participate due to financial constraints. However, more research should be done on how the social media can help build trust by sharing news and updates about ongoing projects and government support. This can encourage citizens to get involved and reap the benefits of these projects.

RL4: Adoption of EEMs and further environmental measures In Micro-/SMEs

Findings from Research Activities

1. Research was implemented in Belgium, Greece, Italy, Norway and Romania. In all these countries most entrepreneurial activities have been (and in some cases are still) affected by the economic, pandemic and energy crises. The context of these crisis seems to have exerted an important influence on the decisions informants have taken on issues of environmental relevance within their enterprises.

Particularly in Belgium, Italy, and Norway, informants often report that the current energy crisis was the main reason pushing them to reduce energy consumption, while environmental effects are considered a plus, but not the decisive factor.

2. Several measures and different technologies have been adopted by the informants or are being considered by them.

   a. For generating energy, a number of entrepreneurs have installed or are planning to install solar panels. Other measures include renovating their places of business to ensure better thermic insulation (windows, roof, and walls), utilising heat pumps or sun boilers, as well as changing the software system to reduce energy consumption.

   b. Packaging and waste problems come through in multiple sectors and narratives, with entrepreneurs trying to minimise packaging and plastics, using biodegradable materials, minimising food waste, and engaging in the circular economy by recycling and reusing.

   c. Further measures include intensifying the use of eco-sustainable products, also by turning to vegetarian food, improving water taps, avoiding the use of chemical materials and choosing those with a low-carbon footprint, producing and retailing sustainable products, and promoting sustainable mobility.

3. It is important to highlight that some measures met resistance from clients, mostly because of the higher costs they frequently entail. Resistance on the part of employees was also recorded. In these cases, they were generally connected to changes in work procedures or daily routines in the workplace.

4. It is also to notice that no specific gender-related issues seem to emerge, despite a slight majority among the informants being women. The impression is that almost all informants assume that their model of managerial behaviour is not influenced by gender. While the general lack of reference to gender is probably connected to the limited sample, it seems to also suggest some lack of awareness on the part of the consulted informants on both the barriers and the enablers to change that are connected to gender in the business environment.

5. Vulnerable actors are often marginal in the attention of entrepreneurs; however, those entrepreneurs who are sensitive to the inclusion and support of vulnerable groups are also the ones showing greater environmental awareness.

6. Differences were recorded as concerns, incentives, or grants from the state for environmentally sustainable investments. While in some countries (e.g., Italy and Romania) entrepreneurs benefit from them or complain when they cannot access them, in others (notably in Norway), some informants pointed to the need for a thorough change in market dynamics, not "distorted" by the intervention of public authorities.

7. Finally, in some of the collected narratives (17 out of 50: 4 in Italy and Romania, 3 in Belgium, Greece, and Norway), significant and often recent changes in the management of environmentally relevant issues are recorded. In some cases, the enterprise is moving to a new manufacturing site that would allow it to implement choices that ensure maximum energy savings and the adoption of additional EEMs, like installing now solar panels. In others, energy-saving and environmentally friendly practices are implemented in one's premises, such as transport/mobility reduction, use of ecological materials etc. Some change

processes go beyond the professional realm and involve personal life choices. It is the case of an informant who used to work in a restaurant and who decided to stop eating meat and opened a vegetarian restaurant.

Limitations of Research & Identification of Gaps

Limitations:

1. The sample size was not large enough and the coding between the country-level studies not consistent enough for statistically significant results. The quantitative data are therefore used primarily as a support for the interpretive analysis of the qualitative data.
2. **Bias in Environmental Concerns Among Study Respondents.**
   The respondents in the study likely have a bias towards environmental concerns, as they self-selected to participate. This means that the narratives may not represent entrepreneurs who are not environmentally conscious or unable to prioritize environmental issues due to constraints or lack of interest. It is important to acknowledge that these entrepreneurs make up the majority of micro and small businesses, but they will be challenged for inclusion in the study.

Research Gaps:

1. **Gender and vulnerability aspects are not adequately addressed in the research.**
   The findings suggest that gender-related issues did not prominently emerge among entrepreneurs. A gap exists in investigating whether gender bias or gender-specific challenges impact sustainable entrepreneurial practices, especially when considering a larger and more diverse sample.
2. **The research should aim to include more intersectional profiles and vulnerable groups.**
   While entrepreneurs who support vulnerable groups show greater environmental awareness, there is a gap in understanding the mechanisms and strategies employed by these entrepreneurs to achieve this dual objective.
3. **The research scope should refine its focus,**
   The research should prioritize for-profit enterprises as the primary target. However, it could be beneficial to include non-environmental non-profit actors engaged in entrepreneurial activities, such as social enterprises, to broaden the perspective and understanding of the entrepreneurial landscape.
4. **Research should explore ongoing transformations in micro and small enterprises.**
   The current context of multiple crises and precarious situations has led to a growing tendency for greater cooperation among micro and small enterprises in managing environmental challenges. Research should investigate the extent to which this transformation is real and sustainable. It is essential to understand how this increased cooperation can contribute to sharing tested practices and solutions

for climate change mitigation among micro and small enterprises, fostering a more widespread adoption of sustainable practices.

Future Research Agenda

1. We recommend the establishment of a dedicated research line focused on micro enterprises owned and operated by vulnerable individuals, taking into account intersecting factors such as gender, ethnicity, and socioeconomic status. This research would shed light on the unique challenges and opportunities faced by these individuals in starting and sustaining their businesses, as well as identifying effective strategies for their support and empowerment.

2. An important area of investigation is the implementation of support schemes specifically designed for micro enterprises owned/managed by vulnerable individuals. This research would explore different types of support, such as mentoring programs, financial assistance, and capacity building initiatives, to determine their effectiveness in promoting the growth and sustainability of these businesses. Additionally, it would examine how these support schemes can address the specific needs and barriers faced by vulnerable entrepreneurs.

3. A critical aspect to explore is the suitability and impact of easily accessible targeted information and targeted financial support on the development of microenterprises. This research would assess the effectiveness of providing relevant and easily understandable information on topics such as business planning, marketing, and legal requirements to micro entrepreneurs. It would also investigate the impact of targeted financial support, such as microloans or grants, in facilitating the establishment and growth of microenterprises owned by vulnerable individuals.

4. The role of job and employment centres in supporting micro entrepreneurs should be investigated, specifically in terms of providing information and seed funding. This research would examine the potential of job and employment centres to serve as resource hubs for micro entrepreneurs, offering guidance, training, and access to funding opportunities. By understanding the effectiveness of these centres in supporting the needs of micro entrepreneurs, strategies can be developed to enhance their role in fostering entrepreneurial success.

5. Exploring the link between pro-social and pro-environmental attitudes and their suitability in facilitating the establishment of eco-friendly and socially inclusive businesses is crucial. This research would investigate the relationship between individuals' pro-environmental values and their inclination towards socially responsible entrepreneurship. It would explore how fostering these attitudes can contribute to the creation of businesses that prioritize both environmental sustainability and social inclusion, and examine the potential benefits and challenges associated with such ventures.

6. The investigation of possible formal and informal synergies and cooperation among microenterprises owned by vulnerable individuals (and eventually further microenterprises) for environmental sustainability actions is essential. This research would explore the potential for collaboration and collective action among

micro entrepreneurs to address environmental challenges and promote sustainable practices. It would identify opportunities for joint initiatives, resource sharing, and knowledge exchange, aiming to enhance environmental sustainability efforts and foster a sense of community and support among microenterprises operated by vulnerable individuals.

3 Sustainable and smart mobility

RL7: Transport Poverty

Findings from Research Activities

The research conducted in this study contributes to the understanding of transport poverty and aims to address social, economic, and cultural barriers in the context of sustainable transportation in both urban and rural areas. The study was carried out in six countries: Belgium, Greece, Italy, Portugal, Romania, and Sweden. Each country-level study focuses on socially vulnerable and isolated areas within specific cities or rural regions. The primary objective of each case study is to examine the behavioural changes of families residing in these locations, with a particular emphasis on identifying the factors that enable or hinder the adoption of more sustainable travel practices. Given the gendered nature of mobility, the research also explores the influence of gender norms on transportation behaviours, such as access to different modes of transport. Gender-related issues encompass patterns of domestic responsibilities affecting journey times and destinations, discrepancies in access to transport (e.g., car ownership and usage), and differences in employment patterns (including higher rates of part-time work among women compared to men).

The research line on transport poverty provides insights into how a fairer and more sustainable transport system can be achieved in the context of the Green Deal without reproducing already existing gender+ intersectional inequalities.

1. The findings suggest there is the general perception that using the car is a necessity and the normal thing to do. This perception of normality however obstructs the ability to see what could be, making it even more difficult to challenge the car norm in the studied areas. (Based on D.3.2: 7.2.6)
2. With regards to transport poverty, clearly transport disadvantaged "pay" with their time, scarce recourses, and lack of convenience having to rely on often poor public transport.
3. Precarious bus structures (routes, times, costs) limit the possibilities of disadvantaged people further, who already are restricted in their opportunities and freedom of movement, leading to transport poverty.
4. Intersections of geographical, gendered, classed, aged, disability and ethnic (including language) vulnerabilities tend to further marginalise those users who for

various reasons cannot access cars, and the necessary costs for transport put them at risk of transport poverty.

5. Infrastructures for cycling and walking are generally underdeveloped. Socioeconomic vulnerabilities in combination with a lack of transport choice and accessibility are extra challenging for people with disability, old age, health problems, and for people with care responsibilities, e.g., single mothers (see https://www.merriam-webster.com/grammar/ie-vs-eg-abbreviation-meaning-usage-difference). Sometimes people other than single mothers are responsible for providing care (e.g., grandparents, certain fathers, uncles...).

Behaviour change seems to be enabled by finding the acceptable balance between time, costs, convenience and personal independence. (Based on D.3.2: 7.2.6; 7.4.1)

1. Ideological commitment drives change. Narratives emphasize the need for individual action and a solution-oriented approach to achieve change.
2. Learning from experiences in countries where sustainable transport is the norm influences perceptions and motivates implementation. For example, having experienced cycling friendly cities in other countries inspires to change.
3. Support from communities, shared norms, and aspirations play significant roles in knowledge sharing and learning opportunities. For example, biking communities.
4. Family dynamics can be a hindrance or facilitator of change. Balancing transport needs, especially with children, adds complexity but can be overcome with shared understanding and commitment.
5. Government subsidies for electric transport alternatives and public transportation passes makes change more accessible, particularly for low-income individuals. These policies broaden access to electric equipment and public transport, aligning with sustainability goals.

Limitations of Research & Identification of Gaps

Limitations:
The narratives that inform this research have been collected for the benefit of its exploratory approach, to flag up difficulties and hindrances for change, within and across the selected sites.

1. There are differences in focus across the country sites, with some more in depth and other more diverse in their respective emphasis on gender+ and intersectionality.
2. In the narratives, gender was in general not very explicit, apart from women expressing not feeling safe in the transport system at night or in certain neighbourhoods.
3. Some sites present more 'absolute' forms of transport poverty (i.e., where the capacity to afford transport in combination of a lack of transport options is a major issue), and other more 'relative' (i.e., where the problem is more related to experiences of lack of sustainable transport options).

Research Gaps:

1. In line with previous studies, this study identifies the need to further address the tension between ecological sustainability and socio-economic disadvantage.
2. The role of communities for supporting change needs to be further studied to understand how various forms of communities, their practices and aspirations, can inspire and facilitate change for vulnerable and marginalised groups.

Future Research Agenda

1. **Gendered mobility and gendered dynamics of change**
   a. The results have provided insights into transport poverty and change within families, but there were few explicit expressions about gender inequalities and transport (see limitation 1 and 2; research gap 1).
   b. Future research should delve deeper into gendered dynamics, exploring how gender relations hinder or enable change in transport.
   c. Emphasis should be on how mobility needs are constructed, experienced, and changed by families in vulnerable and isolated areas, building upon the difficulties identified.

2. **Transport policy for fair and sustainable transport**
   a. The results show how precarious bus structures (routes, times, costs) limit the possibilities of disadvantaged people and lead to transport poverty, so more research is needed on how achieving fairer and more sustainable transport systems.
   b. Future research should critically examine how measures for sustainable transport, such as low emission vehicles and digital technologies, impact vulnerable groups.
   c. By considering the effects of these measures on different contexts and vulnerabilities, such as low income and discrimination, the research can explore inclusive solutions and involve vulnerable groups in policy interventions.

3. **Actions and actors for change**
   a. As indicated in the research gaps, the role of communities for supporting change needs to be further studied to understand how various forms of communities, their practices and aspirations, can inspire and facilitate change for vulnerable and marginalised groups.
   b. Future research should establish connections with existing bottom-up initiatives addressing transport poverty, contributing knowledge for a socially just and sustainable transport system.
   c. Specifically based on this research line, further study should be conducted on cycling activism and promotion, exploring how cycling can potentially help alleviate transport poverty.
   d. Transformative learning potential among children and adults regarding cycling should be examined, recognizing that cycling is not a one-size-fits-all solution and addressing issues of inclusion and exclusion based on various factors.

RL8: Post-Lockdown Transport Choices

Findings from Research Activities

1. **Public transport as an emerging criticality**
   In the 60 narratives collected under RL8, keywords analysis revealed that problems related to public transport (delays, unreliability, insufficient frequency, lack of comfort, safety) are by far the most mentioned (39 occurrences), followed by problems connected to poor infrastructural conditions (poor road systems and consequent traffic congestion, lack of bike lanes or parking lots: 36 occurrences).

2. **Physical and psychological benefits of active mobility**
   Still in the analysis of keywords from the narratives collected, the most highly ranked group of keywords highlighting positive experiences connected to mobility referred to the benefits of active forms of mobility, like cycling and walking (19 occurrences).

3. **Transport modes and feelings of independence**
   The second group of keywords connected to positive experiences in mobility is about feelings of independence and autonomy connected to individual (e.g., both cars and bicycles) vs. collective (e.g., buses) transport means (10 occurrences).

4. **Post-lockdown transport choices**
   Among the 60 interviewees who contributed their narratives, some people reported having decided to abandon completely public transport and use the bicycle or scooter as their primary means of transport, while others, especially among the disabled, elderly and people who have to commute long distances, opted for a private car or taxi. The choices depended very much on the available infrastructure of bicycle lanes, the cycling culture of the country and the motivation of the individuals.

5. **Safety as a gendered issue**
   Safety on public transport was mentioned by different types of participants in all countries, bringing up the issue of gender as crucial in assessing the different ways people feel in danger and adopt various strategies to face this. The strategies put in place to maximise safety, however, generally represent restrictions to liberty of movement, but also to behavioural change towards more sustainable (in this case collective) means of transport, resulting in unequal mobility opportunities.

6. **Social dynamics as enablers of behavioural change**
   To analyse the enabling and hindering factors of behavioural change emerging from the narratives, three thematic dimensions have been used: resources, social dynamics and structural conditions. The emphasis on each factor varies across countries, but in general, structural conditions resulted to act more often as hindering factors than as enablers (a total of 91 mentions compared to 57), social dynamics more often as enabling factors (68 mentions compared to 26), while

resources were less univocal, with 113 mentions as enablers and 107 as hinders of behavioural change.

7. **The relevance of cognitive factors**

   Among the enablers, cognitive factors also emerged as very relevant. In particular, "having certain beliefs and values" is a decisive factor in driving behavioural change, as well as the "availability of the necessary knowledge or information" and "perceived self-efficacy".

8. **Structural factors as hinders of behavioural change**

   With regard to obstacles to behavioural change towards more sustainable travel, factors related to money, time and social and economic conditions emerged as the most relevant. Linked to these are poor infrastructural conditions, which were the most frequently cited hindering factor in the narratives, referring to both public transport and the possibility of cycling or scootering. Missing or failed policies and politics have often been referred to as explaining the reasons for individual non-environmental choices.

9. **Most relevant vulnerability profiles in connection to mobility**

   The most recurrent themes in the narratives collected in the countries involved concern disability, age, socio-economic background and geographical remoteness. Interestingly, not many themes arose concerning gender (with the exception of safety issues on public transport) despite the high number of participants recruited for this reason.

10. **Intersectional axes relevant to sustainable mobility**

    From first-cycle narrative interviews, there are no clear and recurring intersectional patterns. Nevertheless, a few notations can be made.

    a. The intersectional axis linking **socio-economic and geographical** vulnerabilities is the most often mentioned. Indeed, the disadvantaged socio-economic status often leads people to have to live in more peripheral areas, where the cost of living and housing is lower.

    b. **Disability intersects** with various other vulnerability grounds and particularly **with socioeconomic background**. State policies are frequently mentioned as making mobility more difficult for people with a disability, as in the case of municipal measures to discourage car use coupled with the lack of incentives to buy sustainable cars for people with disabilities.

    c. The intersection of **ethnicity and socioeconomic background** was often highlighted, showing greater difficulties for those of foreign backgrounds to afford private vehicles and, particularly, more sustainable vehicles. In most cases, participants from other ethnic origins used public transport for economic reasons, and in a few narratives, they described experiencing racist behaviour from other passengers.

    d. On the ground of **gender**, **the intersection with ethnicity** seems to play an additional role in exposure to sexual harassment on public transport. The same is true for **gender identity**, connected to fear of sexual harassment and transphobia. This leads respondents to adopt specific transport strategies at night, limiting their autonomy.

Limitations of Research & Identification of Gaps

Limitations:
1. **Diversity of cases and target groups**. The narratives collected in the first research cycle covered a rather diverse sample of participant profiles, but while some countries focused on a specific vulnerability in order to analyse in depth the opportunities, difficulties and challenges of a selected typology of people, others opted for a more diverse sample in order to provide a view of the different issues present in a single site. These different choices produced a wealth of results but limited comparability perspectives.
2. **The choice of specific sites** within each country evidently provided a partial picture of the situation at the national level and also made cross-country comparisons more complex: the transport needs of the inhabitants of large cities such as Lisbon, Rome, Oslo and Thessaloniki are clearly different from those of small or medium-sized towns such as Örebro and Iași.
3. **Few intersectional profiles** were covered in the first research cycle.
   All these variances were functional and somewhat inherent in the exploratory perspective of the first research cycle.

Research Gaps:
1. **COVID-19 and other crises' longer-term impacts on mobility choices**. The COVID-19 pandemic confirmed its ambivalent impact on transport practices. Several cases of change have been triggered by the pandemic and the need to avoid public transport. When this need was coupled with environmental sensitiveness and/or a culture of physical and mental wellbeing, the choice has been for walking and biking practices and the change seems to have often become permanent. It is also to stress that this was more frequent among those living in central areas, where infrastructures for active mobility are generally more available. Among the disabled and the elderly, the choice to walk more or cycle during COVID-19 has been more frequently reversed after the pandemic, with a return to the use of public transport. The choice for cars seems to be prevalent and more permanent among those who need to commute across long distances, which are more frequently low-income groups. However, the longer-term consequences of the pandemic on mobility habits, including in terms of inequalities in the possibility to adopt sustainable transport behaviours will need to be explored further, together with the concurrent impact of other crises on transport choices, such as the energy crisis.
2. **Impact of policies on accessibility and exclusion**. The impact of governmental or municipal environmental policies on equal access to mobility choices would be particularly important to address in the second research cycle. Just a few respondents made specific reference to environmental policies, with the exception of some participants who emphasised concerns about bans on old cars, e.g., diesel cars, or in general about municipal measures to discourage the use of cars in the city. Others have instead complained about the lack of public investments in safe infrastructures for walking and, above all, cycling. These types of policies certainly have an impact, be it structural/infrastructural, economic or psychological,

on the accessibility of various categories of people and should be more consistently addressed.

3. **Individual and collective agency**. It would be worthwhile to focus on the interplay between individual and organised strategies to overcome mobility problems. While some bottom-up measures supporting the use of alternative mobility, such as bike-to-school or bike buddies initiatives, were mentioned in the collected narratives, it would be relevant to further look at advocacy or engagement actions to protest against poor infrastructure, public transport conditions and transport-related environmental measures. Organised protest groups were not considered in the collected narratives but would usefully be added to the picture.

4. **Environmental agency vs. structural conditions (and psychological consequences)**. Finally, in many narratives, a certain internal conflict emerged between the practices implemented and the values proclaimed: several people said they were forced by circumstances to adopt transport solutions that they would not otherwise take if they were to follow their ideals. While some 'champions' defied structural difficulties and decided to move more sustainably despite the risks and daily difficulties, many respondents could not break out of this blockage and continued to make the same choices also out of habit. Feelings of frustration and internal struggle could be recorded in these situations, which would be interesting to analyse by applying psychological frameworks such as for instance the one connected to cognitive dissonance (Festinger, 1957) or other models.

5. Connected to the previous point, **collective action** could be investigated for its potential as a mediating factor of the cognitive dissonance experience and resolution (Sande & Zanna, 1987), as it could work as the conduit for the agency for behavioural change to express itself, letting individual concerns be taken into account by collective realities and solutions, and promoting structural changes. These interdisciplinary sociological, psychological and anthropological aspects definitely deserve further exploration.

Future Research Agenda

1. **Intersectional inequalities and behavioural change**
Based on the results of the first research cycle, three perspectives emerge for the analysis of the relation between intersectional inequalities and behavioural change:
   a. The impact of inequalities on the mobility of intersectional vulnerable groups
   b. The impact of the policies supporting sustainable mobility on intersectional vulnerable groups
   c. The impact of inequalities on the possibility of intersectional vulnerable groups to practise sustainable mobility options.

2. **Assessing mobility policies including intersectional considerations**
Research should be funded to thoroughly assess concrete mobility policies integrating intersectional perspectives.

    a. It is necessary to systematically assess the impact of 'green policies' on different vulnerable groups, both those raising protests (e.g., limited traffic zones) and those that do not (e.g., policies supporting electric cars).

    b. The different patterns of the mobility of care should be analysed, and the impact of policies should also be assessed from this perspective.

3. **Specifically assess the impact of policies supporting public transport**
Along the lines sketched in the previous point and considering the specific barriers that have emerged in the first cycle about using public transport, it would be important to assess the impact of policies incentivising it (e.g., the German "€ 49 ticket" policy, as a monthly subscription ticket that gives access to all urban public transport throughout Germany).

    a. What kind of mobility do these policies support (e.g., are they supporting inter-modality? Are they considering the mobility of care)?

    b. What are their impacts on different intersectional groups?

4. **Road safety**
Research should focus on road safety, which emerged as a relevant concern and a hinder to behavioural change, particularly towards active mobility modes, with complaints frequently raising the issue of the lack of public investments in safe infrastructures for walking and, above all, cycling. Existing mobility policies and structures should be assessed for safety by integrating intersectional considerations connected to a multiplicity of vulnerable groups, and with a specific focus on families.

5. **The role of activism supporting sustainable mobility**
The results highlighting the relevance of social dynamics and cultural and cognitive aspects as enablers of behavioural change, even in situations characterised by structural obstacles, invite to focus research attention on activism, such as, for instance, cycling activism, to support sustainable transition at both the individual and collective level. The role of collective action to support sustainable behaviour, especially for individuals facing gender and intersectional vulnerabilities, and the different forms of solidarity and collective engagement highlighted in the narratives should be extensively analysed.

6. **The characteristics and reasons of activism opposing sustainable mobility measures**
Research should focus on the often violent and extended protests and activism against those policies that, for instance, limit car use.

    a. What is the nature of activism resisting change?

    b. On what different grounds are people protesting?

    c. Are there "frustrations" behind the protest?

    d. Which vulnerable groups or what other social groups are involved in this kind of protest?

    e. At what conditions are vulnerable groups able to turn to activism supporting the transition towards sustainable mobility?

4 Farm to fork

RL5: Improving Food Security and Healthy Diets in Vulnerable Communities, through Local Production, Informed Consumption Practices and Circularity

Findings from Research Activities

The Future Research Agenda presented in this report is based on the key findings from the first research cycle of RL5 I in the ACCTING project. These findings are summarized as follows:

1. **Confirmation of gendering of food:** The findings confirm that food is gendered in terms of values and access. It supports the idea that gender plays a role in shaping people's relationship with food (e.g., women usually do the shopping and look for the best prices and healthiest food; they are often responsible for cooking meals and preparing snacks to take to school and work).

2. **Role of women in food security and sustainability:** It is interesting to note that, except for one situation, the protagonists of the better stories selected in the five countries are women. This emphasizes the important role women play in food security and sustainability as producers, household food managers, and consumers in different contexts.

3. **Socio-economic conditions as a driver of vulnerability:** The research shows that socio-economic conditions are the main driver of vulnerability for both women and men. Both genders perceive social and economic background and lack of money as obstacles to change (e.g., accessing organic food).

4. **Social networks can play as enablers of change.** The role of family neighbours and the community (e.g., offering food, helping with cooking, doing shopping, etc.) are key in helping the most vulnerable as they are provided a safety net and a caring support network.

5. **The role of farming, street and small markets, and community gardens as** complementary sources of food and/or options to buy fresher, local, seasonal and less expensive food.

6. **Case studies within dimensions of food security:** The report positions each case study within the dimensions of food security. Turkey and Portugal face challenges related to the availability and accessibility of food, while Greece and Sweden highlight issues with food accessibility and utilisation. Austria relates to both groups. The socio-economic barriers to food access are identified as a major challenge.

7. **Challenges related to food availability and agriculture:** Some narratives highlight challenges such as limited variety of food in a country (e.g., Austria) and the threat to agriculture due to urban pressure and tourism (e.g., Turkey).
8. **Challenges in physical access to food:** Narratives from Greece indicate that limited diversity of food choices in stores and restaurants, such as the lack of vegan options, constrains the physical access to food.
9. **Better stories of real change:** Despite the challenges, there are better stories that highlight individuals who have implemented real change. These stories showcase positive examples of sustainable practices and overcoming barriers (e.g., changes to healthier eating habits, favouring fresh, local and organic fruits and vegetables despite financial restrictions, or using leftovers to avoid waste)
10. **Behavioural change in accessing food is mostly triggered by values, beliefs, and cultural aspects,** being education and knowledge, health issues and motherhood/parenthood drivers of that change**.** Some sustainable practices are related to environmental knowledge (climate change, food safety, health) and with limited economic resources (water, waste reduction). Sustainable food supply in street markets, small markets, and small circuit chains, and the cultivation of urban vegetable gardens and urban farming are perceived not only as complementary sources of accessing food but also access to higher quality food.

Limitations of Research & Identification of Gaps

Limitations

1. The first research cycle was based on data collected in fifty narrative interviews conducted in five different countries. The research findings can reflect some subjectivity due to the sample size and the selection of participants (e.g., they may not be fully representative and inclusive of the most vulnerable and socially marginalised groups). The methodological approach involves also limitations related to questions that might be interpreted differently by both participants and researchers.
2. The findings of RL5 Cycle 1 were the result of case studies from five different countries (Austria, Greece, Portugal, Sweden, Turkey), which provided a huge diversity in relation to accessing food. This diversity complicates our aim to find common points between EU countries that are needed so for comparison purposes as to support policy recommendations in a European level
3. Some findings were similar to those of RL6 on values. Links between the two lines were not explored.

Research Gaps

1. While this research contributes to new insights by its focus on vulnerable and marginalised individuals, systemic understanding of the different dimensions of food security is still limited.
2. There is a need to gain insights into the multidimensionality of food security and its different scales of analysis.

3. Geographic contexts play a fundamental role, and literature shows some difference between Northern and Southern European countries in terms of food security, something we need to understand better. For instance, the access to urban gardens and farms varies a lot in the different countries. While in some Southern European countries' urban agriculture the informal use of spaces is key to improving food security of vulnerable communities, this is not the case in other countries. This aspect needs to be addressed further.

4. Although there are global, international and national contexts in terms of food policies and governance, the development of inclusive food security – within the scope of RL5 – depends on both each social-cultural background and lower geographical (micro-regional and local) contexts of governance, that need to be studied.

Future Research Agenda

The findings of the Research Cycle 1 provided important insights to understand the drivers of behavioural change (barriers and enablers) towards more sustainable and healthy eating habits of vulnerable populations. However, the interplay between enabling and hindering factors is complex, varying across individual conditions, geographic contexts, social and economic structures, values and beliefs and cultural traditions.

Based on the previous research findings and the limitations and research gaps identified above, the future research agenda will address five main research questions:

1. **How can urban agriculture be a part of an inclusive spatial planning and a sustainable economic solution to vulnerable communities / neighbourhoods?**
   - How can land and the accessibility to the land be secure in the present and in the future in urban/peri-urban contexts (that is, in areas facing a huge urban pression)?
   - What is the role of public policies and how are they facing this challenge?
   - How to boost the transformative potential of urban gardening and small-scale farming?
   - How can vulnerable people have access to land and to the economic and environmental benefits from that?
   - Are there sustainable alternatives for local food production by the vulnerable population without resorting to land in open space? (e.g., home / vertical gardens).

2. **At what extent / in what sense do public and private stakeholders have responsibility, are sensitive and implement / boost policies, interventions, actions involving vulnerable communities, also with a gender sensitive approach, to secure land and preserve the environment, plus providing food justice and health protection?**
   - What institutions, organizations and relational dynamics are fundamental to induce changes towards food security, informed local production and consumption, healthy diets, and circularity?

- What is the current and potential role of these entities and their relationships with each other?
- Which are the necessary and foreseen actions and processes to be introduced to fill the gaps?
- How to find and promote mechanisms of opportunity to develop the economic, environmental and social advantages of the greater connection between locally based production and informed consumption, in favour of vulnerable people?
- To what extent proximity markets and solidary economy platforms in agro-food matters, can be instruments to enhance food security of vulnerable groups?
- How can existing family and community ties (bonding capital) be linked / extended to the connection bridges of social capital, this is relationships with organizations and the relevant institutional fabric?
- What governance mechanisms should be developed to boost these two-way enhancement links of knowledge and actions around environmentally friendly food production, healthy consumption, and circularity?

3. **How to promote both agri-food literacy and the increasing of diversifying options for vulnerable people in favour of regular access to healthier food and the using of sustainable processes (with a greater component of local vegetables), from the perspective of the circular economy (reducing waste and better (re)using resources)?**
    - How to extend a diet oriented towards vegetarian or plant-based, organic and that favours local consumption?
    - What is the role of knowledge and education (formal learning, via schools, vs. informal learning) to guide toward practical resources for community learning on production, consumption, and waste mitigation.
    - How can be promoted an increased exposure of vulnerable people to the influence of actors who convey relevant information and knowledge on food security, waste mitigation and healthy eating? (e.g., resorting to schools, demonstration gardens, social support organizations?)
    - In what extent can schools in vulnerable communities be part of these relevant conditions for social innovation, where urban gardens / farms could work as educational environments?
    - How can women develop in context new motivations and opportunities to exercise a mediation power in the sustainability of the local food system?

4. **Methodological concerns to better understand the processes of change regarding food security, the sustainability of diets and food uses among vulnerable and marginalized people.**
    - In view of the great diversity of situations found in Research Cycle 1 related to both access to food and its sustainable use, how to overcome the difficulties intrinsic to the comparability of cases so that the investigation translates into public policy recommendations?
    - To what extent it may be advantageous to consider stratifying the sample?

- Could different categories of situations of vulnerability and exclusion constitute strata that allow finding points of comparison?
- Or could the points of comparison be based on categories of processes carried out by BUIs and different actors in the face of situations of vulnerability and exclusion?
- To what extent should in-depth / narrative interviews be adapted to different strata, also considering the convenience of privileging ethnographic methods?

5. **How should we take advantage of the knowledge developed and to be developed within the scope of RL6?**

RL6: Values Associated with Environmentally Sustainable Food Consumption

Findings from Research Activities

The Future Research Agenda presented in this report is based on the key findings from the first research cycle of RL6 (Values associated with Environmentally Sustainable Food Consumption as a function of age, gender and country/culture) in the ACCTING project. These findings are summarized below:

1. Values associated with food are an important factor in understanding behavioural change towards a more sustainable food consumption.
2. In support of previous findings, the values associated with sustainable diets that emerged more frequently in the narratives across different countries, age and gender groups, were *Social* (e.g., animal welfare, identity and environment), *Functional* (e.g., health, money, time and taste), and *Epistemic* (e.g., knowledge and childhood experiences) values; *Emotional* and *Religious* values appeared to play a less important role.
3. Certain food values enabled behavioural change and others acted as hinders, while some were perceived in both ways.
4. Better health associated with organic and locally produced food consumption emerged as a strong enabler and catalyst for consuming sustainable food.
5. Knowledge about climate change, the environment, sustainable food systems, animal welfare, food literacy and cooking emerged as another important driver of sustainable food choices.
6. Social values emerging in and expressed through social dynamics played an important enabling role, with particular themes focusing on the wish to support the local community by consuming locally produced food, identity, and feeling sense of belonging to communities and social groups with a common purpose.

7. Other values, such as better taste associated with organic food and positive emotions connected to producing and consuming sustainable food, appeared less frequently but still were relevant enablers of change.
8. The most important hindrance for behavioural change towards sustainable and healthy food choices was the higher price associated with organic food.
9. Greater time needed to access and prepare sustainable food was perceived, particularly by mothers, as a challenge that could act as a barrier for consuming a healthy and sustainable diet.

Limitations of Research & Identification of Gaps

The Future Research Agenda takes into account the limitations and existing gaps in knowledge as identified from the literature, the research conducted in Cycle 1, and the discussions with experts, activists, and other relevant social actors during the project meetings and workshops. This list does not pretend to be exhaustive of all existing gaps in scientific knowledge. Future research suggestions intend to fill-in some of these gaps and address some of the limitations of Cycle 1.

Limitations:
1. ACCTING aimed at empowering participants by showcasing their stories and experiences. Therefore, the research findings summarised above reflect their subjective lived experiences which may not apply to other contexts and participants. The narrative/interview methodological approach has also limitations related to social desirability biases, and questions being interpreted or understood differently by different participants.
2. The participants included in Cycle 1 may not be fully representative and inclusive of the most vulnerable and socially marginalised groups, given the challenges of reaching out to these people, and the relative low relevance of the project's aims to their daily struggles, particularly in the current context of an economic and energy crisis.
3. The findings of RL6 Cycle 1 were the result of cases from five different countries (Belgium, Germany, Greece, Romania and Turkey), which provided a diverse set of experiences and values. However, given the need to merge these data because of limited sample size and to obtain common themes and conclusions, the potential role of the culture-specific context could not be investigated in depth.
4. The narrative method employed in Cycle 1 investigated explicit food values that participants were aware of. However, dual-system models of behaviour propose that both explicit/deliberate and implicit/automatic thinking contribute to consumer's decision-making, and the two might at times be inconsistent with each other. Thus, the findings from Cycle 1 reflect only part of the evaluation process regarding food choices.

Research Gaps:
1. While this research contributes new insights by its focus on vulnerable and marginalised individuals, our understanding of the complex interplay between

values and other internal and external factors in food choices by consumers in real settings (e.g., supermarket) remains rather limited.

2. There is a need to gain insights into the bi-directional influences between food production, the supply chain, and other key actors on the food provision side, and the consumer's food values and choices.

3. There remains very limited knowledge about the contexts and conditions in which the interplay of intersectional identities can facilitate change regarding food values and consumption.

4. In the ESF consumption literature there is a lack of studies that focus on disadvantaged and marginalized groups, who are likely to be most affected by the climate and energy crisis and who have many other worries and struggles in life.

Future Research Agenda

1. **How to leverage on food values when developing and implementing interventions/actions/initiatives to promote sustainable food consumption.**
   a. What type of values should be targeted in actions/initiatives to promote sustainable food consumption and produce a long-lasting behavioural change? And how to do it such that it comes with spill-over effects to a sustainable lifestyle?
   b. How should value-based actions/initiatives be tailored to the socio-cultural context of the country, and the socio-demographic characteristics of the consumer?
   c. Can certain explicit and implicit food values be activated and/or changed at the society and individual levels through interventions?
   d. What policies are most effective in supporting and promoting sustainable food values?

2. **Interplay between explicit and implicit values in influencing sustainable food choices.**
   a. What are the demographic and contextual factors that influence the relative strength and contribution of explicit and implicit values to explaining and predicting food choices?
   b. What is the predictive value of explicit and implicit values for different real-life food consumption behaviours?
   c. How do values, structures, and social dynamics interact in specific purchasing and consumption settings?

3. **Bi-directional influences between food production and supply chain and the consumer's food values and choices.**
   a. What is the influence of producers, distributors and suppliers in shaping sustainable food values in a given community and society?
   b. What is the influence of food-related marketing and social media campaigns in shaping food values, and in driving food choices?
   c. What forces drive changes in food values across time for a particular society, region or/and community?

4. **New methodological approaches to investigate the role of values in sustainable food choices.**

a. How best to utilise narratives and better stories to formulate new research questions with societal impact and to construct quantitative measures?
b. What is the most valid methodological approach to measure explicit and implicit values and their congruency?
c. What new methodological approaches can be developed and used to measure sustainable food behaviour, and behavioural change in real settings?
d. How can co-creation methods be developed, implemented, and promoted for developing research and its translation into societal outputs that include the participation of the most vulnerable and marginalized social groups, and those who have been more negatively impacted by climate change?

5 Biodiversity and ecosystems

RL2: Biodiversity and land use restrictions

Research line 2 (RL2) aims to investigate human behaviour related to biodiversity and protected (or valuable) nature areas. The involved researchers have covered the countries Bulgaria, Hungary, Portugal, Romania and Turkey. The findings in the first research cycle (RC1) are based on 50 narratives exploring the relationship of vulnerable persons with protected areas, unique places of nature, but also places where nature is modified by human activities and where the socio-economic use of nature is important for the daily lives of vulnerable persons.

We assumed in RC1 that modified nature or intensively used areas situated in the vicinity of important last refuges of nature can have a huge impact on last resorts and hotspots of biodiversity. We relate to relatively biodiversity rich or ecologically unique areas that are (relatively) richer in species, and maybe targets for nature conservation. Exemplary, conservation efforts address the habitat loss, overharvesting or the conversion of land covers such as forests or wetlands to agricultural, (non-nature based) economic- and urban use. The research in RL2 takes an intersectional approach that considers a wide range of vulnerable groups across the urban-rural divide, paying close attention to rural situations.

The following considerations on the complexity of the topic were used as guidance for addressing the topic and conducting the practical work in RL2:

- Surrounding
- Outside
- Living place
- Nature

- Environment
- Ecology
- Plants, animals and land
- Wilderness
- Personal usage

- Personal value of nature
- Keeping nature intact
- Acting to protect
- Balancing interests of use and protecting
- Keeping nature for the future generations

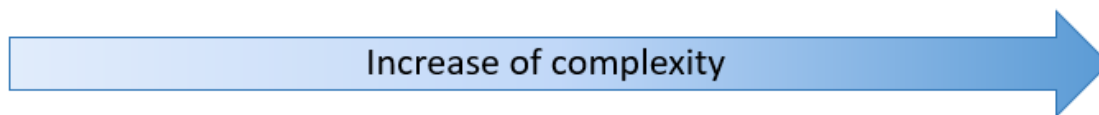**Increase of complexity**

Figure - Considerations related to complexity of topics addressed in RL2, prepared by the involved ACCTING partners.

Findings from Research Activities

1. Findings related to nature and awareness include acknowledging the increasing importance of nature protection and conservation. The special emphasis on habitat protection is often closely linked with geographical vicinity to pieces of nature that are considered valuable. Generally, awareness for nature as a "public good" was highlighted in our research, also a comparative perspective with other people¬¥s behaviours (and also referring what one has experienced in neighbouring countries) was observed. This relates to urban settings but also rural situations where agriculture is both a relevant income source and relates to social life in many ways.

2. The relation between nature and policies is an important discussion, and it refers to all spatial levels such as local municipality, regional, national or supranational level. The role of strategy and relevant actors such as the policy-makers and administrations were highlighted. Both the position of activism, adequate and inadequate perceptions of policies and authorities are brought up as important topics. The response, e.g., legal actions against actors with detrimental environmental practice are highlighted. Policy changes and the role of present communities are important.

3. Unsurprisingly economic conflicts arise with the socio-economic "use of nature". The environmental harm of smaller or larger companies directly impacts the living conditions of communities. Pollution and resource exploitation are related to short-term profit gains vis-a-vis long-term environmental values. The local impact on small communities has been captured through our cases.

4. Related to the previous topic, findings focusing on the role of the society within/for nature include how far societal values shape the interaction with nature. Geographically, the closeness to a protected piece of nature in urban and rural settings, as well as the rules and boundaries are important factors for individual

behaviour. Findings also relate to intergenerational transfer of value systems and cultural traditions. Beside the cultural traditions, religious beliefs, societal norms and community appreciation are also shaping observable practices to educate people about the interaction with nature.

5. Findings of our narratives refer to personal well-being and its relation to nature. The individual emotional relation to nature is considered by some of the interviewees more important than the economic benefits. A re-occurring topic is the healing effect of nature and the possible reconnection with a simpler lifestyle. According to our respondents, respecting nature impacts emotions and relates according to our respondents to an environmentally conscious behaviour. At the same time the enjoyment of nature is also discussed, also considering the preservation of its autonomy, following its own logic of existence.

Conclusions from Research Cycle 1:

The five findings do relate to theoretical concepts that were not further taken on in RC1 as the explorative type of research did not employ theory-based approaches but rather followed a case-by-case exploration of present narratives. The above findings summarize the narratives and keywords, and they also include the results from coding and semantic analysis. We do not consider the entire findings relevant for the work in RC2 and specific core matters can be further included in RC2. For instance, this could cover the following:

a) Which knowledge processes exist and relate to interaction of persons and nature.

b) How far society appreciation and beliefs influence individual behaviours.

c) How far values impact the use of nature within the boundaries of vulnerable conditions.

Transformative change and impact on biodiversity, habitats etc. was not a core focus in RC1 but can be an important challenge, to be addressed in RC2.

Limitation of Research & Identification of Gaps

Limitations

1. The research team in RC1 has conducted interviews and collected 50 narratives based upon their key findings. The selection method of interview partners and the sample size puts a limit on the representativeness of the collected opinions. The methodological limits are similar for the other research lines.

2. The involved researchers had different knowledge level and experience with conducting the interviews and preparing the narratives. This diversity in the narratives relates also to the different perceptions of the involved researchers. The selection of the narratives out of the often lengthy interview material also depended on the focus and preferences of the involved researchers. Based on the above assumptions we consider that the methodology and the practical implementation might influence the results. Notwithstanding, the explorative RC1 results open up new research directions for RC2.

3. The access to vulnerable people to interview partners was partly limited, and the researchers did not exactly know whether our interview partners fully fell into one or more of the pre-defined categories of vulnerabilities. This also relates to the geographical coverage in our RL. We have covered five countries, and within the countries different places were covered, and therefore not all narratives relate to a very specific place that could be easily identified or that would be the most representative case for the multiple topics in the focus of RL2.

Research Gaps

1. The general topic of our research and the explorative (rather than explanatory) type of work in RC1 does not directly relate to a specific theoretical concept, nor does it confirm or reject commonly accepted theories. It collects case studies but does not necessarily reflect on previous research.

2. We have not explored reasons why some interviewees did not feel competent enough to talk about the topic even at levels of low complexity. The non-presence of a concept of nature is a phenomenon that was observed in case of several interviewees, but we have not put any further emphasis in RC1 to explore this in detail.

3. In RC1 the "most often discussed issues" were identified by coding and formed the basis for a semantic analysis of narratives. Due to limited time the researchers have not further linked the expressed issues to theoretical concepts which would allow a clustering and further analysis of the content.

4. In RC1 we choose to cover vulnerable members of the society that relate to specific places. We understood that the perception and actual interaction with nature refers to different activities, especially when we consider recreational activities, the enjoyment of nature or the socio-economic activities. The relations and intersections of different use scenarios and interaction with nature remain unexplored. This is especially a gap when considering the different use scenarios in rural and urban surroundings. As a methodological weakness, the specific cases (the special places) where we have met with our interviewees have not been thoroughly analysed and therefore the context of local developments is only a complementary component in our narratives. We expect that further research findings are possible if a stronger case-based and actor-centred research would be facilitated in a next research cycle. This implies that cases need to be selected carefully (still, comparability or representativeness from a geographical viewpoint is not an explicit aim)

5. The multidimensionality was explored in narrative interviews but often left out topics that were not directly addressed. This relates to the governance of nature, the role of activism, the specific importance of collective action both in past and current activities. While stewardship was mentioned, the complex issues of what motivates and enables persons to become active remains a research gap.

6. Partially the need for a substantial change (or a transformation of society to sustainable behaviour) was brought up as a topic by respondents in interviews and

narratives. As a research gap, the preconditions i.e., knowledge, value system provisions etc. for a true societal (collective or individual) transformation were not further explored in RC1. Some of our respondents outline the necessity that our society needs to change dramatically. This pro-change personal opinion is also reflected in the own behaviour of most of our respondents. In RC1 we did not discuss the discrepancies between own opinions about responsible use or sensitive interaction with nature that were in contradiction to a partly adverse personal behaviour. In other words, we have covered in some cases motives and drivers for a potential change formulated as a fictional perspective rather than "lived" activities of our respondents.

Future Research Agenda

Future Research 1: Awareness on nature

1. Environmental awareness and consciousness on nature, and its relationship to responsibility for nature are important topics that can be further explored.
   - The narratives in RC1 emphasize the importance of nature protection and conservation. Proximity to -recognizable- protected areas influences people's views on preserving biodiversity. Younger generations are seen as less interested in nature, highlighting the need for education and training to raise awareness and change behaviour; however, this is not an evidence-based fact but rather an assumption that could be subject of future research. More broadly, future research can focus on knowledge, awareness, and factors that contribute to understanding and appreciating the value of nature, particularly among vulnerable groups. Proximity, personal experiences and events that trigger the interest of people to become active are important factors that can be included in research plans.
   - The practical activities and behavioural expression of responsibility could relate to current theoretical concepts of knowledge production and its use in the focus of RL2.
   - Emphasis could be put on research to find out motivational aspects of awareness, i.e., factors enabling or hindering awareness processes within vulnerable communities
   - Actors' perspective: the role of "official" initiatives of authorities or widely respected actors must be further explored to understand how much actors and ongoing processes - respectively movements - interrelate with awareness; this also relates to gendered perspectives of use of nature, perception of preservation measures and its uptake, and last but not least the masculinity of preservation and protection.
2. With a reference to the above actors' perspective (including administrations), the policies and their impact on awareness is an important research question.
   - Governance aspects and policy implementation are often in the hands of public authorities. Their outputs and effectiveness of multi-actor engagement for caretaking for nature with an inclusiveness focus on vulnerable groups" can guide an interesting aspect of research. Beyond

that, in RC1 the RL2 has observed the interplay of activism and legal action that also creates adverse effects for vulnerable groups, this has been explored only partially. In RC2 the governance actors and the policy delivery aspects should be explored closer, framed around the given functions of organisations and their overall role for discourse setting. In RC1 interviewees express frustration with missing or mismanaged policies and uncaring authorities, while others engage and become supporters of environmentally friendly practice. This also links to educational aspects (and communication practice) of authorities and the different perception in how far activism contributes to awareness, but also how much communication with vulnerable groups takes place is an important point.

o The role of community-led initiatives and the aspects of outreach to vulnerable communities are significant research topics that can be further explored, this extends the viewpoint proposed for the role of administration and their policy delivery. Community-led initiatives (but especially social media) are discussed as avenues for achieving change. Future research can explore existing strategies and practices of communicating their policies and delivery in view of inclusion of vulnerable groups.

Future Research 2: Knowledge for care-taking action

1. The RC1 informed about the importance of knowledge as an empowering component for active caretaking for nature beyond awareness and motivational aspects.

   o Research exploring different types of knowledge for sustainability refers to different concepts of knowledge. A valid research question would be to understand what types of knowledge are currently available within rural communities, how knowledge was preserved or has to be altered over time. Caretaking for nature refers to active use of knowledge. We consider knowledge as a dynamic enabler for responsible action and its efficient use might be confronted with barriers. Taking on the above, a valid research question would be to understand the knowledge dynamics based on exemplary cases (and including vulnerable groups as a first focus, and administrations as a second focus.

   o Cultural ecology, i.e., how cultures interact with and adapt to natural environment is a concept that can be applied to different case studies and can be -exemplary- related to knowledge dynamics. The effects of how the importance of knowledge (or separate types of knowledge) changes over time can e.g., relate to the neoliberal valuation (i.e., a primarily economic use perspective) of nature while negating other modes of (maybe more sustainable) ways of living with nature, but also other aspects can be covered. The cultural change and knowledge relate to behaviour change and has also a gendered component, which can be important for future research. This could be the co-evolution of gendered knowledge use and differences of knowledge uptake, social norms, role models and many other aspects.

Future Research 3: Societal values and societal norms and how they refer to caretaking for nature

1. Findings in RC1 relate to the importance of value systems and how far they refer (potentially positive) to the role of nature in our lives but also how behaviour is determined by personal values. Value systems (no matter if in the urban and rural context) also refer to the sustainability discourse. Values might depend on local context, family and community values, education, dominant cultural values; they are determining individual behaviour or the behaviour of groups, respectively social norms.
   - Community-based stewardship and co-responsibility of different groups are important factors for protecting nature. Traditional practices and values play a role in promoting environmentally conscious behaviour. Passing on these values among groups e.g., to the younger generations is a crucial process. Distrust and lack of understanding between social groups and government actors can hinder cooperation and have important impacts on values (but also social norms). Future research can consider the interlinkage between individual behaviour, social norms, communication, outreach, intergenerational transfer of knowledge, and the importance of/for awareness on nature.
   - Research directions in RC2 can address the change of values over time; the influence of value systems on caretaking for nature in practice.
   - Transformative change relates also to the value system as one of its main components; research on understanding how value systems impact on change of individual practice in view of a wider transformative change and its significance is an important research question.

Additional research topics of importance beyond the three core research directions are summarized as follows:

Nature and Economy: Conflicts arise between short-term economic interests (including neoliberal valuation processes) and long-term environmental values. Companies and economic stakeholders are criticized for exploiting natural resources and e.g., causing pollution. Balancing resource use with preservation and conservation is an important discourse, which goes beyond the core topics of RL2. In line with this, also the impact of industrialization and consumerism on smaller communities must be highlighted. Future research can examine the economic pressure related to green deal topics and refine topics such as agriculture, forest economy, tourism, and natural resource exploitation. However, in this document we can only consider exemplary directions for this additional research topic as the core focus deviates from the main ACCTING research lines. We add this point as it is a main determinant for a wide range of developments and societal processes but also for transformative change of the society as the ultimate goal of the Green Deal.

Nature and the Future: There is concern about the future and its negative consequences due to climate change and interlinked environmental degradation. However, there is at the same time optimism about the potential for positive change and the role of individuals, communities and policymakers in shaping a sustainable future. Future research can explore people's hopes, prospects and engagement for environmental protection, focusing on nature and biodiversity. We consider this time related -and prospective- perspective as an important and determining discourse as it lays the foundations for triggering change. However, we integrate the time perspective in all of the above research guiding questions.

6 Research Line Synergies

The embracement of synergies amplifies the capacity to generate innovative solutions, enabling research to transcend traditional boundaries and foster a holistic approach towards problem-solving. Synergistic research collaborations, whether inter-disciplinary, intra-disciplinary, or trans-disciplinary, spur intellectual diversity and convergence, enriching the research environment and output by intertwining disparate knowledge domains and expertise. This interplay not only propels the acceleration of knowledge generation but also enhances its applicability, by ensuring that research outcomes are robust, comprehensive, and adaptive to the multifarious challenges inherent in real-world scenarios. Considering the aforementioned future research agenda, we have defined 4 main horizontal axons, where synergetic approaches between different RLs will serve as a catalyst, propelling research endeavours towards achieving amplified impact, robust solutions, and fostering a culture of collaborative innovation that is quintessential for navigating the complex challenges of the contemporary Green Deal research landscape.

Cross-Cultural Initiatives for Sustainable Communities: Knowledge Exchange and Training

The role of knowledge, both in the context of sustainability and community preparedness, emerges as a pivotal point of synergetic exploration in aligning community practices with scientific and ecological principles. This encompasses an examination of the types of knowledge available within communities, particularly rural ones, and scrutinizing how knowledge has been preserved or modified over time. Ensuring the active use of knowledge, perceiving it as a dynamic enabler for responsible action, might necessitate addressing potential barriers to its efficient use. Therefore, understanding the dynamics of knowledge between different RLs synergistically, particularly within vulnerable groups and administrative bodies, through research becomes pertinent. Additionally, the fostering of agri-food literacy and diversifying options for vulnerable populations, notably through sustainable processes and a circular economy perspective, stands out as a crucial area of common exploration to ensure regular access to nutritious food while adhering to sustainable practices.

A focus on multifaceted education and practical community engagement provides a rich canvas for future research, particularly in the realms of sustainability and community development. For instance, investigations into formal and informal synergies among microenterprises and communities, especially those owned by vulnerable individuals, offer a lens through which collaborative efforts towards environmental sustainability actions can be viewed and evaluated. Additionally, the role of varied educational approaches, encompassing both formal and informal learning, needs to be explored to navigate community learning concerning production, consumption, and waste mitigation. This, coupled with research into establishing connections with existing bottom-up initiatives – such as those addressing transport poverty – will aid in crafting a framework that contributes knowledge for the development of socially just and sustainable systems across various community sectors. Ultimately, combining theoretical concepts, practical activities, and transformative learning among all age groups would holistically enhance community development and sustainability efforts.

The dynamic exchange of knowledge, practices, and cultural insights among diverse communities is critical for fostering sustainability and resilience, as it allows for the co-creation of innovative solutions based on a broad range of experiences, ultimately strengthening our collective ability to navigate and adapt to complex challenges. We recognize that different cultures possess unique wisdom and approaches to addressing disasters, energy challenges, sustainable food practices, and values associated with environmentally responsible consumption. By promoting cross-cultural learning and collaboration, another aspect that worth to explore is the means of local knowledge exchange mechanisms related to climate-based disasters (RL1), energy communities (RL3), sustainable food production (RL5), and environmentally sustainable food consumption practices (RL6) among culturally diverse communities. The main intention is to explore how different cultural perspectives impact disaster preparedness, energy initiatives, and food security.

Given that personal values associated with environmentally responsible behaviour can serve as a bridge for cross-cultural understanding and collaboration in disaster preparedness, energy initiatives, and sustainable food production, it is essential to understand the role of community-led initiatives in facilitating cross-cultural knowledge exchange. Exploring how these initiatives can bridge cultural divides, promote social cohesion, and empower vulnerable communities to collectively address sustainability challenges could make a significant contribution to the discussion on planning policies for sustainable communities.

Therefore, we suggest studying such initiatives in order to understand how they function as bridges across diverse cultural backgrounds, facilitating a rich interchange of ideas, practices, and cultural insights. Examining the mechanisms through which these initiatives promote social cohesion within and between culturally distinct groups is essential. Furthermore, research may seek to explore the ways in which these initiatives empower vulnerable communities to collaboratively tackle sustainability challenges. This agenda underlines the importance of exploiting the collective wisdom of diverse cultures to develop innovative and inclusive solutions for complex issues like disaster management, energy challenges, sustainable food practices, and responsible food consumption, all while promoting a sense of unity among community members.

A crucial aspect of this research agenda is the identification of best practices and success factors within these initiatives by investigating how different cultures have historically developed strategies for disaster resilience and sustainable food practices and analysing the cultural values and traditions that underpin these strategies to explore their transferability to other communities facing similar challenges. By analysing the effectiveness of different approaches, researchers can offer valuable insights into how such initiatives can be optimized to enhance knowledge exchange, cultural understanding, and community resilience. Additionally, this research should explore the potential scalability and transferability of successful models to other communities, promoting wider cross-cultural engagement and strengthening the overall impact of these initiatives on sustainability and resilience across various domains.

Connecting Governance, Policy Implementation, and Activism for Sustainable and Inclusive Communities

Governance aspects and policy implementation, predominantly orchestrated by public authorities, bear considerable weight in the effective multi-actor engagement for nature caretaking, especially when the spotlight is on vulnerable groups. The observation of the interplay between activism and legal action in RC1, and the subsequent impact on vulnerable groups, forms a tapestry that has only been partially unravelled, especially from a synergetic perspective, suggesting that RC2 should provide a meticulous examination of governance actors and policy delivery, mutually by the relating RLs, encompassing organisational functions and overarching discourse setting. Deriving insights from experiences, such as those expressed in RC1 interviews regarding policy mismanagement and varying levels of authority engagement, lays a foundational step towards synergistically exploring the entwined relationship between educational aspects, communication practices of authorities, and the perceptual variances in how activism contributes to awareness and communication within vulnerable groups.

The intricate interactions between governance, policy implementation, and activism, particularly within the domains of biodiversity (RL2), energy communities (RL3), and food security (RL5), is the focal point of attention in this research agenda. The aim is to investigate the dynamics of these relationships, focusing specifically on situations where policy decisions disproportionately affect vulnerable communities. The efficacy of policy changes instigated by activist movements and their implications for biodiversity preservation, equitable access to clean energy, and the establishment of sustainable food systems is considered pivotal for investigation.

The geographical and cultural diversity across European nations, despite the limitation of research scope to a handful of cases, implicates that future investigations must illuminate the variances in institutional context and social culture in order to construct policy recommendations that are profoundly meaningful. The central focus is on the cross-cultural dimensions of policy implementation across various research lines, including community-based disaster management (RL1), energy efficiency in micro/small SMEs (RL4), environmentally sustainable food consumption (RL6), and sustainable travel (RL7). The objective is to investigate the impact of various cultural contexts on the acceptance of policies and evaluate the effectiveness of culturally tailored policies.

Queries regarding the extent to which public and private stakeholders bear responsibility, their sensitivity, and their ability to enact policies and interventions that envelop vulnerable communities with a gender-sensitive approach, must permeate future research to fortify land security, environmental preservation and transport policies. By assessment of how gender-inclusive policies influence the participation of vulnerable communities in energy cooperatives, sustainable food production, and accessible transportation options, the pivotal role of gender-sensitive approaches will be unveiled to foster equitable and sustainable outcomes across all research lines.

The intersection of sustainable mobility post-lockdown (RL8), energy efficiency in micro/small SMEs (RL4), environmentally sustainable food consumption (RL6), and circular economy principles, creates an opportunity for exploration of the potential synergies that can be harnessed to promote sustainability and reduce environmental impact. A potential research agenda delves into how circularity can be seamlessly integrated into sustainable transportation models and urban planning to minimize waste, energy consumption, and ecological footprint. The economic benefits of circular practices within the context of sustainable mobility, particularly for socially vulnerable areas grappling with transport poverty, are to be examined in-depth. Furthermore, the role of policy advocacy in driving circular economy initiatives within sustainable development frameworks and the feasibility of circular solutions in areas characterized by social vulnerability are open research questions.

Fostering Vulnerable Groups through Inclusivity and Transformation

Community-led initiatives and outreach components directed toward vulnerable communities play a pivotal role in creating transformative change, especially within the paradigm of Green Deal policy delivery. The exploration of existing strategies and practices in communicating policies, particularly those that harbour an inclusive perspective for disadvantaged groups, warrants further common investigative pursuit.

Moreover, the incorporation of urban agriculture into inclusive spatial planning emerges as a sustainable economic solution for vulnerable communities and neighbourhoods, potentially addressing food security and sustainability of diets amongst vulnerable groups. The research should extend its scope to explore the holistic impacts of urban agriculture on the complex network of interdependencies within urban communities. As an essential component of urban spatial planning, urban agriculture interfaces with diverse sectors such as energy communities, energy poverty, and community energy schemes (RL3), which are encapsulated within distinct research lines. Therefore, research initiatives should emphasize the connections of urban agriculture with these sectors, examining how its integration can enhance efforts to improve food security and healthy diets while reducing transport poverty and fostering sustainable mobility. Methodological considerations, thus, should underpin research efforts to comprehensively decipher processes of change concerning food uses and security amongst the susceptible. Additionally, research should actively engage vulnerable communities in the co-design of food transportation models that cater to their unique needs and preferences. By

empowering local residents to play an active role in the development and management of these models, a sense of ownership and sustainability can be fostered.

Further research is required to conduct an in-depth analysis of the integrated sustainability of urban communities, with particular emphasis on the complex relationships among urban agriculture, energy communities, and sustainable mobility. It is essential to investigate the potential synergistic impacts of these aspects in order to foster the development of urban environments that are more resilient and sustainable, particularly for vulnerable groups. This entails exploring the ways in which locally sourced food production may reduce the environmental impact associated with transportation (RL7 and RL8), as well as the role of urban agriculture in supporting community-based energy initiatives (RL3).

Embracing an energy, social, and environmental justice framework propels a research design that underscores actions and schemas essential for amplifying equity and inclusion towards vulnerable groups, thereby facilitating an equitable Energy Transition. Here, the establishment of synergies between all RLs with RL4, which delves into the micro-enterprises owned and operated by vulnerable individuals, becomes paramount. By taking into account intersecting factors such as gender, ethnicity, and socio-economic status, the research will illuminate the distinctive challenges and opportunities that these individuals encounter in initiating and sustaining their businesses. Simultaneously, strategies for their support and empowerment can be identified and applied, while shedding light on how mobility needs are constructed, experienced, and altered by families in vulnerable and isolated areas, thereby addressing and building upon identified difficulties.

Impact of Value Systems on Environment and Sustainability Personal Values

The empirical findings from RC1 illuminate the multifaceted role and implications of value systems within both urban and rural contexts, particularly highlighting their pivotal impact on individual and group behaviour toward nature and sustainability. These value systems, while ostensibly referring to the beneficial role of nature in our lives, also critically determine behaviour through the lens of personal, familial, and community values, with such values being significantly shaped by a multitude of factors including local context, education, and predominant cultural norms. Furthermore, these systems of values are inextricably intertwined with the sustainability discourse, dictating not only individual and collective behaviours but also concomitantly influencing social norms within a given community or societal structure. Community-based stewardship, encompassing the co-responsibility of disparate groups and the intergenerational transmission of traditional practices and values, emerges as a vital element in buttressing environmentally conscious behaviour, albeit it's noteworthy that barriers such as distrust and lack of understanding between various social groups and governmental entities can potentially thwart cooperative efforts and substantially impact values and social norms.

Diving into the future research, mutual exploration of the evolution of values over time, and more significantly, their influence on practical caretaking for nature, becomes imperative. The nuanced interplay between explicit and implicit values and their respective

impacts on ecologically valid and sustainable choices, i.e., sustainable food choices, transportation choices, etc., warrant a detailed exploration, delving into the demographic and contextual factors that influence their relative strength and contribution to explaining and predicting observed behaviours. Moreover, transformative change is underscored as deeply interwoven with the value system, whereby understanding how value systems bear upon the alteration of individual practices, particularly in the context of a broader transformative change, emerges as a paramount research query. Additionally, exploring the nexus between pro-social and pro-environmental attitudes, especially as it relates to fostering environmentally sustainable and socially inclusive practices, necessitates thorough research. In this vein, it is imperative to scrutinize how nurturing such attitudes can pave the way for the inception of enterprises that judiciously prioritize environmental sustainability concurrently with social inclusion, while also meticulously examining the potential boons and challenges entwined with such entrepreneurial endeavours.

Future research should explore the interconnection between pro-social and pro-environmental attitudes and their capacity to foster ecologically sustainable and socially inclusive behaviours. This research can focus on domains such as sustainable food production, transportation, and energy initiatives, aligning with RL3, RL5, RL7, and RL6. It is crucial to understand how these attitudes influence individual and collective behaviours within diverse communities, including vulnerable groups, and how they can be nurtured to promote sustainability and inclusivity. Exploring cultural and demographic variations in these attitudes and their long-term impacts on sustainability is crucial for tailoring policies and interventions effectively. This research agenda holds promise for informing strategies that facilitate sustainable and socially inclusive practices across various research lines.

7 Conclusions

In 2020, the European Green Deal was endorsed as a comprehensive suite of policy initiatives presented by the European Commission, with a paramount objective to steer the European Union (EU) towards climate neutrality by 2050. The blueprint involves a meticulous assessment of existing laws based on their environmental impact, coupled with the introduction of novel regulations encompassing areas such as circular economy, architectural rejuvenation, biodiversity, agriculture, and innovation.

The central ambition of the European Green Deal revolves around attaining climate neutrality by 2050. In the pursuit of this objective, a pivotal facet is the decarbonization of the energy system, underscored by the ambitious aspiration of achieving "net-zero greenhouse gas emissions by 2050" to propel the EU towards its climate neutrality target.

The ACCTING project has marked significant advancements in the realm of clean energy through its dedicated research efforts in the domains of Energy Poverty (RL3) and the integration of environmental measures in Micro-/Small and Medium-sized Enterprises (RL4).

Research Line 3 (RL3) is dedicated to delving into the critical issue of energy poverty, focusing on the evolution of energy communities across four carefully selected case

studies spanning Austria, Denmark, Italy, and Norway. These case studies have been meticulously chosen to align with the research's core objectives and mission.

RL3 is driven by a quest to unravel the pivotal role of local and regional authorities in not only establishing but also expanding energy communities. These communities serve as conduits for active participation among vulnerable groups, simultaneously functioning as catalysts to alleviate energy poverty. Upon conducting in-depth narrative interviews, the project team has successfully identified key obstacles that impede community energy projects within the case study contexts. Among these challenges, ensuring transparency and clarity within projects emerges as a paramount concern. Vital to enabling active participation is the dissemination of comprehensive project information to residents, coupled with their engagement in energy-related decision-making processes. In this regard, energy education emerges as a potential solution to facilitate the transition towards a sustainable energy attitude that addresses both supply and demand aspects. An important revelation gleaned from the research is the significant impact of cultural and geographical context on policy attitudes and support for community energy projects.

The diversity in perspectives across different countries underscores the need for broadening the research scope to encompass a wider range of nations. Such an expansion promises valuable insights into policy and initiative disparities, contributing to a deeper understanding of challenges and failures that policymakers may encounter. Furthermore, the project underscores the significance of addressing the needs of vulnerable groups, encompassing women, low-income populations, racial minorities, and the elderly. A proactive approach that includes these segments is essential to fostering a more equitable community. To this end, the proposal advocates the creation of a framework that not only incentivizes but also empowers these marginalized groups, thereby fostering a more inclusive and sustainable society.

The report recommends that future research prioritize this approach, reflecting the commitment to promoting fairness and inclusivity. Conclusively, the research highlights the pivotal role of trust and a sense of community belonging in motivating residents to actively engage in energy decision-making processes. By fostering collaboration between community members and local authorities, the promotion of renewable energy sources and sustainable consumption practices is poised to establish a more eco-friendly and sustainable community.

On a parallel note, Research Line 4 (RL4) has directed its efforts towards the generation of knowledge on intensifying the adoption of energy-efficient and pro-environmental measures within micro and small enterprises. This research operates within the framework of the European Green Deal, with a specific focus on vulnerable entrepreneurs across Belgium, Greece, Italy, Norway, and Romania. Employing a narrative-driven methodology, the research has successfully garnered invaluable insights into the array of measures and innovative technologies embraced by micro and small entrepreneurs. These endeavours are aimed at enhancing the environmental sustainability of their businesses while considering the associated social dynamics, resource allocation, and structural conditions. Throughout this research, several limitations and gaps have been identified, spanning theoretical, methodological, and implementation dimensions. As a response to these gaps, the project outlines six overarching future research directions that aim to address the identified deficiencies at various levels of knowledge. To drive this

research agenda forward, the project emphasizes the need for concrete actions that involve and engage micro-entrepreneurs, particularly those who are most vulnerable. The objective is to enhance the environmental sustainability of their business operations. Proposed lines of action include enhancing the attractiveness of energy audits for micro-enterprises through strategies that simultaneously enhance audit quality and value while reducing costs. The endeavour to incentivize and support entrepreneurs from vulnerable groups in the pursuit of environmentally conscious business models is central. This can be achieved through a comprehensive approach involving awareness campaigns, capacity-building initiatives, and networking opportunities. Furthermore, the report underscores the importance of fostering connections among entrepreneurs who are already advocates for sustainability. Facilitating these connections provides a platform for the exchange of knowledge and expertise, ultimately contributing to a collective movement towards more environmentally responsible business practices. In essence, both RL3 and RL4 within the ACCTING project have significantly contributed to the pursuit of clean energy solutions and the promotion of sustainable practices, with a keen focus on community involvement, inclusivity, and innovation.

Another Green Deal policy area is targeting the process of building and renovation in regard to their currently unsustainable methods, where EU pays a lot of attention in emerging digital technologies, which have the potential to play a critical role in addressing environmental issues, like smart city mobility, precision agriculture, sustainable supply chains, environmental monitoring, and catastrophe prediction. ACCTING research made progress towards this action by investigating deeper the disaster management and mitigation exposure (RL1). The RL1 research findings highlight the necessity for disaster response strategies to transition towards a more localized and inclusive framework, effectively addressing disaster risks and bolstering community resilience. This underscores the imperative of forthcoming directives centred on the establishment of robust disaster-ready communities, necessitating a multifaceted approach that integrates diverse strategies. By concentrating efforts on enhancing capacity, establishing federated knowledge networks, re-evaluating response mechanisms, acknowledging existing strengths, reconstructing gender-inclusive community infrastructures, conducting simulated disaster scenarios, integrating local knowledge, and promoting collaborative problem-solving, the potential emerges to fortify communities' ability to withstand and adapt to adverse circumstances brought on by disasters. The crux of this approach lies in the prioritization of these strategies, coupled with the cultivation of collaborative synergy among researchers, practitioners, and community members. This collective effort paves the way for a future in which the impact of disasters is significantly diminished, and communities are better equipped to navigate challenges and adversities that may arise.

A focus area within the ambit of the European Green Deal pertains to curbing emissions resulting from transportation methods. A comprehensive approach termed "Sustainable and Smart Mobility" is currently in the process of implementation. This approach is aimed at increasing the adoption of sustainable and alternative fuels across road, maritime, and air transport, while simultaneously setting emission standards for combustion-engine vehicles. With regard to this domain, the ACCTING project has placed particular emphasis on addressing transport poverty (RL7) and analysing transport choices in the aftermath of barriers, whether physical or psychological, that arose in the wake of the COVID-19 lockdown. Transport policy stands as a pivotal instrument in rectifying the inequities

inherent in transport systems. A key objective is to diminish over-reliance on automobiles and address the manifestations of transport poverty evident in remote and rural areas. Central to this endeavour is ensuring the availability, accessibility, affordability, and safety of public transportation options. The narratives within RL7 shed light on the daily challenges intricately woven into transportation struggles – fluctuations in circumstances are evident, but more prominently, the toll borne by those grappling with transport poverty manifests in their expenditure of time, scarce resources, and flexibility. Notably, these individuals navigate not just the challenges of transportation itself, encompassing cars, public transport, walking, cycling, and more, but simultaneously grapple with constraints related to time, finances, and access. In light of this, the concept of sustainable transformation emerges as a means to alleviate these daily hardships encountered by vulnerable groups. This transformation presents an opportunity to introduce environmentally sustainable modes of transport, mitigating and lessening the burdens faced by these segments. The findings strongly advocate the significance of establishing accessible, affordable, trustworthy, and safe public transportation as pivotal drivers of change. This sentiment is echoed in the narratives, affirming that a shift from car dependency to public transport is a vital component in this transition. Furthermore, the availability of essential services, work opportunities, and childcare facilities even in remote residential locales plays a contributory role in reducing the necessity for excessive transportation. Fostering such offerings is anticipated to yield a multitude of positive impacts for individuals.

Conversely, a distinct facet of the ACCTING research is centred on transportation choices within the post-lockdown era. This facet has highlighted three overarching areas that warrant further exploration, both within and beyond the project's second cycle. These areas are intrinsically interwoven with intersectional considerations. The first arena pertains to obstacles and enablers relevant to the promotion of sustainable mobility behaviours. This encompasses policy measures and actions that necessitate design, or co-design, with inclusivity at the core. Research clearly underscores the importance of assessing these factors from the standpoint of diverse and often interjectionally vulnerable groups. The second realm revolves around evaluating mobility policies, encompassing accessibility to and exclusion from sustainable mobility solutions, including safety measures both in public transport and on roads. The outcomes of such assessments are notably influenced by inequalities and intersectional vulnerabilities, aspects that necessitate deeper analysis and incorporation into standard assessment procedures. Lastly, the third area delves into the attributes and role of activism in driving sustainable behaviour. This arena delves into whose voices are heard and who is afforded the opportunity to actively advocate for sustainable mobility. Furthermore, it seeks to unravel the reasons underlying collective action against sustainable mobility measures, particularly scrutinizing the groups spearheading these collective actions, placing emphasis on the role and activism of vulnerable groups.

The 'Farm to Fork' strategy is a central initiative within the European Green Deal, with a dual focus on ensuring food sustainability and providing support to producers, including farmers and fishers. The European Union (E.U.) advocates for a climate-friendly approach in the production and distribution of these resources, aiming to enhance both efficiency and environmental considerations. Notably, the strategy strives to uphold the quality and affordability of goods even as it adopts new processes. It sets specific targets such as

reducing the usage of chemical pesticides, enhancing the availability of healthy food choices, and assisting consumers in comprehending health ratings and sustainable packaging.

The ACCTING project aligns with this Green Deal strategy by making notable contributions to the discourse on food security (RL5) and the values tied to environmentally sustainable food (RL6). RL5 specifically seeks to comprehend the extent to which diverse groups, varying in levels of vulnerability and considering a gender+ intersectional perspective, can access nutritious, affordable, and sustainable food while simultaneously reducing food waste. The strategy encompasses the 'Farm to Fork' approach and aims to understand how distinct consumption practices, whether involving personal production or not, alongside the utilisation of resources, structural conditions, and social dynamics, either facilitate or obstruct transformative and inclusive sustainable changes within local food systems. This exploration spans across five countries: Austria, Greece, Portugal, Sweden, and Turkey. Through a meticulous methodological approach employing narratives and enhanced storytelling, the project has garnered valuable insights into the impact of social dynamics (embedded within the context of vulnerability and exclusion), resource availability, and structural conditions at various levels. These insights extend to influencing the behaviours and practices of vulnerable individuals. Additionally, glimpses of prospects for shifting towards more sustainable individual and familial food practices have emerged. However, the research also acknowledges certain limitations and significant gaps that persist across theoretical, methodological, and implementation aspects. These gaps underscore the necessity for a continuous research agenda focused on sustainable and inclusive healthy food access and utilisation. Such an agenda calls for a multi-participant process, fostering informed local production and consumption, fostering healthy dietary choices, and embracing circularity.

As for RL6, it delves into the realm of understanding the explicit values associated with making sustainable or non-sustainable food choices. This investigation includes a scrutiny of how these values, in conjunction with factors such as resources, structural conditions, and social dynamics (as either enablers or barriers), influence the consumption patterns of vulnerable populations. Through the adept utilisation of narratives and enriched stories, the project has gained valuable insights into the role that values play in tandem with social dynamics, resources, and structural conditions, shaping behavioural shifts towards more sustainable food choices among vulnerable groups.

First, understanding the dynamics of environmental awareness and consciousness among vulnerable groups is a critical area for explorative research. Research can explore the factors of knowledge production and utilisation, include motivational aspects that influence environmental awareness within vulnerable groups. An interesting dimension would be to address the role of "official" initiatives and respected actors in impacting awareness, and the gendered perspectives.

Second, knowledge is a pre-condition for effective nature caretaking. A comprehensive study of the types of knowledge available to communities, the factors influencing its change over time, and the challenges for applying knowledge to take responsible environmental action should be in focus of our research. The concept of cultural ecology can be an approach through which research can prove assumptions about the

significance of knowledge, but also neoliberal valuations of nature and transformative change as a shift of societal paradigms might be used as overarching frameworks.

As a third point, personal values and societal norms shape behaviours and perceptions of sustainable action in nature. Understanding the connections between individual behaviour, social norms, intergenerational knowledge transfer, and individual sustainability concepts is an important research direction. Values also tend to have a certain dynamic over time and have effects on practical caretaking for nature. Understanding transformative change and the role of value systems can shape our comprehension of environmental stewardship.

Additionally, two overarching research themes might be of importance. The balance between short-term economic interests and long-term environmental values, as well as the actions of companies in resource exploitation constitute a more horizontal perspective of our research, which is also related to activism. Second, research can explore individual and community engagement and the role of policymakers in shaping a sustainable future. These research areas might potentially contribute to understanding the complex interplay between humans and the environment from a wider perspective.