AdvanCing behavioural Change Through an INclusive Green deal

Report on inspiring practice cases

Norwegian University of Science and Technology (NTNU)

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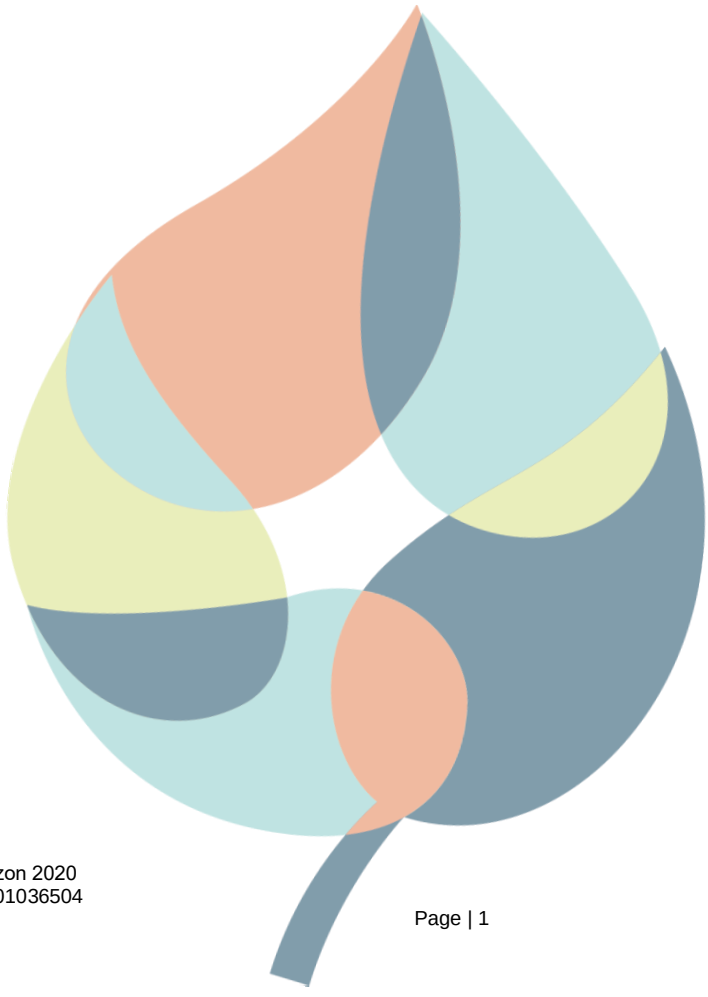

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Disclaimer

Table of Contents

Report on inspiring practice cases 1
Table of Contents 4
List of Figures 7
List of Tables 8
List of Acronyms 8
The ACCTING project 10
Project Consortium 11
Summary 12
Introduction 14
1. ACCTING: Concepts & Methods 14
1.1. Key conceptual components 14
1.2. Research design 16
1.3. Research lines 16
2. Mapping Bottom-Up Initiatives 17
2.1. The mapping activity 18
2.2. Toolkit 18
2.3. Framework of vulnerabilities 18
2.4. Framework of involved actors 19
2.5. Framework of proximity 20
2.6. Framework of justice 20
2.7. Data collection 21
2.8. Data analysis 21
2.9. Limitations 21
3. Mapping Analysis: General Findings 22
3.1. Research Line 1: Valorising local knowledge of natural hazards 22
3.1.1. Mapping analysis of the BUIs 22
3.1.2. Degree of involvement of actors 22
3.1.3. Initiatives' effects on vulnerabilities 25
3.1.4. Implementation dynamics 26
3.1.5. Justice 28
3.1.6. Drivers and barriers of BUIs 29
3.1.7. Selected inspiring cases 31

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101036504

3.2. Research Line 2: Biodiversity and land use restrictions 33
3.2.1. Mapping analysis of the BUIs 33
3.2.2. Degree of involvement of actors 33
3.2.3. Initiatives' effects on vulnerabilities 36
3.2.4. Implementation dynamics 37
3.2.5. Justice 39
3.2.6. Drivers and barriers of BUIs 41
3.2.7. Selected inspiring cases 41
3.3. Research Line 3: Energy communities and energy poverty 44
3.3.1. Mapping analysis of the BUIs 44
3.3.2. Degree of involvement of actors 44
3.3.3. Initiatives' effects on vulnerabilities 47
3.3.4. Implementation dynamics 48
3.3.5. Justice 50
3.3.6. Drivers and barriers of BUIs 50
3.3.7. Selected inspiring cases 52
3.4. Research Line 4: Energy-efficiency measures and pro-environmental behaviours in small/micro enterprises 55
3.4.1. Mapping analysis of the BUIs 55
3.4.2. Degree of involvement of actors 56
3.4.3. Initiatives' effects on vulnerabilities 58
3.4.4. Implementation dynamics 59
3.4.5. Justice 61
3.4.6. Drivers and barriers of BUIs 64
3.4.7. Selected inspiring cases 65
3.5. Research Line 5: Food security and healthy diets 67
3.5.1. Mapping analysis of the BUIs 67
3.5.2. Degree of involvement of actors 67
3.5.3. Initiatives' effects on vulnerabilities 70
3.5.4. Implementation dynamics 72
3.5.5. Justice 74
3.5.6. Drivers and barriers of BUIs 76
3.5.7. Selected inspiring cases 78
3.6. Research Line 6: Food values 81
3.6.1. Mapping analysis of the BUIs 81
3.6.2. Mapping analysis of the BUIs 81

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101036504

3.6.3. Initiatives' effects on vulnerabilities 84
3.6.4. Implementation dynamics 87
3.6.5. Justice 92
3.6.6. Drivers and barriers of BUIs 95
3.6.7. Selected inspiring cases 97
3.7. Research Line 7: Transport Poverty 99
3.7.1. Mapping analysis of the BUIs 99
3.7.2. Degree of involvement of actors 99
3.7.3. Initiatives' effects on vulnerabilities 101
3.7.4. Implementation dynamics 102
3.7.5. Justice 104
3.7.6. Drivers and barriers of BUIs 105
3.7.7. Selected inspiring cases 106
3.8. Research Line 8: Post-lockdown transport choices 108
3.8.1. Mapping analysis of the BUIs 108
3.8.2. Degree of involvement of actors 108
3.8.3. Initiatives' effects on vulnerabilities 110
3.8.4. Implementation dynamics 111
3.8.5. Justice 113
3.8.6. Drivers and barriers of BUIs 114
3.8.7. Selected inspiring cases 114
4. Discussion 116
4.1. BUIs distribution per Research Lines 116
4.2. Framework of involved actors 117
4.3. Framework of vulnerability 118
4.4. Framework of proximity 121
4.5. Common drivers and barriers across bottom-up initiatives 123
5. Final remarks 129
Acknowledgment 131
References 133

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101036504

List of Figures

Figure 1 – ACCTING research development 16
Figure 2 – Implications of RL1 with other RLs 22
Figure 3 – Actors involvement in RL1 23
Figure 5 – BUIs and vulnerabilities in RL1 25
Figure 4 - Impacts of BUIs on vulnerabilities in RL1 25
Figure 6 – Implications of RL2 with other RLs 33
Figure 7 – Actors involvement in RL2 33
Figure 8 – BUIs and vulnerabilities in RL2 36
Figure 9 – Impacts of BUIs on vulnerabilities in RL2 36
Figure 10 – Implication of RL3 with other RLs 44
Figure 11 – Actors' involvement in RL3 44
Figure 12 – BUIs and vulnerabilities in RL3 47
Figure 13 – Impacts of BUIs on vulnerabilities in RL3 47
Figure 14 – Implications of RL4 with other RLs 55
Figure 15 – Actors involved in RL4 56
Figure 16 – BUIs and vulnerabilities in RL4 58
Figure 17 – Impacts of BUIs on vulnerabilities in RL4 59
Figure 18 – Implications of RL5 with other RLs 67
Figure 19 – Actors involved in RL5 67
Figure 20 – BUIs and vulnerabilities in RL5 70
Figure 21 – Impacts of BUIs on vulnerabilities in RL5 70
Figure 22 – Implications of RL6 with other RLs 81
Figure 23 – Actors involved in RL6 81
Figure 24 – BUIs and vulnerabilities in RL6 84
Figure 25 – Impacts of BUIs on vulnerabilities in RL6 85
Figure 26 – Implications of RL7 with other RLs 99
Figure 27 – Actors involved in RL7 99
Figure 28 – BUIs and vulnerabilities in RL7 101
Figure 29 – Impacts of BUIs on vulnerabilities in RL7 101
Figure 30 - Implications of RL8 with other RLs 108
Figure 31 - Actors involvement in RL8 108
Figure 32 – BUIs and vulnerabilities in RL8 110
Figure 33 – Impacts of BUIs on vulnerabilities in RL8 110
Figure 34 - Word frequency query result 116
Figure 35 – BUIs distribution per RLs 117
Figure 36 – General framework of the main involved actors 118
Figure 37 – General framework of the main impacted vulnerabilities 118
Figure 38 – Prevalent groups of BUIs by type of Vulnerabilities addressed 120
Figure 39 – BUIs addressing Gender vulnerabilities on total of mapped BUIs 121
Figure 40 – BUIs addressing the Disability vulnerability on total of mapped BUIs 121
Figure 41 – Impacts of BUIs not always assessable 121
Figure 42 – Institutional proximity 122

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101036504

Figure 43 – Relational proximity 122
Figure 44 – Social proximity..... 123

List of Tables

Table 1 – ACCTING research lines 17
Table 2 – RL1 drivers and barriers table 29
Table 3 – Inspiring cases of RL1 table 31
Table 4 – RL2 drivers and barriers table 41
Table 5 – Inspiring cases of RL2 table 42
Table 6 – RL3 drivers and barriers table 50
Table 7 – Inspiring cases of RL3 table 52
Table 8 – RL4 drivers and barriers table 64
Table 9 – Inspiring cases of RL4 65
Table 10 – RL5 drivers and barriers table 76
Table 11 – Inspiring cases of RL5 78
Table 12 – RL6 drivers and barriers 95
Table 13 – Inspiring cases of RL6 97
Table 14 – RL7 drivers and barriers table 105
Table 15 – Inspiring cases of RL7 table 106
Table 16 – RL8 drivers and barriers table 114
Table 17 – Inspiring cases of RL8 table 115
Table 18 - National researchers of mapping activity 131

List of Acronyms

AU	Austria
BE	Belgium
BG	Bulgaria
BR	Brazil
BUI	Bottom-up Initiative
CS	Serbia
CY	Cyprus
CZ	Czech Republic
DE	Germany

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DK	Denmark
EE	Estonia
EEM	Energy Efficient Measures
ES	Spain
ESFC	Environmentally Sustainable Food Consumption
FI	Finland
FR	France
GD	Green Deal
GO	Guarantees of Origin
GR	Greece
HR	Croatia
HU	Hungary
IE	Ireland
I-REC	International Renewable Energy Certificates
IT	Italy
JP	Japan
LT	Lithuania
LU	Luxemburg
LV	Latvia
MT	Malta
NGO	Non-governmental organisation
NL	Netherlands
NO	Norway
NR	National Researcher
PL	Poland
PT	Portugal
REC	Renewable Energy Certificates
RL	Research Line
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
SME	Small and Medium Enterprises
TR	Turkey

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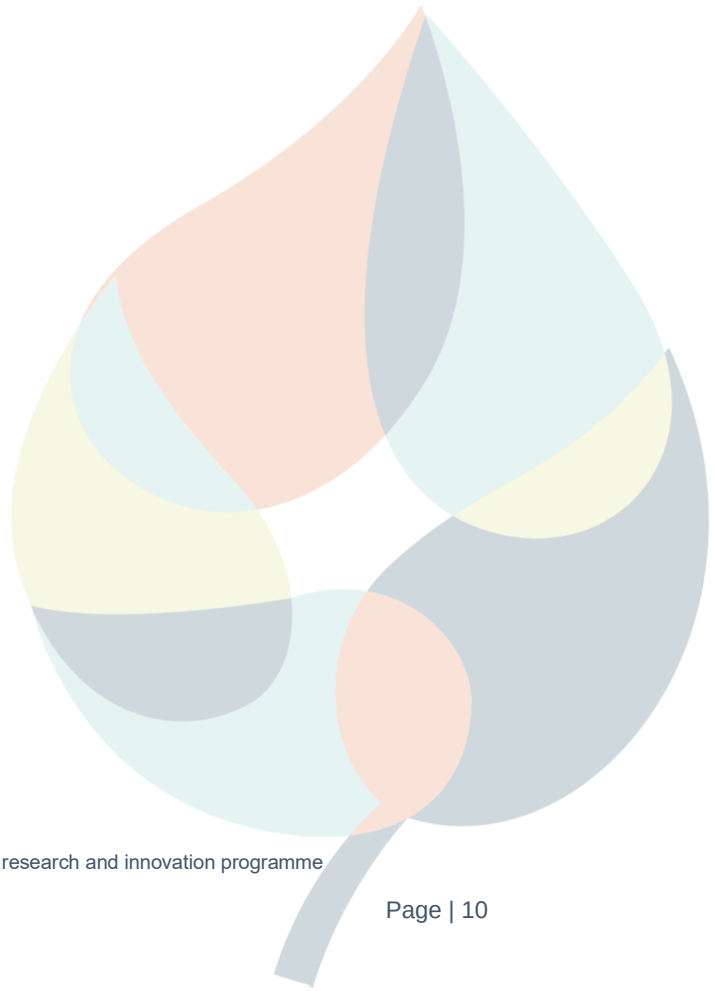
The ACCTING project

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 will mobilise research experimentation and innovation to promote an inclusive and socially just European Green Deal focusing on the inequalities produced by its policies.

The project will explore the impact of Green Deal policy initiatives on individual and collective behaviours, provide evidence, and empower policymakers and stakeholders to anticipate policy responses and potential negative influences, and mitigate such impacts in decision-making. ACCTING will collect new data on Green Deal policy interventions and co-design and implement pilot actions to reduce or prevent policy-related inequalities.



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Project Consortium

SCIENCE CONNECT YOUR PARTNER IN SCIENCE	European Science Foundation (ESF)
ÖREBRO UNIVERSITY	Örebro University (ORU)
YELLOW WINDOW	Yellow Window (YW)
K&I Knowledge and Innovation	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
Sabanci Üniversitesi	Sabanci University (SU)
IGOT Instituto de Geografia e Ordenamento do Território UNIVERSIDADE DE LISBOA	Instituto de Geografia e Ordenamento do Território (IGOT)
SEERC SOUTH-EAST EUROPEAN RESEARCH CENTRE	South East 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)

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Summary

The aim of this report is to provide information on inspiring practice cases of bottom-up initiatives across the 34 countries that have been mapped within the ACCTING EU project. The report examines the types and characteristics of the initiatives mapped.

In **Chapter 1**, the main Concepts & Methods of ACCTING EU project are introduced. In **Chapter 2** the research activity of 'mapping Bottom-Up Initiative (BUIs)' is described. Further in **Chapter 3**, the mapped BUIs are presented according to the eight research lines. In this central chapter for each research line an analysis of the bottom-up initiatives is presented highlighting common themes of implementation, justice profiles and specific barriers and drivers.

Research Lines:

Climate Action:

1. *Valorising local knowledge on natural hazards*: Aims to study (and experiment) how local communities are already active actors in the preparedness, prevention, and management of disasters related to natural hazards.

Biodiversity:

2. *Land use restrictions*: Understand the match of land use restrictions and socio-economic needs of vulnerable groups.

Clean energy:

3. *Energy poverty*: Support energy communities considering energy poverty and facilitating the participation of vulnerable groups.
4. *EEMs/SMEs*: How small and micro entrepreneurs can adopt pro-environment behaviours (mainly through a better energy-efficiency) in the context of the GD

Farm to fork:

5. *Food security*: Improve food security, promote adoption of healthy consumption practices and food waste mitigation, without reproducing inequalities.
6. *Food values*: Investigates what values are automatically associated with, and relevant for, environmentally sustainable and non-sustainable food, depending on culture (countries), age groups, gender, or key vulnerable groups.

Sustainable mobility:

7. *Transport poverty*: Understand how sustainable mobility patterns can be obtained without reproducing already existing inequalities.
8. *Post-lockdown transport choices*: How a more sustainable transport system can be achieved in the context of the GD in case of disruptive events

Chapter 4 and Chapter 5, Discussion and Final Remarks, discuss the results of the analysis of all the mapped BUIs across the different research lines. What emerges is that most BUIs focus on the themes of food and land; energy is also a central issue. Further, the BUIs surveyed appear to focus mostly on the vulnerabilities based on income, rural/urban gap, age, and ethnicity. They are led by various actors, principally citizens' and community organisations, voluntary organisations, NGOs, and micro and small enterprises, suggesting a vitality of the civil society in promoting the green transition. However, local authorities and the public sector influence barriers and drivers for many BUIs. Drivers that propel many of the BUIs include internally held resources such as finances, awareness,

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information, knowledge and education (AIKE) and pro-environmental and prosocial attitudes. Additionally, the analysis highlights that, contextual drivers and barriers, such as prosocial culture in the community, play a role in supporting collective actions, particularly at the neighbourhood level, where social bonds are active and strong. The research presented, albeit non-conclusive and part of a larger research process within the ACCTING project, suggests that societies still face a wide problem of distributive justice and recognition justice that civil society actors consider a priority in promoting the green transition. The analysis also shows a window of opportunity for learning, knowledge transfer and future research: while there is a relatively low number of BUIs explicitly addressing gender+ inequality issues, they do exist. The challenge for future research is to learn from those BUIs that do address gender+ inequalities and to transfer these insights to those who do not, as well as to translate this knowledge to operational recommendations.

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Introduction

The **global climate crisis** has a devastating impact on individuals, families, collectives of people, economies, and societies. The impacts are not only **ecological**, but they are also **economic**, **social**, and **political**. It is increasingly recognised by the scientific and policy communities that while both the effect of climate change and the capacity to mitigate its negative impacts affects all segments of society, they are not evenly distributed either across or within societies (EC 2021; Hulme et al. 2020). People are disproportionately affected, with **poorer**, **marginalised**, and **vulnerable groups** bearing the brunt.

Launched in 2019, the **Green Deal** (GD) confirms the EU's leading role in progressive and horizontal policymaking, which seeks to simultaneously address environmental, social, and economic inequalities. Even though the European GD acknowledges that climate change policies need to be inclusive and progressive to be effective and legitimate, as revealed in the problematic areas identified by the GD policy, as well as the policy measures and actions to counter them, **GD seems not impacting everyone equally**. Vulnerable groups can be impacted unequally and in different ways depending on the policy area and the intersection of vulnerability factors. Averting, or even mitigating this crisis requires **transformative change**: changes in the behaviour of individuals, communities, and organisations so that no one is left behind.

The overarching aim of **ACCTING** is to contribute to producing knowledge and innovation from a gender+ intersectional perspective to advance behavioural change at individual and collective levels, and in related social practices and policies, for an inclusive and equal European Green Deal. Based on the data collected on Green Deal policy interventions and their unequal impact, ACCTING will co-design and implement pilot actions to reduce or prevent policy-related inequalities.

1. ACCTING: Concepts & Methods

This chapter comes from two other ACCTING documents: the project Grant Agreement and the deliverable D3.1 *Theoretical framework for ACCTING: Advancing behavioral change through an inclusive Green Deal* (Zorell et al. 2022).

1.1. Key conceptual components

ACCTING combines activities of experimental research and innovation, action research, co-creation of sustainable impact, impact evaluation and wide disseminations. Its

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interdisciplinary conceptual and methodological framework is inspired by strategic policy design-thinking and specifically consists of 6 main key conceptual components:

1. A strong focus on **social justice** – highlighting socially just transitions, representing a combination of climate justice and social justice perspectives (Stevis & Felli 2016). Scholarship of environmental justice point at economic and socio-political explanations behind reproduction of environmental injustices and vulnerabilities (Roberts et al. 2018; Medwinter 2020).

2. The understanding of behavioural change in the framework of the **complexity paradigm** – highlighting that systems cannot be understood starting from their components taken alone but are the product of the continuous interaction of several intersectional present and historical factors, processes, and inequalities (Byrne & Barniaux 2017; Walby 2007).

Their combination leads to three connected theoretical perspectives:

3. A **vulnerability perspective** that foregrounds how those affected by/affecting GD policies are segmented and socially stratified by a multidimensional set of risk factors – drawing on different classifications of vulnerability factors (e.g., Quaranta & Quinti 2005; Ranci 2009; Stiglitz et al. 2009; Labonté et al. 2012).

4. The identification of vulnerable groups not just as victims, but as key **agents of transformative change**. Social groups and communities which are more exposed to the diversified and often cumulating risks of being damaged by climate change and the norms targeting it, can in turn be, and they often actually are, among the key actors for managing the climate transition, particularly when they form groups and networks to collectively address the issues they face (Schor & Thompson, 2014).

5. A **gender+ intersectional perspective** that considers the multiple intersections of inequalities and active engagement (Walby et al. 2012), and the related complexity and power dynamics underlying behavioural, social, and cultural change – underlining and making visible the pervasive power dynamics affecting behavioural, cultural, and social change. Intersectionality broadens the categories/factors included in the analysis and addresses their intersections, which account for the variability of intentional and unintentional, positive, and negative rebound effects we observe (Davis 2008; Ritzer & Stepinisky 2013; Verloo 2013).

These perspectives are enacted and understood within the project through the final component:

6. The management of **different disciplinary and epistemic perspectives**. – including, for example, tensions between strands or models focusing on *behavioural change of individuals*, mostly based on economic or psychological approaches, and the other focusing on *social practice models and change*, mostly based on sociological approaches (Black & Eiseman 2019).

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1.2. Research design

To operate the previous conceptual components, ACCTING's overall methodology is based on **co-creation** and solution and **innovation-driven design-thinking**, with a step-by-step process running in **2 research and innovation cycles**, over 40 project months. Each cycle consists of four steps:

a. **Research and experimentation**. They include a mapping to identify and analyse bottom-up initiatives (BUIs) and societal responses to the GD in 34 countries, and the development of eight RLs, each addressing a GD policy area and consisting of 41 experimental studies (410 narrative interviews and 41 case studies in 13 countries).

b. **Creativity and co-creation in Open Studios**. The aim is identifying directions for solutions in a participative way in Open Studios[1], mixing researchers from the consortium with activists, policymakers, and scientists.

c. **Solutions and innovations**. The solution step develops solutions and implements concrete outputs for policymakers and different stakeholders.

d. **Outcomes and impacts**. Disseminating the results and engaging in outreach to ensure that the project work has a maximum impact in terms of new knowledge generation and in making the results useful for policymakers and stakeholders.

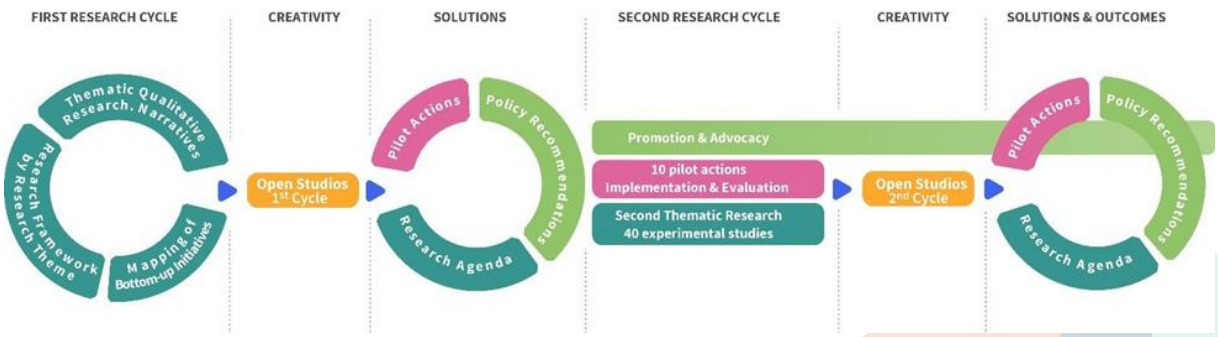

Figure 1 – ACCTING research development

1.3. Research lines

The research is designed in **eight interdisciplinary research line** (RLs), which run in parallel and inform the two research activities. The first activity is mapping local BUIs, the

[1] The Open Studios hence constitute a core part of ACCTING participatory and co-creative methodology. They are based on the ideas of **design thinking**, which represents a non-linear, iterative process used by teams to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test/demonstrate in Open Studios. The approach is inspired by the work of the Helsinki Design Lab, a Finnish initiative to boost innovation in the public sector through strategic design, which developed it as tool to turn trans-disciplinary and trans-epistemic approaches into practice, able to build bridges between the new knowledge created and social innovation in a comprehensive yet complex way (Boyer 2011).

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second involves a) interviews and b) case studies running in two cycles. The first exploratory cycle uses narrative interviews, the second explanatory cycle uses mixed methods. All first cycle narrative interviews follow the same three steps: identification of vulnerability factors via desk research, identification of motivations/drivers/obstacles; fieldwork and analysis, and reporting. The case studies in the second cycle follow different steps, all designed at the RL level but with harmonised output which allows for qualitative comparative analysis of the case studies.

Table 1 – ACCTING research lines

Green Deal Area & ACCTING research line	Objectives
Climate Action: 1.Valorising local knowledge on natural hazards	Aims to study (and experiment) how local communities are already active actors in the preparedness, prevention, and management of disasters related to natural hazards
Biodiversity: 2.Land use restrictions	Understand the match of land use restrictions and socio-economic needs of vulnerable groups
Clean energy: 3.Energy poverty	Support energy communities considering energy poverty and facilitating the participation of vulnerable groups
Clean energy: 4.EEMs/SMEs	How small and micro entrepreneurs can adopt pro-environment behaviours (mainly through a better energy-efficiency) in the context of the GD
Farm to fork: 5. Food security	Improve food security, promote adoption of healthy consumption practices and food waste mitigation, without reproducing inequalities.
Farm to fork: 6. Food values	Investigates what values are automatically associated with, and relevant for, environmentally sustainable and non-sustainable food, depending on culture (countries), age groups, gender, or key vulnerable groups.
Sustainable mobility: 7.Transport poverty	Understand how sustainable mobility patterns can be obtained without reproducing already existing inequalities.
Sustainable mobility: 8. Post-lockdown transport choices	How a more sustainable transport system can be achieved in the context of the GD in case of disruptive events

2. Mapping Bottom-Up Initiatives

Part of this chapter comes from the document of the ACCTING project D2.1 *Mapping exercise handbook* (Carnevale et al. 2022).

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2.1. The mapping activity

The activity of **mapping** aims to build on **bottom-up initiatives** (BUIs) stemming from groups of people, communities, and organisations, including social partners and those active in the social economy and in the promotion of actions aimed at the mitigation and adaptation to climate change. The purpose is mapping "better stories" of bottom-up behavioural change and policy solutions in different local and national contexts and analyse the conditions of their success. The meaning of "better story" is that it moves beyond "success" and "failure" and focuses on the more insightful next step towards acknowledgment and transformation. The concept of better story is borrowed from feminist anthropologist Dina Georgis (2014). Dina Georgis argues that narrative is an emotional resource for learning and for generating better political futures. Her work has suggested that narrative not only gives us insight into social constructs, but also leads us into understanding the enigmatic processes by which we become and give ourselves over to collective memories, histories, and identities.

Against this backdrop, from **June to August 2022**, **37 national researchers** (NRs) in **34 countries,** coordinated by the research team of NTNU, have mapped **693 BUIs** in the **8 RLs**. This report delivers the result of the analysis, and a selection of the most inspiring cases based on the mappings carried out by the NRs.

2.2. Toolkit

To perform the mapping activity, a template named "**toolkit**" has been provided to all the NRs at the beginning of their mapping activity. The toolkit was composed of 4 sections: (1) a **Registration form**, (2) a **National researcher identification form**; (3) A **Mapping analytical template** (quantitative); (4) a **Mapping reporting template** (qualitative).

Completing the template, the NR was invited to provide insights

a. to understand the differences in approaching different target groups, the impact of BUIs on the inequalities and, vice versa, the impact of inequalities in the design of these initiatives.

b. to investigate the agency of individuals and communities in the context of bottom-up sustainable innovations.

2.3. Framework of vulnerabilities

Emerging research indicates that climate change has significant gendered and intersectional impacts (Kennedy & Kmec 2018; Krange et al. 2019; Terry 2011). Nevertheless, climate change mitigation and adaptation policies have been criticised to have failed to address gender and other intersecting inequalities (Alston 2014; Djoudi et al.

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2016; Kaijser & Kronsell 2014). Consequently, the impacts of both climate change and its policy responses are uneven and unequal, disproportionate in their consequences for different social groups, and their long-term impacts are uncertain (Chancel & Picketty 2015; Jorgenson et al. 2019; Kartha et al. 2020; Pellegrini-Masini et al. 2020; McGregor 2017; Wilkinson & Pickett 2011). This explains, therefore, the reason why ACCTING has adopted a 'gender+' approach, which aims to attend to multiple forms of inequalities as they intersect with gender inequality (Kuran et al. 2020). This means that the degree of vulnerability does not depend on a single **dimension of vulnerability** (e.g., belonging to a demographic group, such as the elderly or children) but is the result of a complex relationship between different factors:

"[…] *people are not born vulnerable; they are made vulnerable*. […] *different axes of inequality combine and interact to for systems of oppression – systems that relate directly to differential levels of social vulnerability, both in normal times and in the context of disaster. Intersectionality calls attention to the need to avoid statements like 'women are vulnerable' in favour of a more nuanced view* […]" (Tierney 2019, 127-128)

For a matter of simplification, we define the traits of vulnerability based them on intersectional and non-discriminatory meanings in relation to (a) the *EU Charter of Fundamental Rights* and (b) the *Handbook on European non-discrimination law* – 2018 edition.

EU Charter of Fundamental Rights, TITLE III, Equality, **Article 21 - Non-discrimination***: Any discrimination based on any ground such as sex, race, colour, ethnic or social origin, genetic features, language, religion or belief, political or any other opinion, membership of a national minority, property, birth, disability, age or sexual orientation shall be prohibited.*

Handbook on European non-discrimination law, **Multiple and intersectional discrimination**
Key points

- *Addressing discrimination from the perspective of a single ground fails to tackle adequately various manifestations of unequal treatment.*
- *Multiple discrimination' describes discrimination that takes place on the basis of several grounds operating separately.*
- *Intersectional discrimination' describes a situation where several grounds operate and interact with each other at the same time in such a way that they are inseparable and produce specific types of discrimination.*

2.4. Framework of involved actors

The BUIs that are of interest to the mapping tend to be advocated and promoted and/or run by informal and formal actors (Van Meerkerk 2019). Accordingly, we defined some categories of actors in order to help NRs to perform the mapping activities:

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- **Citizens' and community organisations (**including community groups): they refer to the organisations aimed at making desired improvements in a community's environmental health, well-being, and overall functioning.
- **Voluntary organisations**: they refer to the organisations whose primary purpose is to create social impact rather than profit.
- **Charities**: organisations set up to provide help and raise money for those in need.
- **Local authorities**: organisations formally responsible for all the public services and facilities in a particular area.
- **Micro and small enterprises**, including social enterprises and cooperatives and their networks.
- **NGOs**
- **Universities and research centres**

2.5. Framework of proximity

In the mapping template provided to the researchers, there was a section named "Proximity framework" inspired by the study of Seebauer et al. (2019). The concept of proximity allows a better understanding of how actors operate in a collaborative setting, such as in the bottom-up initiatives. Proximity encompasses the relationship between the BUI members and the institutional authorities and their involvement in a shared network.

2.6. Framework of justice

As already explained in the section of "Key conceptual components" (1.1.), ACCTING combines activities devoted to experimental research and innovation and its interdisciplinary conceptual and methodological framework is inspired by strategic policy design-thinking and specifically consists of different justice components:

- A strong focus on **social justice**
- The understanding of behavioural change in the framework of the **complexity paradigm**
- A **vulnerability perspective** that foregrounds how those affected by/affecting GD policies are segmented and socially stratified by a multidimensional set of risk factors
- The identification of vulnerable groups not just as victims, but as key **agents of transformative change**
- A **gender+ intersectional perspective** that considers the multiple intersections of inequalities and actively engages them

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2.7. Data collection

The BUIs have been mapped using a digital template ("Toolkit", see 2.3) prepared by the partner in charge of the data collection (NTNU). The template has been shared with the NRs through the platform **Nettskjema** (a highly secure platform developed and operated by the University Information Technology Center, USIT, at the University of Oslo, UiO). NTNU organised and coordinated biweekly meetings with the national researchers in the months of May, June, July and August 2022. A time during which any type of problems, issues or interpretations regarding procedures, tools and concepts involved in the mapping activity were regularly discussed and clarified. At the end of the mapping activity (August 2022), the research data was transferred from Nettskjema to NTNU data storage.

Consortium partners will have free open access to the research data. All the sheets containing the mapped BUIs collected by NTNU on Nettskjema, after being anonymised or pseudonymised from any personal data, will be made available to the worldwide research community for re-use in a research data repository. The data repository will be uploaded one year later than the end of the project to ensure the proper period for ACCTING researchers to exploit the research data. The data will be uploaded to one of the following repositories: Zenodo and NTNU institutional repository for open research data, NTNU Open Research Data.

2.8. Data analysis

The data collected has been distributed among T2.3 partners of ACCTING, who have conducted an analysis based on a coding template (see Annex) developed, discussed and finalised within Task 2.3 of the Work Package 2 of the ACCTING project. The coding template has been used as a guide to carry out a qualitative analysis of the texts redacted by the national researchers during the mapping activity of the BUIs.

2.9. Limitations

Before moving forward to see some general findings per research line, we would highlight a final consideration. The mapping activity has been performed by the NRs as desktop research, carried out by consulting project literature and web resources.

Against this backdrop, it is understandable that judging the impact of the BUIs has been often not possible. Therefore, the data cannot be treated as the representation of a real impact assessment, but rather as the perception and the opinions of the researchers that performed the mappings. Nevertheless, the opinions of the researchers, when present, have been gathered and argued during the next sections.

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3. Mapping Analysis: General Findings

3.1. Research Line 1: Valorising local knowledge of natural hazards

3.1.1. Mapping analysis of the BUIs

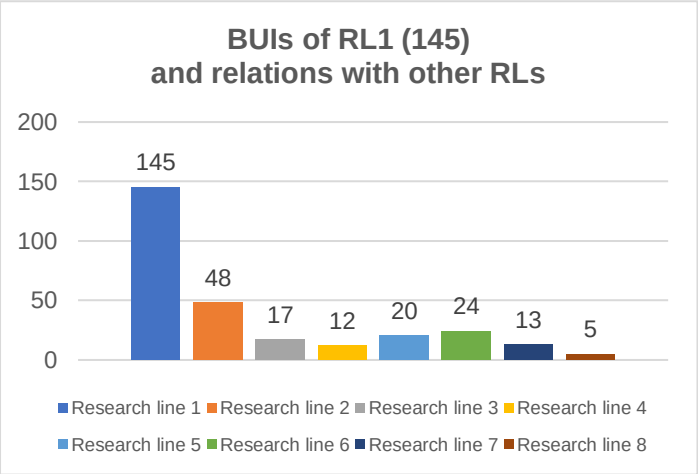

Figure 2 – Implications of RL1 with other RLs

The total number of BUIs analysed in RL1 is **145**. Analysing the researchers' responses, as shown in Figure 2, it is evident that these BUIs have relationships of some kind with all the other RLs.

The largest number of overlaps is with RL2 – "*Biodiversity and land use restrictions*" (**48**).

Also not negligible is the number of overlaps between the two food-oriented research lines RL5 (*food safety and health*, **20**) and RL6 (*environmentally sustainable food consumption*, **24**) with RL1.

These overlaps appear to indicate that there is a thematic synergy among these research lines and suggest the possibility of finding shared policies for the inclusion of vulnerable groups and the promotion of behavioural change.

3.1.2. Degree of involvement of actors

The main involved actors in the 145 BUIs examined in RL1 are **citizens` (85)** and **voluntary organisations (64)**, **NGOs (62),** followed by **local authorities (43)** and to a lesser extent

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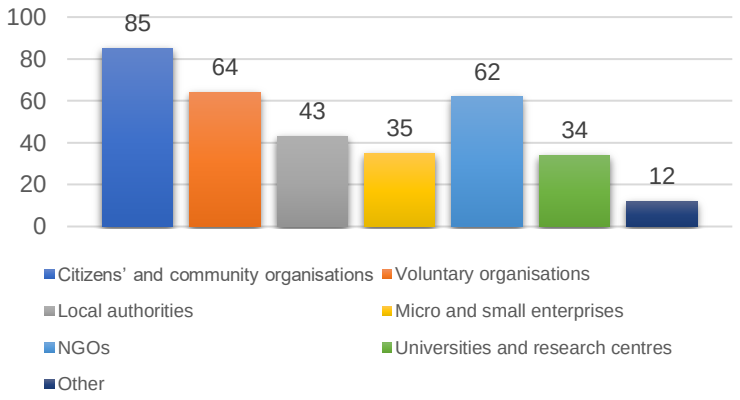
Figure 3 – Actors involvement in RL1



micro and small enterprises (35), **universities, and research centres (34)**. This data seems to suggest that a lively third sector can generate and sustain a considerable amount of BUIs, in about two-thirds of cases without the involvement and support of local authorities. Considering that the total initiatives are 145, the data show an **important co-involvement** of actors, since no categories of actors stand out absolutely over others.

The role of the **authorities** cannot be neglected, which often become key actors in supporting initiatives with resources. For example, it could be seen in the case "What if…? – A city is rehearsing its downfall", (DE)[2]. Through the initiative, led by The Urban Lab, the citizens of the city of Nuremberg are confronted with the future vision of an extreme heat/drought wave that could occur in 2035. The fictional crisis is based on a scientifically based scenario and becomes a story that the citizens of the city can experience through fictional reporting and public interventions in urban space. The initiative is part of the National Urban Development Policy (*Nationale-Stadtentwicklungspolitik*), the driving force behind urban development in Germany since 2007. It is a joint program of the federal government, states, and local municipalities.

Hence, it could be argued that, in some cases, the intervention of authorities is crucial for successfully involving the different actors and vulnerable groups. Without their interventions, in some cases, it would be hard for people to start good changing practices in favour of more inclusive and sustainable behavioural models. For example, it could be seen in the case "PANT-AID" (IT)[3], exemplar because it is co-led by **local authorities** and **voluntary organisations**. The project aims to reduce risks related to fires and biodiversity loss within the Pantelleria Island National Park through the establishment and training of an intervention and management group composed of volunteers (citizens but also the tourists who visit the island) and disabled people (i.e., persons with dystrophies and other neuromuscular diseases). The initiative is led by different local authorities and organisations of civil society, including the UILDM (*Unione Italiana Lotta alla Distrofia Muscolare*), the Italian association for the fight against muscular dystrophy.

We have observed some characteristics that occur more frequently when local authorities are involved:

[2] https://www.nationale-stadtentwicklungspolitik.de/NSPWeb/DE/Home/home_node.html
[3] https://www.esperienzeconilsud.it/pantaid/il-progetto-pant-aid/

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- Small-scale communities where often the distance between the community and the local authority is reduced and the representative bodies of local authorities include many active citizens.
- Need for financial means for the success of the initiative due to contexts that are socio-economically depressed or geographically isolated (see e.g., "Flood responses in small Danish islands", DK)[4].
- Need for logistic infrastructures due to initiatives focused on organisational and technological factors of disaster management.

Among the various authorities, we would like to mention the contribution of the **European and international programs** to support some initiatives. An interesting case is constituted by the "Youth Engagement Activism Hub" (MT)[5]. The initiative has financial support from EEA grants[6] and wants to provide a platform for more inclusive democratic and civic youth engagement in pro-environmental decision-making.

Equally important is the role of **universities and research centres** in terms of a driving force to improve the resilience and capacity of transformations necessary to tackle climate change (see e.g., "Parkli", D)[7]. This is the case, for example, of "Facts about Climate" (CZ)[8], a team of independent scientific experts working in various fields – natural sciences, IT, social sciences, pedagogy, and communication – to cultivate a discussion in the Czech Republic about climate change and the related transformation to a low-carbon economy.

Consistent is also the involvement of **NGOs**. An interesting case is "Scientists for Climate" (HR), an active NGO built by qualified scientists of different disciplines that advocate declaration of national climate emergency and provide easy access climate change information, as well as interdisciplinary discussion of climate change issues in Croatia[9].

Finally, interesting in the category "other" is the presence of initiatives led by **faith-based institutions.** This suggests that issues like environmental risk, community resilience, and the capability of mitigating exposure are now widespread themes that go beyond the anthropocentric humanitarianism of the past. An example of this aspect is the case of "Ekopaasto" (FI)[10], the campaign of the Finnish Evangelical Lutheran Church that emphasises a variety of environmental themes from a Christian perspective as well as the Lutheran fasting tradition.

[4] The islands in question are three of the 27 Danish islands which are publicly owned, and they have no connection to the mainland, with an all-year population below 1,200 persons. Such islands are especially vulnerable to flooding and groundwater salination because of their low elevation over sea level (see: https://www.clicnord.org/1-denmark-1-flooding).
[5] https://foemalta.org/projects/yeah/
[6] https://eeagrants.org/
[7] Parkli is a research project funded by Baden -Württemberg Foundation`s "Innovation for Adaptation to Climate Change", a program in which local climate protection measures are developed together with citizens. By collecting and analysing environmental data, local changes and contexts, researchers enter into an active exchange with citizens and jointly develop local climate protection measures (see: https://datahub.openscience.eu/organization/parkli-community).
[8] https://faktaoklimatu.cz/
[9] https://www.znanost-klima.org/en/about-us/
[10] https://www.ekopaasto.fi

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3.1.3. Initiatives' effects on vulnerabilities

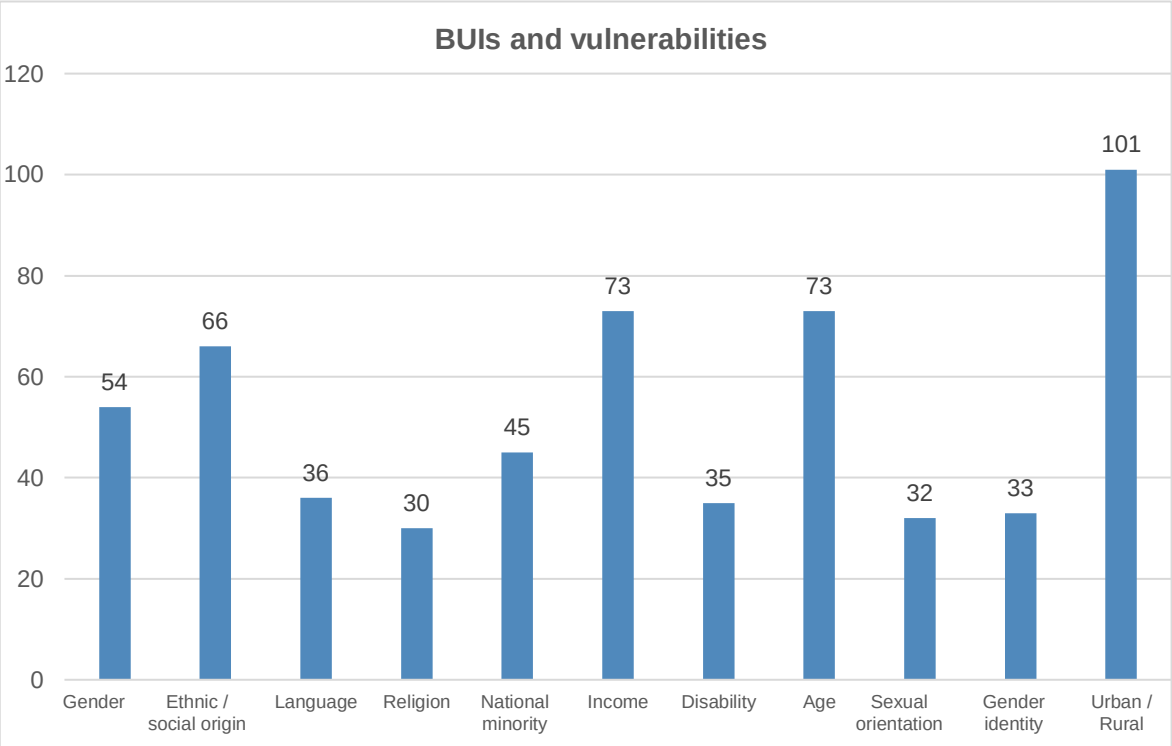

Figure 5 – BUIs and vulnerabilities in RL1

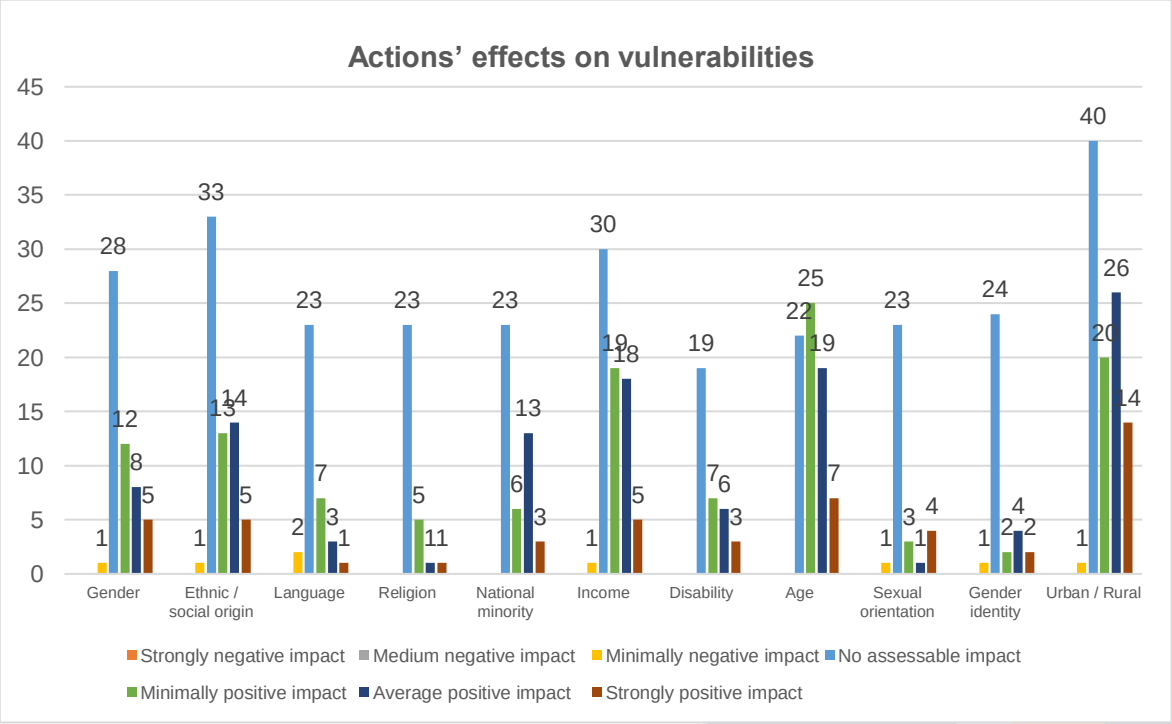

Figure 4 - Impacts of BUIs on vulnerabilities in RL1

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As it is possible to see from figure 4, the largest amount of mapped BUIs in this research line regard the urban/rural vulnerability, followed by income and age and finally ethnic and social origin.

This part of the mapping template was intended to give a quantitative measure to the personal evaluations of researchers regarding the impacts of the initiatives on the various categories of vulnerability. Therefore, the figures cannot represent an effective impact assessment, but rather the personal evaluation coming from the expertise and knowledge of the researchers that performed the mappings.

Nevertheless, it is possible to argue (Figures 4 and 5) that the positive impacts far outweigh the negative impacts and that there are no strong or medium negative impacts, and finally, that the areas with the greatest positive impact are: **Urban / rural**; **Age**; **Income**; **Ethnic / social origin**; **Gender, Gender identity** and **Sexual orientation**.

Firstly, the statistics would seem to describe, with some evidence, the implications between the mapped initiatives and the type of vulnerabilities linked to the relationship between **urban and rural areas**. Of the initiatives impacting on this aspect (100 initiatives out of a total of 145), 59 were assessed to have a beneficial impact. Probably, by improving local awareness about the preparedness, prevention, and management of disasters related to natural hazards, the relationship between urban and rural areas can also benefit.

A second observation that we would like to draw from the graphs concerns the perception of impact that researchers had about the vulnerability of **income** and therefore **poverty**. Often, disasters occur where communities face hazards with poor coping capacity, making them particularly vulnerable. The mapped BUIs seem to indicate important benefits: more than half (42) of the 73 mapped initiatives were assessed as having a positive impact.

Another observation we would make is about **age**. This aspect of the vulnerabilities, which brings together 73 initiatives in total, is the only one in this RL in which at least one of the positive evaluations ("*minimally positive impact*": 25) overcomes the impossibility of expressing an evaluation ("*no assessable impact*": 22).

Regarding **gender,** a gender dimension seems to have implications in the BUIs as a matter of issue of sex and gender (54). Sexual orientation (34) and gender identity (33) are also relevant inequalities, although these two forms of vulnerability seem more difficult to map than others, as can be seen from the difference between assessable and non-assessable impacts in Figure 4.

Ethnic and social origin is also a factor with implications for BUIs. However, it is interesting to note that, despite the number of BUIs implicated (66), there is a certain gap between the number of total BUIs and the impact assessment that the researchers provided. In fact, the number of BUIs whose impact cannot be judged is substantial (33).

3.1.4. Implementation dynamics

The framework of vulnerability offers us the opportunity to extract some interesting **implementation dynamics** from the analysis of the BUIs. The first emerging dynamic concerns the complex relationship between **the local communities**, the aspects of

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involved vulnerability (caused or accentuated by the natural disaster), and the social construct of "**nature**". Broadly said, there are two lines of background interpretations acting under this perspective: **anthropocentric** vs. **eco-centric**.

In some BUIs, nature seems to be conserved and protected because its integrity essentially concerns the integrity and health of the human condition, both in a universal sense (all humans as potential victims of climate change), and in a differential sense (only some subjects, the most fragile and most vulnerable ones). This is noticeable in the case of "Amadora" (PT)[11]. This initiative aims to rescue and enhance the social role of senior citizens and their knowledge, experience, and life experiences, through actions that bring senior citizens closer to more concrete forms of active participation, particularly in accident and disaster prevention and protection.

In other BUIs, nature is understood as a *comprehensive and holistic environment*, a place that tends to see all human and non-human subjects equally involved in the ecosystem. In this context, some initiatives go as far as to see nature as a **therapeutic place of reconciliation** from the contradictions of contemporary society. This is the case of the "Sanctuary in Nature & Heritage" (IE)[12] that offers opportunities to migrants, refugees, and asylum seekers to enjoy Irish wildlife, landscapes, and built heritage, and to share their stories of nature and heritage in their own countries with Irish people.

It is also interesting to note the role of **park authorities** in this dynamic between people and territories. The presence of natural parks facilitates the development of bottom-up initiatives in the area. Furthermore, in this regard, the **tourist vocation** of the territories would also seem to play an active role. In countries such as Italy and Greece, where natural heritage is also a source of income and economy and where natural disasters have happened in recent years, several initiatives mobilise volunteers and citizens.

Generally speaking, and without claiming to be exhaustive, we can argue that, in cases where the initiative acquires a character of **politicization**, the BUI seems to increase its legitimacy as self-directed action, pushing vulnerable groups to use legal means as well as civil disobedience to amplify the environmental risks, casting shadows on the trustworthiness of governmental institutions. Furthermore, the politicization of the initiative often seems to bring about internal ***nuance*** between **different models of justice** – this is perceptible, for example, in the cases of the "Black Feminist Project" (*intersectional justice* and *climate justice*) as in the case of the Sami struggle (*social justice* and *climate justice*).

"Black Feminist Project" (US)[13] uses dynamic and engaging food and reproductive justice programming that explores the resonances of the intersections of race, class, gender, and respectability politics but also empowers black women's political leadership abilities. Interesting is also the case of a wind energy project in the Åfjord municipality (NO) and the political struggle of the Sami community to defend their rights on lands[14]. Although large-scale wind energy projects are framed as climate change mitigation strategies, they can

[11] https://www.cm-amadora.pt/
[12] https://dublin.cityofsanctuary.org/sanctuary-in-nature-and-heritage
[13] https://www.theblackfeministproject.org
[14] https://www.opendemocracy.net/en/can-europe-make-it/norways-sami-people-fight-for-their-land-as-reconciliation-commission-delves-into-their-past/

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simultaneously endanger sustainable life systems, generate community-based risks, and impact negatively the communities already striving to adapt to climate change.

Another interesting implementation dynamic seems to be connected to the issue of **resilience** and the tendency to leave the cities to **return to the countryside**. The return to the countryside is not just a nostalgic throwback, but it aims at building novel **social and regenerative approaches** such as agroecology, woodland management, conservation, and regeneration of habitats and biodiversity, together with increased social services, renewable energy generation, and sustainable housing projects. Interesting is the case of "Cultivate" (IE)[15], a practical sustainability organisation focused on active education – based in Cloughjordan Ecovillage, Co Tipperary. Alongside practical courses, events, and publications, the organisation has embraced appropriate technologies such as community energy, digital fabrication, and open-source hardware. They are interested in how these new technologies can be harnessed appropriately to build real resilience and help rural communities to monitor and protect the environment.

Further, regarding the creation of resilience, an important role is played by initiatives concerning **education** for younger generations, which are viewed as **agents of implementation change**[16]. Interesting the case of "Social Resilience in Schools" (HR), an initiative led by the University of Zadar that brings together social researchers and educational training practitioners from several Croatian institutions to research aspects of social resilience of schools in situations of natural (climate) disasters, as well as to empower them to enhance their resilience through learning and experience sharing[17].

3.1.5. Justice

When the initiative claims compensation for damage caused by a disaster, the demands for justice emerge clearly and their bottom-up character is arguably bolder. This happens especially when the initiative is performed in contexts of poverty and socio-economic depression or in remote and isolated communities. These initiatives seem to highlight a demand for **distributive and recognition justice** from marginalised and disadvantaged vulnerable groups already exposed to marginalisation and/or deprivation before the disasters happened (see e.g., AVABRUM, BR[18]).

When the BUIs advocate more universal ideas of change linked to global environmental and ecological justice issues, these BUIs often incorporate an **eco-centric justice perspective**, addressing the rights of all species and of nature itself. They involve all people, including future generations, regardless of their social and economic background,

[15] http://www.cultivate.ie

[16] Outside the European context, it seems interesting the "ProSPER.Net" program, which is an alliance of leading universities in the Asia-Pacific region that are committed to integrating sustainable development into postgraduate courses and curricula (https://prospernet.ias.unu.edu/).

[17] https://www.unizd.hr/sociologija/socotp

[18] AVABRUM was formed in 2019, shortly after the disaster when the local dam, built and kept by Vale company, breached, killing 272 people in Brazil's largest dam failure. The association is primarily made up of family members of the deceased, pressuring local and national authorities, as well as Vale, for compensation, punishing those responsible, and making sure similar disasters do not happen in the future (see: https://www.istoedinheiro.com.br/tag/avabrum).

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sexual orientation, gender, or origin, towards the same goal, which is contributing to a clean and waste-free world[19].

Finally, very few initiatives define themselves as driven by **intersectional justice** demands. An interesting case is the "Collective Against Environmental Racism" (DK)[20], a Copenhagen-based collective that raises awareness on how the environmental crisis is disproportionately affecting the most marginalised groups based on aspects such as race, gender, and sex. Their most discussed topics are (neo)colonialism, racism, patriarchy, white supremacy, and sexism. They argue the climate movement should have a decolonial and intersectional approach to the climate crisis. This is the case, for example, of the interesting "Yeşil Düşünce Derneği" ("Green Thought Association", TR)[21]. Founded in 2009 to disseminate green thinking and green politics, this association works mainly through research, publications, conferences, workshops, and campaign organisations at the national and international levels. Most of its activities are based on the intersections of gender, climate justice, and social justice. They work with academics, policymakers, and activists.

Finally, there are some BUIs conditioned by a **paternalistic/sexist vision** of the gendered division of labour between men and women. This is the case, for example, of the "Martha Organisation" (FI). The resilient role of women is understood as guardians of the domestic economy and, therefore, they could actively contribute to increasing forms of resilience in everyday life, for example through gardening, conversations, and moments of conviviality[22].

3.1.6. Drivers and barriers of BUIs

Table 2 – RL1 drivers and barriers table

The presence of local authorities in supporting the initiatives might act as both a driver and a barrier:

Drivers:

- ***Pivotal role of local authorities.*** Stimulation for sustainable behaviours in small-scale communities where often the representative bodies of local authorities include many active citizens
- Provision of ***financial and/or human resources*** for the success of the initiative in contexts that are socio-economically depressed or geographically isolated

[19] An example is Na mysli, a non-profit organization in Czech Republic dealing with issues of global sustainability, climate change and related environmental aspects. They try to restore the relationship between the urban population and the environment, support and motivate individuals on the way to a responsible lifestyle and simplify these steps for them. Their vision is for all residents to adopt a lifestyle based on mutual respect between the community and the environment, for a prosperous planet and a sustainable future (https://namysli.com).

[20] https://www.instagram.com/p/CI3FWtYnBhM/

[21] https://www.yesildusunce.org

[22] https://www.martat.fi. It must be said that this paternalistic vision is a legacy that derives from the long history of the organization. Martha Association has been founded in 1899. Towards the end of the 19th century, Finland was experiencing hard times under the Russian Empire. A group of far-sighted women realised that to endure these hardships Finland needed to start educational work at the grass-root level, which is why the Martha Association was founded. Advice on very basic skills was needed in the home, and the association started to offer home economics counselling, first by visiting individual households, an activity that soon developed into planned courses.

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- Provision of ***material and immaterial resources*** **(e.g., know-how**, education, technology) for initiatives focused on organisational and technological factors of disaster management

Barriers:

- ***Top-down approach of municipalities***. It decreases the quality of citizen participation: decisions that are too top-down limit public discussion, do not allow people to take responsibility, increase levels of dependency and, consequently, decrease the degree of awareness**.**
- ***Passive use of the support of authorities*** (financial and not). This does not create real patterns of behavioural changes in the community: if institutional aid is not linked to people motivations and incentives, it is spent passively. Once the institutional support is gone, the drive for change ends.
- ***Patronizing approaches of*** *local* ***authorities and other organisations*** (universities, NGOs, etc.) towards vulnerable groups, ignoring the claims of justice beyond their aspects of vulnerability and exclusion

There is no single model of justice that fosters better resilience and community-based natural disaster management. The **nature of justice demands** can translate in both drivers and barriers**.**

Drivers:

- Initiatives centred on specific claims or demands for environmental and social justice are often led by already marginalised/disadvantaged, defined by some specific condition of vulnerability, inequality, or injustice, e.g., low income, living by sources of pollution, etc.
- Initiatives linked to global themes of ecology and care for the environment seem to be driven by more affluent individuals or communities. Here, vulnerability is intended as a shared condition of a community, e.g. danger of floods in a specific area due to climate change.

Barriers:

- When the request for justice is too eco-centric, the attention to vulnerable groups and their demands for justice can fail
- When the justice request is merely compensation-based, the adoption of transformative and pro-environmental behaviours can fail

The **politization and radicalization of the initiatives** might act as both a driver and a barrier:

Drivers:

- Targeting specific marginalised groups
- Having a successful strategy for mobilisation
- Bringing to light internal conflicts between different models of justice – i.e., social justice vs climate justice

Barriers:

- *Pars pro toto* discourse of justice – the opposite of intersectionality
- Strengthening (and not mitigating) internal conflicts between different models of justice

The **presence of green areas** is a driver, but it is not without any risk of barriers**.**

Drivers:

- Acting as a motivation for local communities to mobilise in favour of initiatives that directly or indirectly promote pro-environmental behavioural changes
- The economy derived from tourism for parks appears to act as an incentive to promote sustainable initiatives
- Promoting rural practices of resilience

Barriers:

- Improper management of tourism business' disaster management could increase the level of disaster risk in some areas

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3.1.7. Selected inspiring cases

Many remarkable RL1 cases have been already mentioned in this chapter. However, the following cases were selected because, in our opinion, they are examples of bottom-up initiatives that potentially have the characteristics of presenting replicable policies for the promotion of pro-environmental behavioural change and the inclusion of vulnerable groups.

Table 3 – Inspiring cases of RL1 table

Country Name / Website	Description
ITALY **Voluntary system of civil defence of Florence** https://www.cittametropolitana.fi.it/protezione-civile	**The bottom-up initiative** In Florence, since the terrible floods in 1966, many citizens' organisations and groups have cooperated daily with the municipal civil defence system. It is a free and organised force. It represents an extraordinary resource in terms of skills and operational capacity with more than 5 thousand organisations across the country. **Valorising local knowledge and intersectional transformations** To make their action more effective, civil defence volunteers are associated with organisations, through which they share resources, knowledge, and experience. The organisations vary in size, history, approaches, and specializations. They cooperate with civil defence authorities in a wide range of activities, integrating with other structures of the civil defence system. Vulnerable groups: the BUI targets especially those particularly vulnerable to natural and social hazards, such as the elderly and disabled people.
SPAIN **Casa dels Futurs** https://www.instagram.com/la_casa_dels_futurs	**The bottom-up initiative** Casa dels Futurs is a project to create long-term physical and educational infrastructure to better support social and ecological movements to build solidarity and cooperation in times of climate crisis. They are organising around the goal of converting Barcelona's abandoned Hospital Sant Llatzer into a permanent Climate Justice Center and Movement School to cross-pollinate social and local solutions for movements to thrive on a damaged planet. **Valorising local knowledge and intersectional transformations** (1) *Climate Resilience*: creating a model of large-scale infrastructure that reduces ecological impact while building climate resilience.

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	(2) *Building Knowledge*: creating a permanent home for a Movement School that can cultivate social solutions that address the root causes of the climate crisis. They engage in decolonial, ecofeminist, and anti-racist practices intending to bring together diverse movements for mutual aid. They work to engage place-based pedagogies, situated knowledge, and popular education techniques to empower organisers with skills to build power and knowledge from below. Vulnerable groups: low-income persons, young people, elderly, and migrants. (3) *Global Solidarity*: creating infrastructure to support long-term and international networked organising for social and ecological movements.

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3.2. Research Line 2: Biodiversity and land use restrictions

3.2.1. Mapping analysis of the BUIs

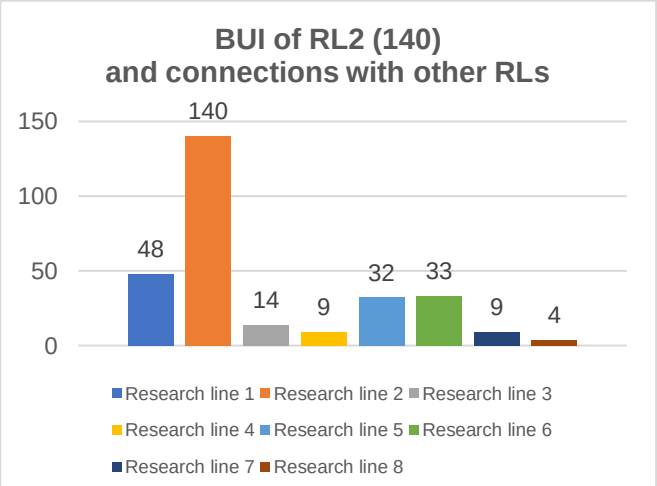

Figure 6 – Implications of RL2 with other RLs

The total number of BUIs analysed in RL2 is **140**. Examining the researchers' responses, as shown in Figure 6, the specular situation with the RL1 – "Community-based disasters' management and mitigating exposure" is evident. Indeed, the largest number of overlaps is with research line one (**48**). Furthermore, as for RL1, the number of connections is similarly remarkable with the two food-oriented research lines RL5 (*food safety and health*, **32**) and RL6 (*environmentally sustainable food consumption*, **33**).

3.2.2. Degree of involvement of actors

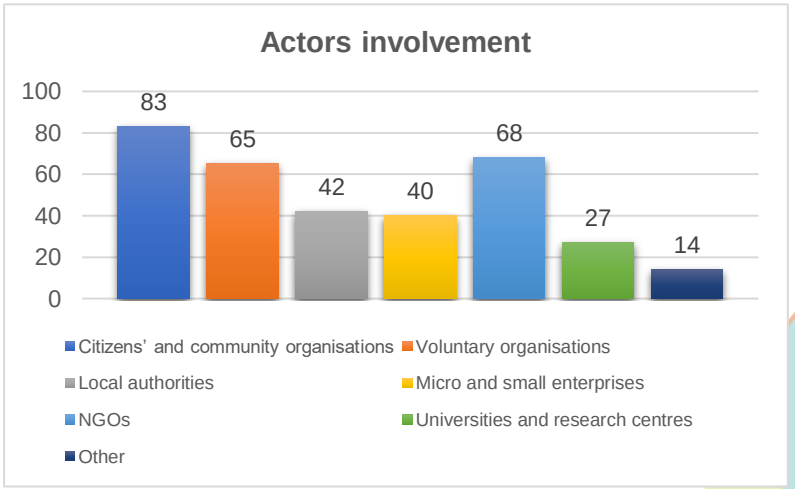

Figure 7 – Actors involvement in RL2

The main involved actors are citizens` organisations (83), NGOs (68), and volunteer organisations (65), followed by local authorities (42) and, to a lesser extent, micro and small enterprises (40). Considering that the first three top-involved types of actors are examples of voluntary participation of citizens and organisations, one could argue that topics like biodiversity and land use restrictions attract considerable bottom-up interest from civil society. The impression derived from looking at Figure 7 is that the initiatives mapped present a significant co-involvement of actors (globally, 339 actors are involved, or an average of 3.2 actors per BUI).

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An example of **community-led initiative** is “Save Karadere”[23], an informal community of people whose goal is to protect one of the last wild beaches in Bulgaria from turning into a large concrete resort. Another interesting case is ASPERQD (BR)[24], a not-for-profit civil society association founded in 2004 to develop projects seeking to improve community members' socio-economic and cultural experiences. The community is officially recognised as a quilombo (self-governing polities originating from run-away slaves). As such, it has a strong ethnic component when keeping the traditions and values of these ancient communities alive, fostering their symbiotic relationship with nature and their surroundings. In 2015, the Fundão Rejects Dam breach in Minas Gerais threw millions of tons of toxic minerals into the river Doce, which were carried through 600 km until Linhares, where the quilombo is located, heavily impacting it. ASPERQD has thus worked with local inhabitants and indigenous communities, seeking reparations and gathering local knowledge for overall organisation and mobilisation.

The role of the **local and regional authorities** cannot be neglected. We would mention here the case of some citizens’ organisations and municipalities in Germany and their initiatives to promote traditional water meadows around Queich. Traditional water meadow irrigation is very environmentally friendly and thus contributes to a sustainable approach to agriculture management. The knowledge and skills required for this practice in dealing with nature have been handed down from generation to generation since the Middle Ages. In 1996, to prevent the progressive decay of the irrigation system and to ensure the preservation of the water meadows by ongoing agricultural cultivation, the regional organisation “Interessengemeinschaft Queichwiesen” (translated: community of interest water meadows) was founded, which fosters the get-together of farmers, nature conservationists, representatives of the municipalities as well as further interested individuals. Since then, partial restoration of the traditional irrigation systems has been realised thanks to much volunteer effort. From 2003 to 2006, a Natura 2000 project, funded by the Landschaftspflegeverband Südpfalz[25], was conducted. With support from the federal state of Rhineland-Palatinate, the foundation “Deutsche Bundesstiftung Umwelt”, and the involved municipalities, the restoration of the large weirs of the Queich and the irrigation ditch system in Bellheim has been realised as part of that project, in association with many professional surveys focusing on nature conservation issues as well as environmental education activities. Meadow irrigation in the Queich meadows between Landau and Germersheim was included in the Federal List of Intangible Cultural Heritage according to the UNESCO Convention by the Conference of Ministers of Culture in December 2018[26].

In the initiatives mentioned, the importance of the contribution of the “**Natura 2000**” network emerges[27]. Natura 2000 appears as a promoter or supporter in various initiatives the

[23] For further details see: http://forthenature.org/cases/13. This case has been selected among the promising cases of RL2. See the corresponding table at the end of the chapter.
[24] For further details see: https://www.aspergd.org.br/wp-content/uploads/2021/03/ECQ_Degredo.pdf
[25] “Landschaftspflegeverbände” are service-providing and non-profit associations for the promotion of landscape conservation whose executive boards are equally composed of representatives of local politics, agriculture, and nature conservation.
[26] More details here.
[27] Natura 2000 is an EU network of core breeding and resting sites for rare and threatened species, and some rare natural habitat types which are protected. It stretches across all 27 EU countries, both on land and at sea. The aim of the network is to ensure the long-term survival of Europe's most valuable and threatened species and habitats, listed under both the Birds Directive and the Habitats Directive. For further details see: https://ec.europa.eu/environment/nature/natura2000/index_en.htm

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researchers have mapped (10 of 140). These initiatives aim not to protect or create strict nature reserves from which all human activities would be excluded. The approach to conservation and sustainable use – in line with the Natura 2000 network – is much wider, largely centred on people working with nature rather than against it. In some of these initiatives, consistent also seems to be the contribution of NGOs. An example is Enalia Physis Environmental Research Center, a Cyprus-based NGO established by a group of experienced scientists in 2009[28]. Its purpose is to conduct and promote environmental research in marine, freshwater, and terrestrial ecosystems. Their proposal is set to make a difference in the management of fisheries and the Kakoskali Marine Protected Area (MPA) by applying the bottom-up approach to fisheries management and including stakeholders in the decision-making process. The standard government top-down fisheries management process is considered poor and dysfunctional worldwide. This new governance model aims to build trust and cooperation between local stakeholders and national authorities, promote co-responsibility and a feeling of ownership and change the traditional decision-making process. This model will serve a common purpose: to protect, preserve and sustainably use marine biological resources.

[28] For further details see: https://enaliaphysis.org.cy

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3.2.3. Initiatives' effects on vulnerabilities

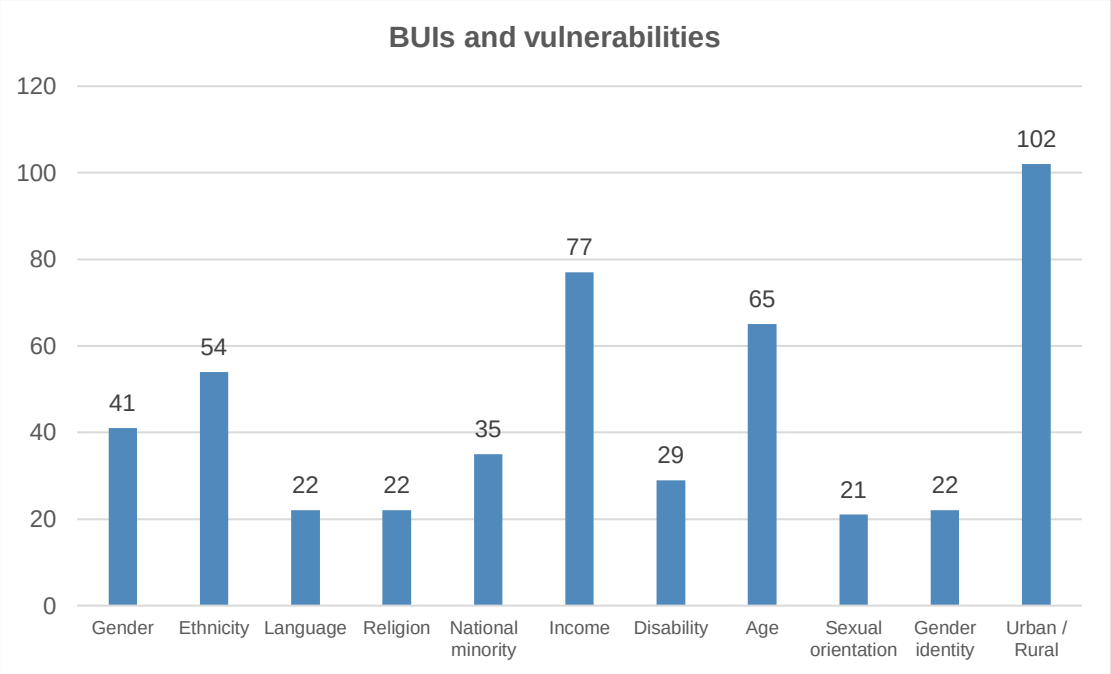

Figure 8 – BUIs and vulnerabilities in RL2

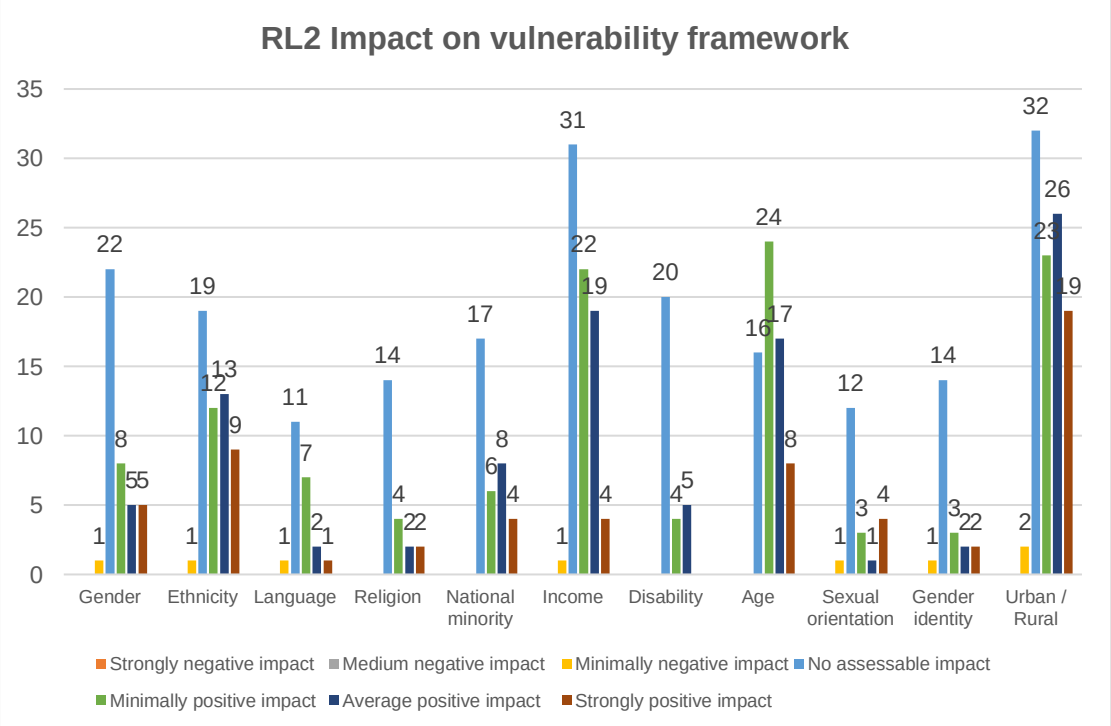

Figure 9 – Impacts of BUIs on vulnerabilities in RL2

The Figures (8 and 9) show that the positive impacts far outweigh the negative impacts and the areas with the greatest positive impact are: **Urban / Rural**; **Income**; **Age**.

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While bearing in mind that these are assessments made by researchers in their mapping activity and, therefore, they may be affected by the bias of subjectivity of the analyses, some observations can nevertheless be made. In fact, the statistics would seem to describe, with some evidence, the implications between the mapped initiatives and the type of vulnerabilities linked to the relationship between **urban and rural areas**. Of the 103 initiatives impacting this aspect (140 are the total initiatives mapped in this RL), 68 were assessed to have a beneficial impact.

A second possible observation refers to the vulnerability of **income**. The mapped BUIs seem to indicate important benefits: more than half (44) of the 77 mapped initiatives were assessed as having a positive impact.

Finally, a consideration about **age**. Similarly, to RL1, this aspect of the vulnerabilities, which gather 65 initiatives in total, is the only one in this RL in which at least one of the positive evaluations ("minimally positive impact": 24) overcomes the impossibility of expressing an evaluation ("*no assessable impact*": 16). As we will see further on (see 3.2.4 and 3.2.5), the theme of biodiversity and the protection of land seems to be very attractive both for the younger age groups – in terms of education, but also in terms of protest and social movements – and for the elderly not only in a passive sense – fragile people to be included socially – but also as fonts of knowledge and wisdom to be shared to strengthen the success of the BUIs.

3.2.4. Implementation dynamics

As already highlighted for RL1, also for this line of research, the presence of natural parks and other protected areas on the territory would seem to be an important enabling component of implementation. This is the case, for example, of a few initiatives around the protected area of Pollino Park (IT) aiming at encouraging actions for the protection and enhancement (in terms of local and social development) of the park through close collaboration between the park authority and voluntary and third sector organisations. Pollino National Park is an area encompassing 85,565 hectares, including 24,650 on the Basilicata side and 60,915 on the Calabrian side, threatened yearly by fire risk[29].

Another dynamic could be the challenging integration of biodiversity safeguarding and human vulnerability alleviation. This is the case of "Green Balkans", a leading organisation in the conservation of rare species and habitats in Bulgaria[30]. The Organisation was established in 1988 and is Bulgaria's oldest nature conservation NGO. For its almost 35 years of existence, Green Balkans has won recognition from international and national institutions, authorities, and donors as a welcome partner and a highly reputable and competent organisation; this is proven by the public confidence in the organisation and its almost 4,500 Bulgarian and foreign members. Thanks to Green Balkans' hundreds of volunteers, experts, and international and national support, the Society achieved significant

[29] For further details see: https://www.esperienzeconilsud.it/pollinofuture/scheda-del-progetto

[30] Among the different initiatives of the organization, we want to mention the protection and conservation of the salt lake of Pomorie and the wetlands in the Burgas area. Lake Pomorie and the Burgas wetlands are one of the most significant wetlands in Bulgaria (https://greenbalkans.org/Conservation-Brigade-Pomorie-Lake-2022-has-ended-3-7784). For further general details see: https://greenbalkans.org

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results in preserving Bulgaria's unique natural heritage. A paradigm initiative has been the work of Green Balkans for the protection of Lake Pomorie aiming at restoring the natural state and biodiversity of the lake, its preservation and the adoption of economic practices that protect biodiversity.

As we have seen in RL1, the awareness campaigns' features seem to lead, in some cases, the initiatives to take on the shape of politicised social movements; this is the case of the "Youth Green Movement," a Danish group of young climate activists that has as its main objective the "fight for a just green future" to be achieved through structural changes in society[31]. It is open to all youth, as they are/will be the group most affected by the climate crisis. Another interesting initiative is the NeSehnutí (CZ), an independent social-ecological movement in Brno[32]. They perceive that the causes of societal problems are interrelated and thus their solution too. Fair society (gender equality), thriving nature, sustainable city development, and prosperity of animals – it is the future, and they help to create it. They support communities, groups, and individuals in creating a fair world. They launch campaigns, and awareness-raising activities, educate, stress important topics, open public debates and negotiate with local authorities. The organisation is non-hierarchical; they promote the use of gender-sensitive language. The movement was founded in 1997. The topics they focus on are especially empowering citizens in general – supporting them in making change, mainly concerning the environment, gender equality – gender-sensitive education, sustainable cities for all, animal rights and diversity.

Further areas of interventions of BUIs lie in the relationship between mass tourism, biodiversity conservation, and local economies. Indeed, it emerges from some BUIs, the question about the form of tourism to be practised (even in specific cases of UNESCO-protected areas) and a broader debate about remote islands and their integration into the national economy and society. Most importantly, questions seem to arise about the development paradigms and the right of low-income local communities to base future development on their long-lasting resilience. An interesting case is Spasimo Bišovo (HR)[33], a local citizens' initiative from the remote island of Biševo, continuously inhabited for several centuries, to oppose *extractive tourism*[34] and promote the low-impact tradition of sustainable island existence. In recent years the nearby city and local authority have initiated a UNESCO-sponsored programme of land use restrictions in the interest of biodiversity and specific geological formation protection. The BUI deems the programme a cover for extractive tourism of large volume focused on a single attractive site on the island and restricting all other forms of tourism and economic activity on the island. In its stated aims, the BUI claims that it wishes to foster a broader understanding of the low-impact existence practised on the island for centuries and enable a broader visitor experience than a visit to a single geological wonder (the Blue Cave).

Education is essential for the sustainable and equitable use of biodiversity and its conservation. It is also crucial for mainstreaming knowledge about biodiversity. As

[31] For further details see: https://www.dgub.dk
[32] For further details see: https://nesehnuti.cz
[33] For further details see: https://spasimobisevo.org
[34] "Extractive tourism" is a term first coined by academic Vijay Kolinjivadi and goes beyond the basic interpretation of over tourism as a congestion caused by travellers flocking to tourism hotspots while balancing out the economic benefits. The new term better encompasses the destructive impact of mass tourism on local communities as well (Shapiro-Garza et al. 2021).

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UNESCO points out, “the erosion of indigenous and local knowledge and the associated decline in sustainable traditional land use threatens biodiversity and ecosystems services, as well as communities' contributions to accomplishing SDG 4 (inclusive and quality education). It is therefore vital to integrate biodiversity into education and learning programmes”[35]. Against this backdrop, an interesting case is the Waterways for Wildlife (IR) programme consisting of a series of events run along Ireland’s waterways, highlighting their importance in supporting wildlife. At these events, the participants look at various wildlife groups, such as bats, bees, and aquatic bugs. Event attendees learn how to identify and record biodiversity. By teaching local communities how to document the natural heritage of their waterways, the programme seeks to illustrate the importance of waterways as biodiversity corridors and train communities in biodiversity monitoring skills[36].

Finally, we would underline a niche dynamic, not very widespread, but which nonetheless has interesting characteristics according to its relationship with RL4 (*Intensifying the adoption of EEMs in micro/smaller SMEs*), namely the possibility that the care of biodiversity can also become a sustainable business micro-entrepreneurship. This is the case of the Creatief Beheer[37] (Creative Management), a company involved in several projects that increase the living conditions of neighbourhoods in Rotterdam. Under the wings of Creatief Beheer, the initiative Stadsgeneeskunde (City Therapy) took off in 2019. Stadsgeneeskunde is also active in Rotterdam and aims to create and manage biodiverse urban wilderness. The official start of the BUI has been initiated with the official approval to manage two city parks. These parks are often urban areas where a small park can be realised. Stadsgeneeskunde aims to contribute to urban biodiversity, air quality, and climate adaptation by engaging vulnerable groups in society. What appears interesting about Stadsgeneeskunde is that all parks it manages are acquired through the “right to challenge”. The right to challenge originates in the United Kingdom and it is the right for community organisations to submit an expression of interest in running services of local authority and fire and rescue authorities on behalf of that authority. In the Netherlands, the rights of citizens to take over neighbourhood projects are not contained in national laws. However, some municipalities have introduced the right to challenge local laws.

3.2.5. Justice

Among the first instances of justice that the analysis of the mapped initiatives would seem to highlight is environmental justice, which takes the form of protection of different natural

[35] For further details see: https://www.unesco.org/en/biodiversity/education
[36] More details here.
[37] https://mobile.twitter.com/tuinmanindewijk

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environments linked to the social and cultural life of individuals. There are many initiatives to protect rivers[38], forests[39], and water springs[40].

There are requests for recognition linked to environmental justice from socio-economic groups who live and derive sustenance from working the land, i.e. farmers and shepherds, whose livelihoods are challenged by an increasingly aggressive competition generated by globalised markets. A remarkable example is the Måbjerg BioEnergy project situated in Måbjerg, an area on the outskirts of Holstebro town in Western Denmark – one of Denmark's most important agricultural areas. The project was a solution to environmental concerns arising from the agricultural sector. While this is an important part of the local economy, concerns arose about the effects of run-off from local animal production. The resultant manure is typically spread onto fields in the area, but this was found to release worrying amounts of nitrogen, seeping into the fields in question, with negative environmental impacts in the form of water eutrophication in local wetlands. With these wetlands being newly designated as habitat areas by the EU, the local agricultural industry was forced to change its practices. In response to this, a group of local farmers worked with larger institutional stakeholders to initiate the development of a biogas plant. This allows the manure to be converted into biogases (primary methane) to produce heat and electricity. The by-products from this process are also harvested and used as fertilizer and fuel for further energy production. At the time of completion (2012), the biogas plant was the largest in the world, with a capacity of handling 560,000 tons of biomass annually and producing 18.4 million cubic meters of biogas[41].

Justice in bridging the protection of biodiversity with indigenous and local-traditional communities' rights is also an interesting aspect of some BUIs. An example is the Snowchange Cooperative (FI), a network of indigenous and local communities working on cultural, environmental, and science issues[42]. They primarily support programs in the boreal and the Arctic to advance Indigenous cultural issues and wellbeing, rewilding, and ecosystem restoration, as well as landscape-scale restoration of community lands. Using indigenous and traditional knowledge alongside the latest science and research, their

[38] See the case of case is ASPERQD (BR), already mentioned in this chapter.
[39] For example, Rädda Sörbyskogen i Örebro, initiated in 2021, is a citizen initiative aiming to prevent the municipality from exploiting Sörbyskogen in Örebro, a forest directly beside a housing area which has in the past years become very densely populated. The forest is home to many endangered species. As Örebro grows, the municipality has planned to carry out deforestation in the area to build housings where the forest grows. Sörbyskogen is a unique natural forest and an important asset for biodiversity close to the city of Örebro that houses many different threatened and sensitive plants and animal species. Located close to the city, the forest is a popular recreation area for the citizens of Örebro, not least for students and families of low and middle income who live close to the forest. The initiative Rädda Sörbyskogen was initiated to protest against the municipality's plans and ensure the preservation of this area and hereby the possibility of recreation for the people living in the are/in Örebro. The central issue pushed by the initiative is the establishment of a nature reserve in the area. (https://www.facebook.com/radda.sorbyskogen.orebro/)
[40] An example of this type of initiatives is Les fonts de Collserola (ES), a project promoted by the association "Fes Fonst Fent Fonting" with the aim of recovering and caring for the natural water sources of the Collserola Natural Park (near Barcelona) through hiking. The main objectives of the project are: (a) find 350 springs in the Serra de Collserola, photograph them, determine their georeferenced position, explain the itineraries that pass through them; (b) establish contact with other people and organisations to improve the database; (c) promote the knowledge of natural springs because they are a natural treasure, they are part of the historical-cultural heritage and it is necessary to promote their conservation in good condition: (d) propose routes that pass through different springs and to make known unusual spots. (http://www.parcnaturalcollserola.cat)
[41] For further details see: https://ramboll.com/projects/re/maabjerg_biomass_power_plant
[42] For further details see: http://www.snowchange.org

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Landscape Rewilding Programme rebuilds community- and Indigenous-relevant lands, forests, and waters into biodiversity hotspots, carbon sinks, carbon stores, and healthy environments. The Arctic and the boreal ecosystems are hardest hit by rapidly advancing climate change, yet the northern peatlands and associated forests contain at least one-third of the world's soil-based carbon. Using Indigenous and traditional knowledge alongside the latest science and research, the Landscape Rewilding Programme restores and rewilds landscape-wide degraded ecosystems, especially peatlands, in the boreal back to health. Biodiversity issues are immediately alleviated, carbon sinks start to function, and water pollution is reduced, improving the health and well-being of the communities. Snowchange Cooperative is also a worldwide network of local and Indigenous cultures, and their partners include the Saami, Chukchi, Yukaghir, Inuit, Inuvialuit, Inupiaq, Gwitchin, Icelandic, Tahltan, Maori, Indigenous Australian and many other local and Indigenous peoples and communities.

A remarkable example of gender justice is the case of the Women in Fisheries Society (TR), an NGO that works on improving fisherwomen´s rights while protecting coastal ecosystems[43]. The BUI has been selected as one of the promising cases of this research line. See the corresponding table at the end of the chapter.

3.2.6. Drivers and barriers of BUIs

It is worth to point out the following drivers and barriers. Some other drivers and barriers are the same described in RL1.

Table 4 – RL2 drivers and barriers table

Drivers Education increases the general public's awareness about the importance and value of the environment, fostering the idea that everyone needs to participate actively to address and solve the environmental problems of their own area, and the beyond.
Barriers Most environmentally-conscious initiatives face the resistance of various private and public actors whose current interests lie in different directions – be they political actors or businesses.

3.2.7. Selected inspiring cases

Many remarkable RL2 cases have already been mentioned in this chapter. However, the following cases were selected because they are examples of bottom-up initiatives that potentially present replicable policies for promoting pro-environmental behavioural change and the inclusion of vulnerable groups.

[43] For further details see: https://kadinbalikcilardernegi.org/women-in-fisheries-in-turkey/.

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Table 5 – Inspiring cases of RL2 table

Country Name / Website	Description
TURKEY ***Women in Fisheries Society*** **https://kadinbalikcilardernegi.org/women-in-fisheries-in-turkey/.**	The bottom-up initiative At least one out of every 30 fishers is a woman in Turkey. While women play a very important role in fishing, they face serious structural problems due to gender discrimination in the sector, like the perception of fishing as a “male profession” in society. "Women in Fisheries Society” is an NGO that works on improving fisherwomen´s rights while protecting coastal ecosystems. In 2017, the founding members helped form the Women Fishers Commission under the umbrella of Turkey’s largest fisher’s cooperative, which did not previously accept female members. Attracting even more support nationally and internationally, the group registered the Women in Fisheries Society as an NGO in 2019. Match of biodiversity and socioeconomic needs This BUI has three major goals: achieving gender equality, protecting marine and coastal ecosystems, and creating sustainable economic activities among fisher societies. They declare that women fishers have unique issues due to the dominance of patriarchal norms within the fishing communities. They argue that gender equality cannot be achieved without addressing biodiversity and sustainability issues; that is why they carry out a broad range of activities that include exposing the damage to marine and coastal ecosystems by illegal fishing, industrial fishing, and pollution.
BULGARIA ***Save Karadere*** http://forthenature.org/cases/13	*The bottom-up initiative* Its current platform is a Facebook group page with almost 10,000 members. Karadere is located between the town of Byala and the village of Gorica near the northern slopes of Stara Planina on the Black Sea coast. The area is wild, has no infrastructure, and is appreciated and visited by more and more tourists. Karadere falls within the boundaries of two Natura 2000 protected areas – Kamchiyska Planina and Shkorpilovtsi Beach. *Match of biodiversity and socioeconomic needs* Several activists contribute to this initiative, i.e., people who organise actions on a volunteer basis to (a) protect the beach from the building because one of the last preserved corners of natural beauty on the Black Sea coast, (b) organise protests in Sofia and other places in Bulgaria, (c) facilitate ecological assessments of the area, and (d) provide legal counselling and advice.
TURKEY **Muğla Environment Platform (MUÇEP)** **https://mucep.org**	Another interesting example is the Muğla Environment Platform (MUÇEP), a vibrant umbrella organisation composed of 32organisations (local seed exchange associations, medical associations, beekeepers assoc., local groups, and municipal committees) to defend ecological livelihood in the greater Muğla area. Muğla is one of the most visited tourist cities in Turkey hosting luxurious resorts, including the world-famous town of Bodrum. MUÇEP working group on the use of the coastal areas has protested against the commercialization of the beaches in the national parks in Muğla. Indeed, even though the constitutional clause guarantees

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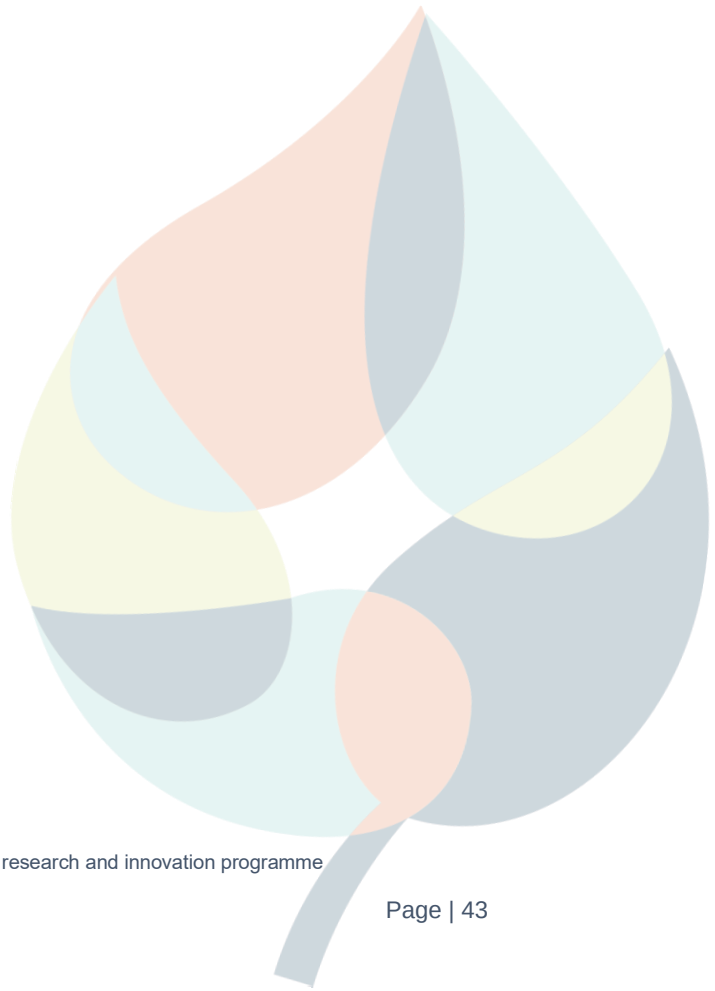
	access to all the coasts to the citizens, touristic establishments “occupy” coastal areas and illegally ban entry. In the 2021 wildfires, MUÇEP mobilised their networks to coordinate volunteers and to expand extinguishing and rescue efforts.



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3.3. Research Line 3: Energy communities and energy poverty

3.3.1. Mapping analysis of the BUIs

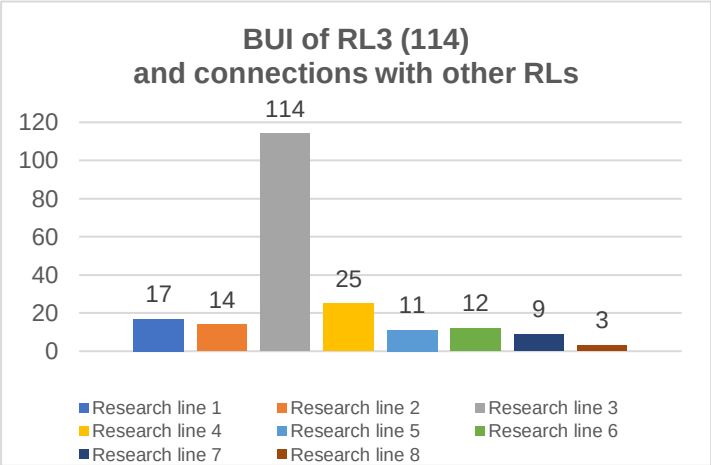

Figure 10 – Implication of RL3 with other RLs

The total number of BUIs analysed in RL3 is **114**. Analysing the researchers' responses, as shown in Figure 10, these BUIs do not appear to have extended relationships with other RLs; this would seem to suggest that the issue of energy communities is perceived as a stand-alone topic, probably because it is a rather recent type of initiative and not yet fully known by citizens and activists.

3.3.2. Degree of involvement of actors

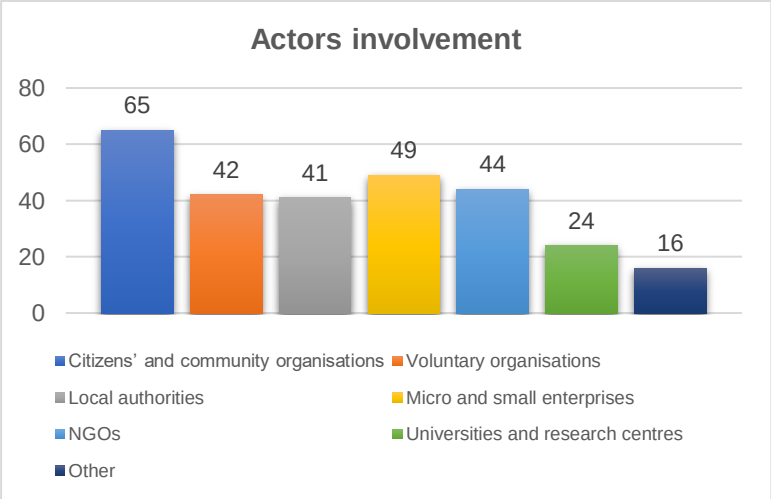

Figure 11 – Actors' involvement in RL3

In the 114 BUIs, a large spectrum of different actors of civil society are involved – **citizens and community organisations (65)**, **micro and small enterprises (49)**, **voluntary organisations (42)**, and **local authorities (41)**. This diversity seems to suggest a certain attractiveness of energy communities in society. This opportunity attracts interest not only from citizens, who are affected or concerned by the growth of energy poverty but also from societal organisations such as local institutions and companies. Figure 11 suggests a **considerable co-involvement of actors** (globally, 281 actors are involved, or an average of 2.5 actors per BUI).

Among citizens and community organisations, they are different remarkable cases. An example is LICHT Leuven (BE), an energy community project in the city of Leuven, Flemish

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Brabant, that is focused on the **residents' transition to renewable forms of energy**. It was founded by the citizens' cooperative Ecopower, the City of Leuven, and the local non-profit organisation Leuven 2030. LICHT is an abbreviation in Dutch for "Local Initiative for a Cooperative Renewable Transition". The BUI tries to achieve this goal by focusing on three objectives among its members: (1) saving and conserving energy, (2) locally generating renewable energy, and (3) getting the neighbourhood involved regardless of membership or prior involvement. The university town of Leuven is home to about 100.000 people and 60.000 students. In terms of income, a lot of households are well off, but there is still a stubborn element of poverty in the city[44].

Another interesting initiative is led by the non-profit organisation Revolusolar (BR) aiming to foster sustainable development in **low-income communities** through solar energy. They currently operate in Babilônia and Chapéu Mangueira favelas in Rio de Janeiro[45]. The team is composed of 15 employees and 50 volunteers` inhabitants of the Babilônia and Chapéu Mangueira favelas in Rio de Janeiro. The leading actors are a multi-disciplinary group of professionals and volunteers with several partnerships with solar energy companies, universities, enterprises, bilateral organisations, local governments, law firms, and community organisations. 3 individual installations in 2 small businesses, one in a community school, and another in a neighbours' association, providing energy to 34 families that make up the first solar energy cooperative in a Brazilian favela. The BUI has also trained 30 locals as electricians and installers, besides teaching children and adolescents sustainability workshops.

Another interesting case is the Hvide Sande Model[46]. Hvide Sande is a small port village of around 3,000 people, situated on the east coast of Denmark on the small strip of land between the North Sea and Ringkøbing Fjord. The Hvide Sande Wind Farm, on a beach next to the small port town of Hvide Sande, is owned by the local community foundation, with profits from the turbines financing local regeneration. The project was established as a response to what was seen as the increasing commercialisation of the wind industry in Denmark. We would also mention the Claremorris and Western District Energy Co-Operative which has been founded to develop the benefits of community-owned renewable energy, supporting communities, and addressing climate change in the West of Ireland[47]. With over 50 members and the support of local groups, associations, and small enterprises, the energy cooperative has achieved valuable knowledge in the development of a local energy distribution as well as contributing to national policy.

Returning to the analysis of the BUIs, the **local authorities' role,** however, cannot be downplayed. For example, it could be seen in the case of the Papillon Project, an initiative led by the non-profit organisation SAAMO West Flanders (BE) that rents out **energy-efficient household appliances** at a low price to low-income households struggling with energy poverty, enabling them to save on their energy consumption and energy bills in an eco-friendly way[48]. For a monthly rate of 7 euros for ten years, Papillon provides household appliances with an EU energy label of A++ or A+++ to families. The devices remain the

[44] https://www.lichtleuven.be
[45] https://revolusolar.org.br/babilonia-e-chapeu-mangueira
[46] https://folkecenter.wordpress.com/hvide-sande
[47] https://www.clanncredo.ie/community-loan-success-story-claremorris-energy-co-op
[48] https://www.radicalevernieuwers.be/inspiratie/papillon-project

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property of the partnered corporation (Bosch), which provides maintenance (covered by the monthly rate) and a warranty. At the end of the 10-year rental period, the devices are either reused/refurbished with the help of a third partner or recycled. The Flemish Government subsidises the monthly rate of €2 per appliance per month (subject to an unspecified maximum budget), and the Federal Government is exploring ways to integrate the project into policy. As part of the Papillon Project, SAAMO also advises households on how to interpret energy bills and how to reduce energy costs even further.

Noteworthy also seems to be the role of **European institutions** in supporting and funding the spread of energy communities. This is the case of Tackle Energy Poverty (STEP)[49], an H2020 project to develop a simple, innovative, and replicable model of measures to address **energy poverty**. The project covers some countries with the highest rates of energy poverty in Europe. These are Bulgaria, Cyprus, the Czech Republic, Latvia, Lithuania, Poland, Portugal, Slovakia, and the United Kingdom. STEP's overall objective is to alleviate energy poverty by encouraging behavioural change and low-cost energy efficiency solutions among consumers in or at risk of energy poverty through trusted, tailored advice.

Finally, under the "other" category, we would like to point out the occurrence of **international organisations** in many initiatives. A first example is the case of Habitat Bulgaria, which is part of the large network of "Habitat for Humanity", a global non-governmental organisation operating in all 50 states in the US and over 70 countries worldwide. The organisation has long-lasting relationships with numerous initiatives for the Roma people in different regions of Bulgaria (Dupnitsa, Targovishte, Kyustendil, Sofia, Sliven, Rakitovo, Burgas, and Sungurlare). With their current project, "Access to Energy Renovation", Habitat Bulgaria wants to address the severe situation of energy poverty in Bulgaria, focusing on socially and ethnically vulnerable groups[50]. A second example is EKOenergy (FI), an international no-profit ecolabel for energy (renewable electricity and gas, heat, and cold). In addition to being renewable, the energy sold with the EKOenergy label fulfils additional sustainability criteria and finances projects that combat energy poverty. This way, the EKOenergy ecolabel brings additionality to renewable energy certificates such as Guarantees of Origin (GOs), Renewable Energy Certificates (RECs), and International Renewable Energy Certificates (I-RECs)[51].

[49] https://www.stepenergy.eu/about-step/
[50] https://hfh.bg/en/access-to-energy-renovation-2
[51] https://www.ekoenergy.org. The Greenhouse Gas Protocol, LEED for green buildings, and CDP describe the EKOenergy ecolabel as a good solution for consumers that want to be more sustainable. By using the ecolabel as a tool to promote the most sustainable forms of energy and to raise funds for additional climate and biodiversity protection, the aim is to taking actions to achieve major policy changes truly needed in society.

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3.3.3. Initiatives' effects on vulnerabilities

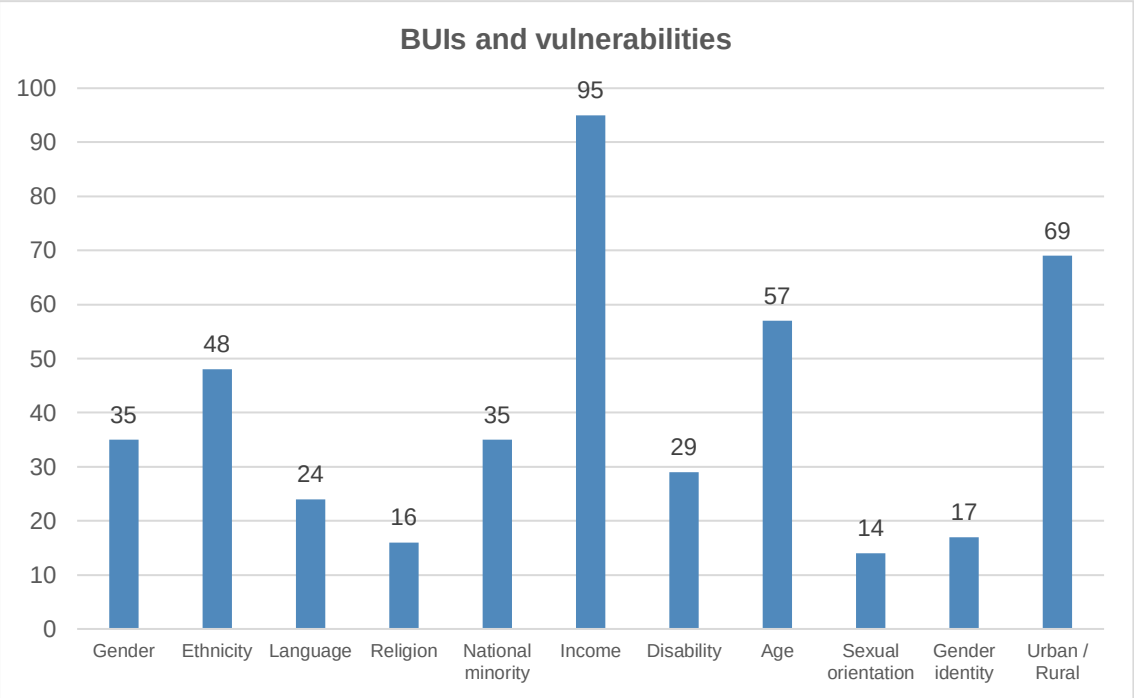

Figure 12 – BUIs and vulnerabilities in RL3

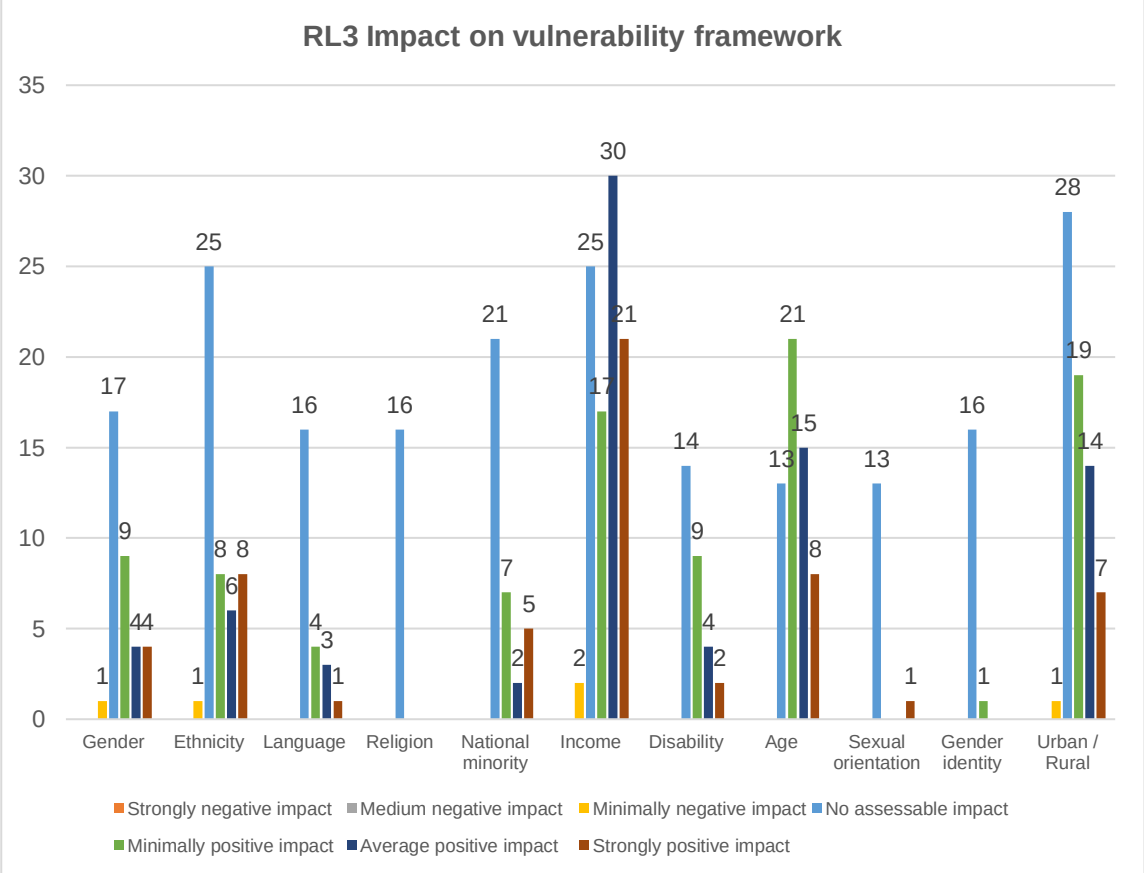

Figure 13 – Impacts of BUIs on vulnerabilities in RL3

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Figures 12 and 13 show that the positive impacts far outweigh the negative impacts, and the areas most targeted by the BUIs and with the greatest positive impact are: **Income**; **Urban / Rural**; **Age**.

From the graphs, the data that emerges, at first sight, is the high number of initiatives (95/114) that the researchers evaluated as having an impact on the vulnerable aspects connected to **income**.

This is not surprising considering that the BUIs were specifically selected to target cases of community energy schemes benefiting energy-poor households. Energy poverty is remarkably correlated with low-income and elderly households; further, rural areas often host low-income communities of elderly citizens. A further examination of data confirms this understating. Indeed, **income** and **age** (59) are the only two vulnerabilities in this RL in which at least one of the positive evaluations overcomes the impossibility of expressing an evaluation. Income: "*average positive impact*": 30; "*no assessable impact*": 25. Age: "*minimally positive impact*": 21; "*no assessable impact*": 13.

3.3.4. Implementation dynamics

Most of the implementation dynamics appear to be linked to **energy poverty**, understood mostly in an economic sense.

Against this backdrop, energy poverty calls in a sub-topic: stigma's role in **anti-poverty policies**. The stigma (and the consequent shame) experienced by people in energy poverty appears to lead to social exclusion, limited social capital, low self-worth, and a lack of agency that could contribute to prolonging poverty. An interesting case is Stromspar-Check (SSC) (DE), a joint initiative by the Deutsche Caritasverband and the Association of Energy and Climate Protection Agencies in Germany[52]. The initiative has several goals. On the one hand, electricity consumption in low-income households shall be minimized to reduce their financial burden and minimize the stigma of poverty. Simultaneously, long-term unemployed people are given the chance to re-enter the workforce as SSC advisers. SSC advisers are formerly long-term unemployed individuals who completed extensive training; they therefore have good opportunities to understand the clients' difficult financial and social situation and might credibly advise them as equals. SSC advisers visit households that signed up for a check, and a database calculates potential savings. SSC advisers then give practical tips on how households can save energy simply by changing their behaviours and installing energy and water-saving devices ("immediate aids") such as LED lights, time switches, water-saving shower heads, etc.

Another dynamic that seems to emerge regards the cooperative model. Many energy communities are organised in the form of **cooperatives**. Among the many examples, remarkable is the case of the "Energie Solidaire" initiative and the Enercoop (FR)[53]. This citizen-led initiative aims to collect funds to fight fuel poverty and distribute them via a call for projects to organisations carrying out concrete programmes to fight fuel poverty. The association receives operational support from the energy supplier Enercoop and the

[52] www.stromspar-check.de
[53] https://www.energie-solidaire.org/

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citizens' association “Les Amis d'Enercoop”, which is at the origin of the initiative. It receives technical support and expertise from several actors in the fight against fuel poverty, such as the Abbé Pierre Foundation. Micro-donors (citizens and producers) are also supporting the BUI. Launched in 2005 by French ecological and ethical business organisations, Enercoop is a 100% cooperative green energy supplier. Based on the cooperative model, Enercoop can gather among its members’ producers and consumers of green electricity and key partners, all willing to work together to promote renewable energy and rational energy use. In 2015, the cooperative had a total of 15000 members and 22000 consumers.

The analysis of the initiatives also seems to underline the importance of connecting the discourse on **energy poverty** with **educational programmes**. This is the case of ScOLARGeno (DE), an educational project to promote public welfare and a climate-friendly economy by empowering students to establish a students’ solar cooperative through which they can design and operate their photovoltaic systems[54]. The project teaches young people to found student solar cooperatives, highlighting the opportunities for conversion to renewable energy, combined with savings of climate-damaging CO2.

In many countries mapped, our researchers reported that **energy communities are still in their early stages**. Against this backdrop, some initiatives stand out more for their work-in-progress character, as potential energy communities. An interesting case here has been mapped in Czechia. At the demonstration “Parents for Climate” held on 16 May 2019 in Liberec, inspired by similar events in Czechia and abroad, many parents, grandparents, and non-parents gathered and shared worries about the future of humankind and the environment. This event led to the organisation of an initiative in 2020 whose goal was to point out environmental problems of the city, raise awareness concerning the climate crisis and initiate a change not only at the political level[55]. In only a few months, different goals were achieved: establishing a Climate council, creating a position of an energy manager[56], and initiating a Climate change adaptation plan[57].

Precisely because of the novelty of the energy community, many of the initiatives can be grouped as **awareness campaigns**. This is the case, for example, of “Age Action”, a campaign for a new energy poverty strategy for climate justice for older people in Ireland. The NGOs call for sweeping cross-Government action to eliminate energy poverty and reduce Ireland’s polluting emissions by 51% by 2030[58]. Another example is “Omställningsnätverket” (the “Transition Network”), a non-profit association that works to educate, encourage, and support local transition initiatives in Sweden. For this, they hold courses, spread information, and organise annual conferences throughout Sweden[59]. Also remarkable is the “Indigenized Energy Initiative”, which aims to diminish energy poverty, mitigate climate change, and create thriving American Indian communities with the clean and regenerative power of solar energy[60].

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54 https://www.fesa.de/wp-content/uploads/2018/11/Scolargeno_Projektbeschreibung_2019.pdf
55 https://www.liberec.cz/cz/radnice/dalsi-organy-mesta/odborne-pracovni-skupiny/rada-pro-klima.html
56 https://www.rodicezaklimaliberec.cz/l/energeticky-manazer-cesta-k-uspornejsi-a-zodpovednejsi-energetice-obce/
57 https://zivotni-prostredi.kraj-lbc.cz/sucho-a-retence-vody
58 https://www.ageaction.ie
59 https://omstallning.net/
60 https://indigenized.energy/

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3.3.5. Justice

The most common demand for justice in many initiatives appears to be the distributive idea of fairness, mainly preoccupied with fighting (actual or forthcoming) **energy poverty**. From the analysis of the mappings, it appears that many energy communities are born with this purpose, regardless of whether they are initiatives wholly guided by citizens or supported by local authorities. **Low-income families** are a very present target group in the initiatives. However, this category is often declined in an intersectional way with other types of vulnerabilities, such as **Roma populations, migrants**, and **migrant women**.

An interesting example is Coöperatie GOED, an energy cooperative with over 300 members[61]. Originating in the city of Groningen in the north of the Netherlands, it pays out the proceeds of self-generated energy to people who have difficulty paying their energy bills. The purpose is to combat energy poverty. The case of Coöperatie GOED revolves around energy profit sharing and is aimed at the financial (re)distribution of welfare in society. This is done by sharing all profits of its collective solar panels with poor citizens. Profits that are earned through the disposal of renewable electricity are distributed amongst selected low-income residents, who will benefit from € 10 monthly.

In the context of migrant woman, a remarkable example is Peregrina – Klimaschutz im Alltag für Migrantinnen (AT) climate protection in everyday life for migrant women – one of the first self-organised Viennese support organisations for immigrant women[62]. Founded in 1984 as the “Association of Women from Turkey and Austria in Solidarity”, Peregrina has been supporting immigrant women and their families in their legal, social, and linguistic affairs ever since. The project of this BUI aims to raise migrant women's awareness of climate protection measures in everyday life to improve their quality of life and promote their participation in key environmental and socio-political issues. Climate protection is central to the integration of migrant women because a good life not only includes financial security, equality in the labour market, and political participation, but also an intact environment and health. The topic of climate protection is ideal for transcultural exchange, as it is a common goal for all people.

3.3.6. Drivers and barriers of BUIs

Without claiming to be exhaustive, some barriers and drivers emerge from the analysis of the BUIs

Table 6 – RL3 drivers and barriers table

Drivers: ○ The citizens’ organisations that have the advantage of having previous **knowledge and experience** in energy matters enable the emerging energy communities to anticipate certain obstacles. Indeed, from our analysis, it seems

[61] https://www.cooperatiegoed.nl/
[62] https://partizipation.at/

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that it is difficult to get households to take action in favour of the creation of an energy community due to limited knowledge and experience of the topic.
The presence in the initiatives of an "energy coach" seems to be a driver in supporting local citizens with low income with their energy bill, training and sharing knowledge on how citizens can reduce their energy costs, providing support to the less literate people in digital knowledge on how to use the interactive tools of the energy communities. The energy coach has been introduced, for example, in the "Actiegroup Oude Westen" ("Action Group Oude Westen"), an old citizen's initiative in Oude Westen in Rotterdam (NL), a culturally and ethnically diverse neighbourhood built in the 19th century[63]. This circumstance highlights the importance of **knowledge** and **information** as drivers to develop sustainable energy lifestyles. Another example is offering digital and interactive tools such as apps, which could be used autonomously, raising **awareness** among citizens with information about their consumption and the possibility of saving. Further examples to trigger these drivers include linking the initiatives to educational programmes, allowing a complex subject, such as energy, to be understood by young generations.

- Mainly at the beginning, energy communities experience some difficulties in growing since their few members do not have the **ability to attract investment**. As some initiative shows, an opportunity to trigger this driver can be to establish a partnership with similar cooperatives from other European countries to obtain the necessary funds to proceed with the first projects. This has been the case with the Coopérnico cooperative in Portugal[64].
- **Public policies, national legislation, and public support schemes** are powerful drivers that can support the birth of community energy schemes. As we could see with the case Stromspar-Check (SSC) (DE), the Association of Energy and Climate Protection Agencies in Germany, which are publicly funded bodies, played a pivotal role in collaboration with the voluntary sector to generate this initiative.

Barriers:

- **Stigmatization of poverty** in broader society is still perceived by the citizens as the main challenge in reaching a wider impact from the bottom-up initiatives. This social stigma can produce an increase in fear of asking for technical support and information with energy challenges.
- It is always a challenge to collect **data and** transparency of **information**, be it of personal nature, such as knowing which is the person's situation or if they have

[63] https://aktiegroepoudewesten.nl. Oude Westen and active citizens of the neighbourhood are involved in several initiatives and activities related to creating a sustainable neighbourhood, including fighting energy poverty. According to the report of the municipality of Rotterdam, roughly 56% of the inhabitants of Oude Westen have a non-western migration background, roughly a third of the inhabitants of this neighbourhood have a low income and roughly 80% of the inhabitants live in rented apartments. Actiegroep Oude Westen has specific initiatives to help people with low income, reduce energy poverty, and be an integral part of the energy transition. First, Actiegroep Oude Westen uses energy coaches. Energy coaches support the local citizens with low incomes with their energy bills. In particular, the energy coaches instruct and share knowledge on how they can reduce their energy costs.

[64] Coopérnico is the first cooperative in Portugal dedicated to sustainable development and selling renewable electricity. It was founded in 2013 by a group of 16 citizens from different professional areas and with different backgrounds. Since then, many more citizens have joined Coopérnico and participate in its activities and in the management of the cooperative. Currently, the cooperative has 2394 members. https://www.coopernico.org.

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accumulated debt, their judicial records, etc., or be it of legislative and market nature. This barrier is crucial. Data are needed to prove the value of energy communities and to justify denouncing and pressuring authorities or explaining the situation and changes in the market, regulatory measures, or providing aid to people, etc. Many initiatives declare the need to systematize rigorous information.

- In some countries, there is still a **vague notion about the "energy community"** and how these green initiatives could help vulnerable groups. Mostly green initiatives are viewed as expensive activities which will pay off after a long time, if at all. This explains why, currently, energy cooperatives are affordable for the middle class, while mostly vulnerable groups still rely on non-renewable energy sources, solid fuels, and electricity. This is the case of Elektropionir Energy Cooperative (SC)[65].
- Another obstacle seems to be that the **energy sector** in some countries is structured as an **oligopoly**. The big energy companies dominate the market with their profit-oriented approaches. This might make it difficult for small energy communities based on renewable energy production to enter the market.
- Energy communities sometimes seem still to be excessively centred on the logic of experts vs. laypeople. In this way, **paternalistic attitudes** might dominate the projects and limit the participation of laypeople and vulnerable individuals. Robust mechanisms of participation need to be in place to avoid this risk materialising.
- Older and less digitally literate people need support to use the apps and the available interactive resources. Highlighting how **old age** and **lack of digital literacy** can be significant barriers to participation.

3.3.7. Selected inspiring cases

Many remarkable RL3 cases have been already mentioned in this chapter. However, the following cases were selected because, in our opinion, they are examples of bottom-up initiatives that potentially have the characteristics of presenting replicable policies for the promotion of pro-environmental behavioural change and the inclusion of vulnerable groups.

Table 7 – Inspiring cases of RL3 table

Country Name / Website	Description
NORWAY ***Experimental Housing, Svartlamon, Trondheim*** **https://www.youtube.com/watch?v=dLfvDMr7ZYc**	**The bottom-up initiative** The project traces its roots back to 2013, when Trygve Ohren and Haakon Haanes, who together with Cathrine Johansen Haanes is Nøysom arkitekter, decided to initiate a self-build project at an unused "experimental site" at Svartlamon[66]. During the next two years, the architects continued to develop the concept with

[65] The Elektropionir Energy Cooperative was created with the idea of being one of the key actors in empowering ordinary people to participate more actively in the transition of the Serbian energy sector to renewable energy sources (https://elektropionir.rs)

[66] Svartlamon is an alternative district that describes itself as "a gathering of houses in a little place called Lademoen northeast of the center of Trondheim, a city in Norway". Most of the houses were built at the end of the 19th century or the beginning of the 20th century, https://en.wikipedia.org/wiki/Svartlamon.

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	participation from the residents at Svartlamon, and later by themselves before the actual building started in 2015. Before New Year 2018, after five years of planning and building, everyone had moved in. **Energy poverty and community energy schemes** The concept is a versatile architectural framework of five compact row houses connected with a common house, that the self-builders would be able to adapt to their own needs and preferences using what they could find of discarded or reused materials and components. The main design criteria were that the houses would be able to be built easily without specialists (except the plumbing and electricity), that they would fit into the existing structure of low-rise wooden buildings at Svartlamon, and that they would have a low ecological footprint. The project is essentially a comment on and critique of the notion that a sustainable lifestyle is something you can buy, and that sustainable architecture is all about technological solutions to increase energy efficiency while continuing our unhealthy addiction to ever-increasing consumption. Sustainability is about being able to adapt to one's environment using the available means. The project represents an attempt to respond concretely to energy poverty and, at the same time, also promoting social cohesion and inclusion. The cooperation between the citizens of the Svartlamon district and the mutual exchange of professionalism has made it possible to improve the energy quality of the buildings at a reduced cost and in a shared manner.
FINLAND ***Energy Community of Ii*** **https://ii.fi/kestava-arki**	**The bottom-up initiative** Over more than a decade, the approximately 10,000 residents of the municipality of Ii have reduced their municipality's emissions by 80 percent. Ii's municipal economic development strategy was revised after its previous tech-driven economy fell into crisis. Decision-makers took the important decision to stimulate the economy through sustainable means, as climate efforts were not seen as putting the brakes on business. The success of the reduction was due to the joint efforts of the whole municipality working to reduce carbon emissions. Residents were asked for their ideas and input on the design of green services. The views of different age groups were heard in different ways. Through strategic efforts, renewable energy has become an important sector for the local economy, complementing various other industries (e.g., the rubber, plastics and packaging, construction, fine mechanics, and metal industries). **Energy poverty and community energy schemes** The community has stopped using oil heating and all public municipal-owned properties have switched to local energy sources, such as geothermal heating. • Ii has improved the circulation of goods and materials intending to be waste-free. • Every year, Ii holds a national climate festival – ClimateArena – to seek solutions to climate change with the help of society as a whole. • 64% reduction of carbon emissions (2012-2020), Municipal electricity reduced by 4% between 2014-2020

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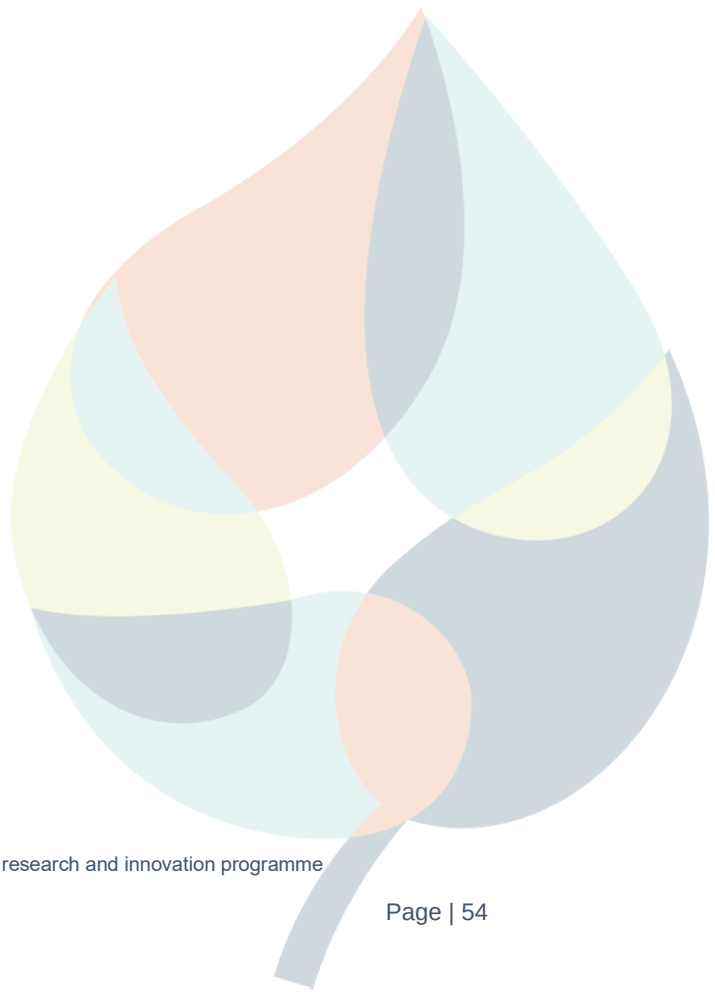
	• Ii has managed to cut down oil consumption by 89% from 2010 level. Energy, heat and water data are collected in real-time from all public buildings. Cost savings of renewable energy and energy efficiency investments are more than 0,5 M€ per year and as the payback time has been around six years. Tax revenue income from wind power is 1M euros per year.



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3.4. Research Line 4: Energy-efficiency measures and pro-environmental behaviours in small/micro enterprises

3.4.1. Mapping analysis of the BUIs

Under this Research line, BUIs were mapped that concerned both energy-related measures and other pro-environmental behaviours, such as recycling and waste management, reductions in emissions from cultures/livestock, etc. In some cases, integrated measures are adopted, while in some others the BUI specifically focuses on one type of pro-environmental measures.

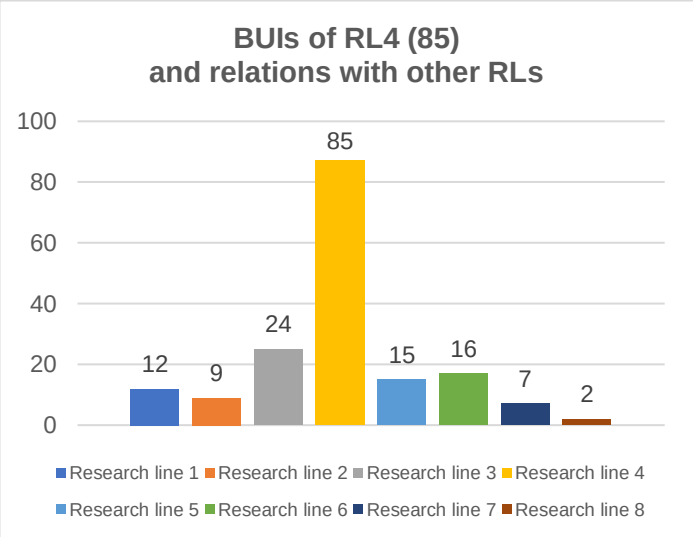

Figure 14 – Implications of RL4 with other RLs

The total number of BUIs analysed in RL4 is **85**. Analysing the researchers' responses, as shown in Figure 14, some relevance to several other BUIs appears.

The RL that emerges as closer, which in some cases overlaps with RL4 is RL3, "*Energy communities, energy poverty and community energy schemes*" (**24** cases), as some of the enterprises mapped under RL4 deal with different forms of community-level energy schemes.

The two food-oriented research lines, RL5 ("*Food safety and health*", **15**) and RL6 ("*Environmentally sustainable food consumption*", **16**), also show several overlaps with RL4 still connected to the products that are commercialised by the enterprises, in these cases connected to sustainable, safe, and healthy food. The same is true for RL1 ("*Valorising local knowledge in the frame of the community-based disasters' management and mitigating exposure*", **12**), where green businesses and social cooperatives are formed to protect the local environment, often engaging with traditional agriculture and local knowledge of the territory.

In these cases, the connection across the RLs is very strict, and synergies in research and policy for the inclusion of vulnerable groups and the promotion of behavioural change are recommended.

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3.4.2. Degree of involvement of actors

Besides **micro/small enterprises** (**75**)[67], the main involved actors in the 85 BUIs examined in RL4 are **citizen and community organisations** (**34**), followed by **local authorities** (**25**), **NGOs** (**22**) and **voluntary organisations** (**21**). These results, highlighting the role of the third sector, are mostly connected to the fact that social enterprises are significantly represented in the panel of BUIs that have been collected and analysed. **Universities and research centres** (**15**) are also involved in a non-negligible portion of cases, strengthening the group of non-profit actors.

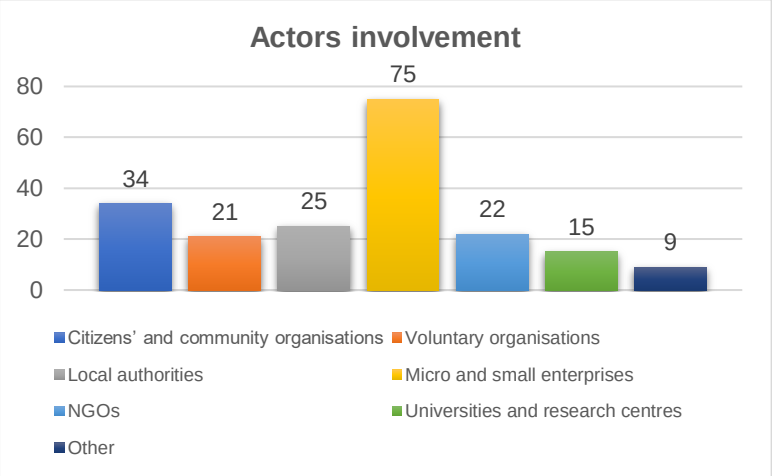

Figure 15 – Actors involved in RL4

Even though this research line focuses on **micro/small enterprises**, which are mostly represented in the panel, many BUIs show a relevant co-involvement of actors (globally, 201 actors are involved, or an average of 2.3 actors per BUI). Therefore, the significant prevalence of micro/small enterprises in Figure 15 also reflects that groups of actors tend to be jointly involved, many belonging to different entrepreneurial categories. A minority of cases, instead, feature a single promoting enterprise.

Considering the specific nature of this research line, an important element to analyse is the **profit or non-profit nature** of the analysed BUIs. In fact, in RL4, BUIs coincide with an actor or a group of actors managing economic activities **with different aims and using different juridical forms**.

Indeed, a different picture can be drawn if the BUIs are considered from a more substantial point of view beyond their (or their promoting actors') formal legal status (enterprise, business consortium, social enterprise, cooperative, social cooperative, civil society organisations (CSO), NGO, etc.). By assessing their mostly profit or non-profit nature, we find that **more than three out of four initiatives have a prevalent non-profit profile, even when their promoters are formally classified as enterprises**.

We, therefore, have two main types of BUIs and a broad grey area. The **first type** includes those BUIs with a clear non-profit aim. NGOs, CSOs, voluntary organisations, and, sometimes, universities and research centres mostly feature as the leading actors. These BUIs may take the form of social cooperatives or social enterprises, networks, or associations and are frequently supported by different kinds of **public authorities**, mostly at the **local** level, but in some cases also at the **national** or **European** level, for instance,

[67] The fact that in the promoting groups of 10 BUIs no micro/small enterprise was listed mostly depends on national-level legal regulation of associations, partnerships, and cooperatives.

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through funded projects. The prevalent non-profit aim of these BUIs does not prevent for-profit enterprises from being included as partners, often providing goods and services, sometimes at moderated fares/prices.

As an example of a BUI in this category, also involving micro/small enterprises, UltiMat non-profit association and food cooperative can be mentioned, initiated by Ultuna Student Union in Uppsala (SE)[68]. It works for sustainable food consumption and production in various ways. Their main engagement consists of ordering and distributing environmentally friendly food without intermediaries from local farmers to their cooperative members. The products are supplied by 16 different producers in and close to Uppsala. These are chosen by three criteria: locally produced, environmental care and animal welfare and no intermediaries. In this BUI, beyond the leading food cooperative, micro/small enterprises are involved (i.e., the farmers).

The **second type** includes micro/small enterprises, ranging from forestry, agricultural, and craft enterprises, green enterprises in different sectors (energy production, packaging, waste management), technological start-ups, and small manufacturing businesses (e.g., bike producers). In this category, business clusters and consortia are also included, whose primary aim is linked to the profitability of the associated enterprises. Despite the prevalent for-profit aim of this kind of BUIs, **CSOs**, **NGOs**, **voluntary organisations,** and non-profit groups, in general, are frequently involved, sometimes as partners, often as beneficiaries of activities in a Corporate Social Responsibility perspective (for instance, local communities in territorial energy schemes). **Universities and research centres** are also sometimes part of BUIs led by micro/small profit-oriented enterprises, notably in energy-related sectors or technological start-ups, but also in agriculture and livestock enterprises.

As an example of this second category, Cooperativa Speranza (IT)[69] operates mainly in the livestock sector and sells its products directly to the public while cooperating with a research centre in the medical sciences. The company brings together eight enterprises that can draw on common technological resources and machinery. With a view to the circular economy, the decision to install two biogas cogeneration plants has enabled the company to obtain new electricity for its needs and to supply hot water and heat to the nearby Candiolo Cancer Research Institute. In addition, the company also sells liquid biomethane to 25% of the vehicles of the Maganetti Group, a historic Italian industrial transport company, and sells the carbon dioxide resulting from the biogas purification process to a technical gas company and local mineral water bottling company. The remaining biomass is separated, forming a compost and mineral fertiliser that returns to the fields, exactly where the cycle began.

Even though the profit/non-profit divide is quite useful in understanding the main purposes and features of the BUIs, and the roles the different actors play within them, there is also a grey area, with several examples where the **group of promoting actors** is highly diversified and the dividing line somewhat blurred. This is frequently the case with energy-related BUIs where **local authorities** take the lead, strongly involving SMEs, as well as citizens' associations, as in the case of Smart Energi Hvaler/SEH (NO)[70] , which is "a joint venture

[68] https://www.ultimatultuna.se/english/
[69] https://www.comunirinnovabili.it/cooperativa-agricola-speranza/
[70] https://smartenergy.ax/

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by Smart Energy Markets (a research organisation), Fredrikstad Energi (the local ESCO/DSO), and the Hvaler municipality. Operating on the island municipality of Hvaler, SEH showcased a demonstration project on residential PV systems in combination with prosumer market models and novel consumption monitoring and control systems.

BUIs based on **national or European projects** also typically blur the dividing line between profit and non-profit aims bringing together very diverse groups of actors, as in the case of the Communities 4 Climate Action project[71], funded under the EU LEADER programme, where local authorities, SMEs, voluntary organisations, and CSOs cooperate to deliver free climate action training courses to local community groups and enterprises to help build climate action capacity in Ireland's counties.

3.4.3. Initiatives' effects on vulnerabilities

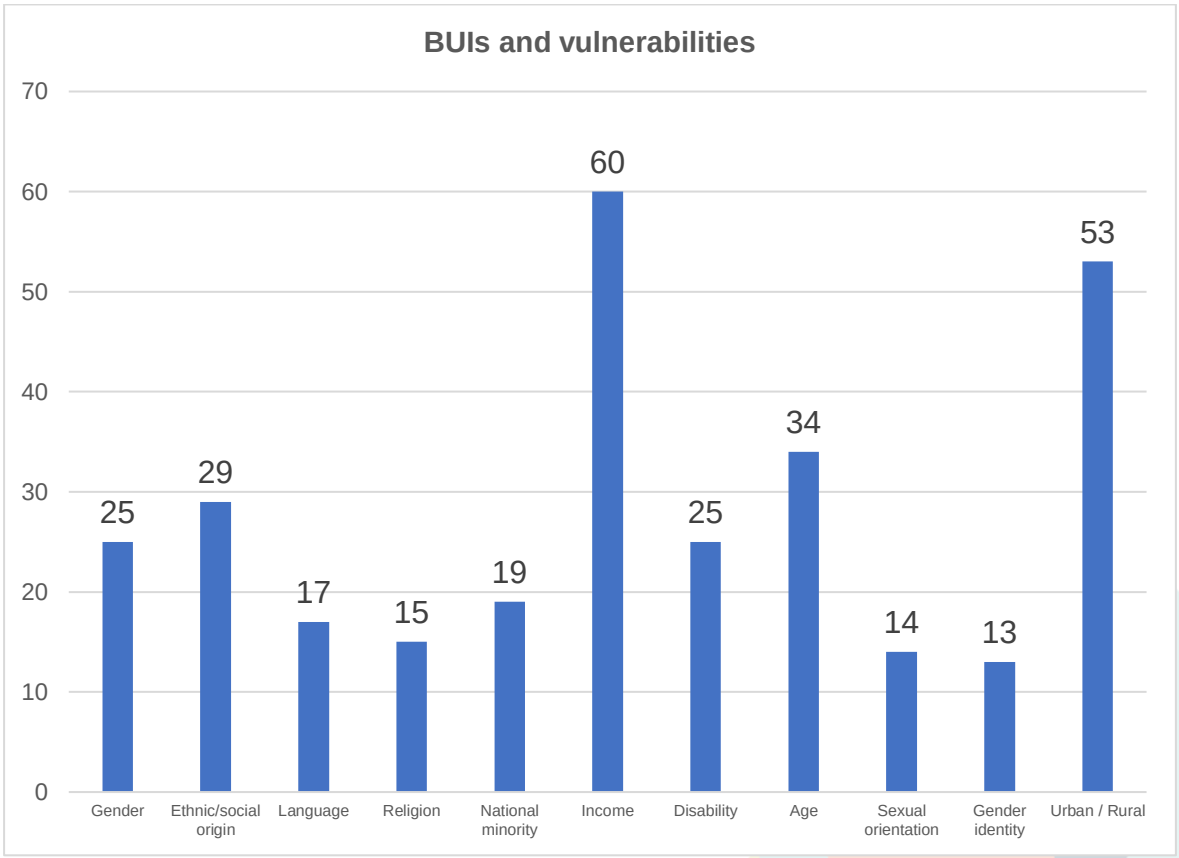

Figure 16 – BUIs and vulnerabilities in RL4

The graphics (Figures 16 and 17) shows the distribution of the 85 BUIs mapped on the various vulnerability categories, showing that **income** is more frequently mentioned, while also the **urban/rural** category scores high, probably depending on the focus of several BUIs, trying to overcome poverty and isolation in rural marginal areas. Initiatives with the potential to impact vulnerabilities connected with **Age**, **Ethnic/Social origin** and **Gender** are also well represented. Regarding impact (Figure 17), in most cases it was not possible

[71] For further information see: https://www.esdtraining.net/c4ca

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to detect it, as the mapped initiatives were still in progress. The most significant positive impacts occur in the same areas identified in Fig. 16: Income, Urban/rural, Age, Ethic/Social origin and Gender. The only mention of a slightly negative impact is recorded in the area of Gender.

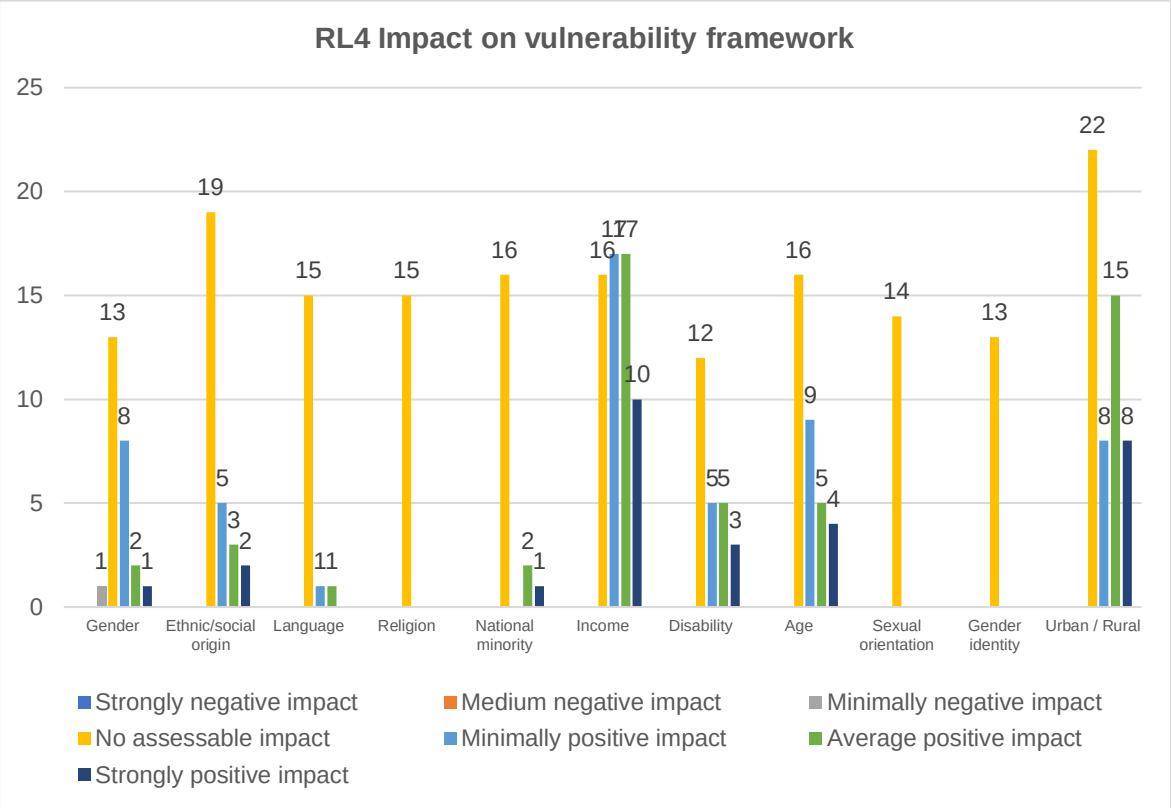

Figure 17 – Impacts of BUIs on vulnerabilities in RL4

3.4.4. Implementation dynamics

From the mapped BUIs, some **implementation dynamics** emerge that fit within the ACCTING conceptual framework (see Section "ACCTING: Concepts & Methods"). These dynamics would need further primary research and in-depth analysis, which, limited to selected cases, will be conducted in WP3. Nevertheless, in subsequent paragraphs, the essential elements of these dynamics will be outlined and discussed.

In this research line, implementation dynamics are strongly shaped by the prevalence of profit or non-profit aims in the mapped BUIs and their main promoting actors. Some of these dynamics are briefly described below, with no claim to the exhaustiveness and pointing out that – even if some recurrent types are roughly sketched – the mapped BUIs tend to defeat any attempt at classification.

Bearing this in mind, the first type of dynamics can be identified as characterising – in the non-profit area – the more socially-oriented BUIs. In this case, economic activities are implemented by organisations for self-financing purposes and/or to create employment and social **inclusion/integration opportunities for vulnerable groups**, such as the disabled, former drug addicts, and migrants. These kinds of initiatives generally tend to highlight the

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link between social and ecological objectives as related and mutually supportive by promoting the environmental sustainability of their activities and disseminating or educating on environmental values.

The case of "Oaza Golubinci" (Oasis Golubuinci)[72], in Serbia, can be mentioned as just one of many examples in this group. It is a social cooperative in a rural area, providing employment and housing with support for people with mental disabilities and other vulnerable and at-risk groups. The cooperative promotes several small-scale social integration initiatives within an environmental framework. Cooperative members, for instance, participate in recycling activities. A network of 200 companies, institutions, and individuals provide recyclable material to the cooperative, and collective members are engaged in the collection, delivery, primary processing, and shipment of secondary raw materials (plastic packaging, paper, cans) in recycling containers.

Still, **in the non-profit area, another type of dynamics characterises BUIs that focus on participatory community development/regeneration** activities in urban and rural areas. Here the emphasis is on local communities, although specific vulnerable groups may be targeted. Energy communities and energy schemes are generally in this group, as well as forestry or agricultural projects, community gardens, etc. Social objectives are still at the forefront, but ecological concerns and nature protection gain more centrality.

As regards energy schemes, Coopérnico[73] is a social cooperative in Portugal dedicated to local development and production of renewable electricity, whose vision is to involve citizens and companies in the creation of a renewable and decentralised energy paradigm. It was founded in 2013 by a group of 16 citizens (now they are 2,394) and aims at creating green jobs at the local level and promoting the transition to a more sustainable local economy. Revenues from selling energy are attributed partly to the social economy and educational projects.

Moving to **the for-profit area**, several mapped BUIs concern green businesses of different kinds whose **entrepreneurial activity is directly based on environment-related issues** (recycling/ upcycling, ecological building. organic farming, biological bakeries, restaurants or cafés, etc.). Social concerns may or may not be a relevant focus in this case, even though it is often the case. Migrant communities, for instance, run some biological farms or restaurants – thus supporting their economic integration – highlighting food qualities/natural origin and cultural authenticity and preservation[74]. In other cases, the link with social aims is more directly established, for instance, by distributing products to non-profit associations or employing vulnerable people.

An example is the agricultural enterprise "Le Selvagge"[75] (IT), commercialising eggs from organic laying hens reared in the wild, guaranteeing them a life in harmony with nature. The farm has made significant electric mobility investments to deliver products while protecting the environment and recycling whatever is possible. While promoting eco-sustainability, it

[72] https://zivimozajedno.rs/oaza-golubinci/
[73] https://www.coopernico.org/
[74] See, for instance, the Moltivolti Restaurant: https://moltivolti.org/
[75] https://www.leselvagge.it/

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cooperates with Caritas, the friars, welfare canteens, and the local hospital and employs disabled youth.

In the for-profit group, there are cases where the entrepreneurial activity does not directly concern the environment. Still, **substantial measures are taken to not adversely impact it or improve environmental conditions**. Social objectives are not necessarily implied, even if some attention to connected causes is sometimes present.

Bosis[76], in Serbia, can be mentioned as an example of this group. It is a privately owned company that adopts a circular economy as a guiding principle. It aims to achieve zero-impact policies, eco-friendly packaging and materials, a green supply chain, and recycling. It has established collaboration within the network of companies as a circular economy accelerator. Beyond this, the company is committed to promoting gender equality and women's empowerment within the company and concerning stakeholders.

3.4.5. Justice

Only a tiny minority of BUIs, all promoted by non-profit cooperatives or social enterprises, adopt an **environmental justice** perspective, aiming at reducing the impact of climate change, pollution, or other negative factors on vulnerable individuals and groups. In general, these are awareness-raising, training, or empowerment actions aimed at increasing the capacity of vulnerable groups (people living in disadvantaged neighbourhoods, people exposed to natural hazards, the elderly, and the disabled) to adapt and respond to the challenges of climate change (see, e.g., CO.BIOSA.TT Bio-Sanitary Cooperative for Territorial Protection[77]).

The **distributional justice** perspective is the most represented in the collected BUIs, both in non-profit enterprises and profit businesses, even if to a more limited extent. This happens in a variety of fields and may imply that 1) people belonging to vulnerable groups benefit from (part of) the income or other benefits generated by the enterprise or that 2) they are directly and actively involved in the enterprises.

In the first case, BUIs have been mapped where the profits or products[78] of the entrepreneurial activities are partly donated to third-sector organisations, hospitals, hospices, or shelters.

In the second case, the mapped BUIs cover different areas where vulnerable target groups are actively engaged. Among these, the following can be mentioned.

- *Energy communities* can directly pursue distributional justice by specifically addressing marginalised neighbourhoods or ethnic minorities. It is the case, e.g., of Projeto Solares[79] (BR), spreading the use of solar energy to vulnerable urban

[76] https://www.bosis.rs/
[77] https://www.fondazioneconilsud.it/progetto-sostenuto/co-biosa-tt-cooperativa-bio-sanitaria-a-tutela-territoriale/
[78] https://www.leselvagge.it/
[79] https://ct.ufes.br/projeto-solares

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communities, or the Michigan Mosaic Energy Cooperative[80] (USA), addressing indigenous communities. In other cases, the energy community indirectly pursues distributional justice by aiming at reducing energy bills[81].

- Enterprises aiming at reducing *food waste* typically involve distributional purposes by redistributing what has been collected. The FoodCloud technology platform[82] (IE), for instance, connects retailers with local charities, allowing them to donate food daily.
- *Waste reuse and recycling* is another area frequently used for distributional aims, mostly organising disadvantaged groups informally collecting waste (e.g., Roma communities) in cooperatives, providing them with regular income and safety equipment (see, for instance, the case of FleXskrald[83], in Denmark).
- *Biological agriculture, biological food catering services, and urban or community gardens* often offer employment opportunities for vulnerable groups, such for instance marginal rural communities (e.g., Cooperfrutas cooperative[84], PT), migrants (e.g., Barikamà catering service[85], IT), unemployed and disabled people (e.g., Naša kuća urban gardening and agriculture[86], RS).
- *Carpooling services* sometimes take on an indirect distributional perspective when they focus on the needs of those living in remote areas that have to commute to the city (see, for instance, the JoJob app[87], IT).
- Finally, some entrepreneurial activities specifically target the smallest and more vulnerable enterprises to help them to implement energy *efficiency measures* and/or comply with *energy audits* (CAESAR[88], CLARIFY[89]).

The BUIs where vulnerable groups are more actively involved are often also relevant under a **recognition justice** perspective, aimed at creating space for vulnerable groups to express their challenges and needs and promoting inclusion and access to democratic processes. This is accomplished in a significant group of BUIs through different strategies, some of which are connected to the organisational and juridical form of the “cooperative”, or “social cooperative”, where members discuss and vote, making decisions in an inherently democratic way. This is highlighted, among others, by the promoters of the Ringsend Irish Town Sustainable Community (IE), an ecovillage established as a non-profit cooperative of which all residents are members, where all decisions are made by consensus[90].

In some cases, complex processes are set up to promote and facilitate the expression of needs and the discussion of innovative ideas. In the Midwest Tribal Energy Resources

[80] https://mmecoop.com/
[81] See, for instance, the Next Commons initiative in Japan: https://nextcommonslab.jp/
[82] https://food.cloud/
[83] https://flexskrald.dk/
[84] http://www.cooperfrutas.pt/?lang=en
[85] http://barikama.altervista.org/barikama/
[86] http://nashakuca.blogspot.com/2018/10/nasa-kuca-our-house.html
[87] https://www.jojobrt.com/?lang=en
[88] https://www.alpine-region.eu/projects/caesar-capacitating-energy-efficiency-small-alpine-enterprises
[89] https://www.clarify.io/integrations-browse/scaleaq
[90] https://www.risec.ie/about

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cooperative[91] (USA), such a process includes stakeholder outreach surveys, listening sessions on barriers and solutions, and stakeholder meetings to finally adopt courses of action.

In other cases, participatory processes are realised not only within an organisation but building partnerships with local stakeholders, to have a fuller range of perspectives and needs represented. It is the case of the already mentioned CO.BIOSA.TT Bio-Sanitary Cooperative for Territorial Protection (IT), where a strongly participatory logic was adopted to respond to the risk of hydrogeological instability, implementing networks among local stakeholders.

Gender justice perspectives are represented in diverse ways in the mapped BUIs. There are cases where entrepreneurial activity directly targets women, both producers and beneficiaries. It is the case, for instance, of the Dobra Basta (Good Garden) cooperative[92] (RS), targeting women victims of gender-based violence, whose revenues are invested in women's education and training activities. Moreover, women living in the connected shelter can be involved in gardening activities, which – besides having a therapeutic role – strengthens them economically. In other cases, gender equality/equal opportunity measures are adopted within the enterprise, while in yet others, women are leading the enterprise or are well represented in the management so that their perspectives are directly included, like in the environmentally aware KLIK company[93] (HR), which is a women-led business. The presence of a **gender+ approaches** is not apparent in the mapped BUIs. The majority of the BUIs addressing vulnerable groups, in fact, just list them (unemployed youth, the elderly, the disabled, etc.) without underlining intersections. An exception is SWIFT (RS), focusing on sustainable waste management, where Roma women are targeted[94].

Lastly, **ecological justice** considerations are more infrequently found in the mapped BUIs and are explicitly stated in only two of them, both of which have already been mentioned. The first is the Società Agricola "Le Selvagge" (IT), a for-profit company selling organic eggs that was built to promote the well-being of the chickens, who live in the woods and are treated according to the highest ethical standards in all phases of their lives. The second is the MTERA cooperative (USA), which is committed to developing energy systems that "do not violate the rights of non-human life and ensure that energy development on Tribal land is consistent with Tribal values which have provided a sustainable life for Indigenous people for millennia".

[91] https://www.mtera.org/
[92] https://onasnazivanje.rs/somborska-dobra-basta/
[93] https://klikninaodrzivo.com/
[94] https://serbia.iom.int/sustainable-waste-management-initiative-healthier-tomorrow-swift

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3.4.6. Drivers and barriers of BUIs

Table 8 – RL4 drivers and barriers table

Accessing private and public resources for environmentally aware enterprises: **Drivers** ○ Possibility of environmentally aware enterprises, particularly of a non-profit nature, of receiving private donations ○ Possibility of collecting fees and contributions from cooperative members for self-financing ○ Possibility to apply for contributions from European and international organisations. ○ Possibility to avail themselves of voluntary work. **Barriers** ○ Technological innovation (e.g., solar panels) requiring relevant investments and often depending, for micro/small enterprises, on private or public support. ○ Economic sustainability problems when the enterprises depend on external grants or subsidies for their environmental-friendly measures ○ COVID-19 economic consequences, rising energy prices, global recession.
Partnerships, networks, and value chains: **Drivers** ○ Ability of micro/small enterprises to set up a green chain of suppliers to manage the whole production process in an environmentally sustainable way ○ Cooperation – also across the profit/non-profit divide and including universities and research centres – creating opportunities to access a variety of resources (funding/co-funding, knowledge, and expertise, materials to recycle, premises use, etc.) ○ Possibility to expand outreach and local community understanding of benefits. **Barriers** ○ Possible lack of sense of ownership in networks showing vast and heterogeneous membership ○ Potential for conflict ○ Difficulty in keeping networks alive in the long term.
Cohesion, motivation, and participation: **Drivers** ○ Personal motivation and commitment ○ Participatory and democratic governance structure and decision-making models ○ Avoiding male dominance and promoting gender balance and diversity in decision-making positions **Barriers** ○ Time to be invested in supporting participatory governance models. ○ Participatory governance models' vulnerability to internal conflict.
Supportive or opposing social culture: **Drivers** ○ Interest from the business community for the savings implied by energy community schemes, efficient waste disposal systems, etc. ○ Increased momentum around ecological issues ○ Visibility of the topic in the media and on social media **Barriers** ○ Environmental measures are seen in some countries/sectors of society as an additional cost-creator for enterprises. ○ Some businesses are only interested in "greening" their mage. ○ Expectation that it should be the state to take environmental action and not enterprises. ○ Risk that environmental action in organisations is dismissed as something of interest/to the benefit of white, middle-class, male professionals.

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3.4.7. Selected inspiring cases

While several promising RL4 cases have already been mentioned, two cases are presented below for promoting pro-environmental measures in enterprises, the first concerning a social cooperative in the non-profit sector and the second a for-profit business.

Table 9 – Inspiring cases of RL4

Country Name / Website	Description
BELGIUM *The "Energy Cutters" network* https://www.energiesnoeiers.net/index.html	**The bottom-up initiative** Energiesnoeiers ('Energy Cutters') are small companies in the social economy of Flanders that carry out energy scans and energy-conserving measures like insulation of walls/roofs, preferably in the homes of socially and financially vulnerable people. Because they are part of the social economy, they employ people who typically encounter problems or don't get a lot of opportunities in the labour market, i.e., 'low-skilled' workers, people with a disability, etc. Once someone is hired, they are trained/educated to carry out the abovementioned jobs. Socially and financially vulnerable people often, if not always, don't have the resources required for a thorough assessment of their homes in terms of energy usage and insulation. The free energy scan and free insulation guidance offered by De Energiesnoeiers address this problem. Given the recent inflationary pressures on energy prices, De Energiesnoeiers and their services have become more relevant and urgent for vulnerable people. There are currently 29 local Energiesnoeiers companies with similar objectives and methods across Flanders. **Environmentally friendly measures and behavioural change** Behavioural change can be identified here for the families receiving guidance on how to avoid wasting energy and for the people who are employed to do the energy scans and interventions, who get training and acquire specific competencies that they will use in their personal life and that they are likely to spread among their acquaintances.
DENMARK *Maabjerg BioEnergy* https://www.maabjerg-bioenergy.dk	**The bottom-up initiative** Måbjerg BioEnergy is a project situated in Måbjerg, an area on the outskirts of Holstebro town in Western Denmark – one of Denmark's most important agricultural areas. The project was a solution to environmental concerns arising from the agricultural sector. While this is an important part of the local economy, concerns arose about the effects of run-off from local animal production. The resultant manure is typically spread onto fields in the area, but this was found to release worrying amounts of nitrogen, seeping into the fields in question, with negative environmental impacts in the form of water eutrophication in local wetlands. With these wetlands being newly designated as habitat areas by the EU, the local agricultural industry was forced to change its practices. In response to this, a group of local farmers, worked with larger institutional stakeholders to initiate the development of a biogas plant. This allows the manure in question to be converted into biogases (primary methane) used to produce heat and electricity. The by-products from this process are also harvested and used as fertilizer and fuel for further energy production. At the time of completion (2012), the biogas plant was the largest in the world, with

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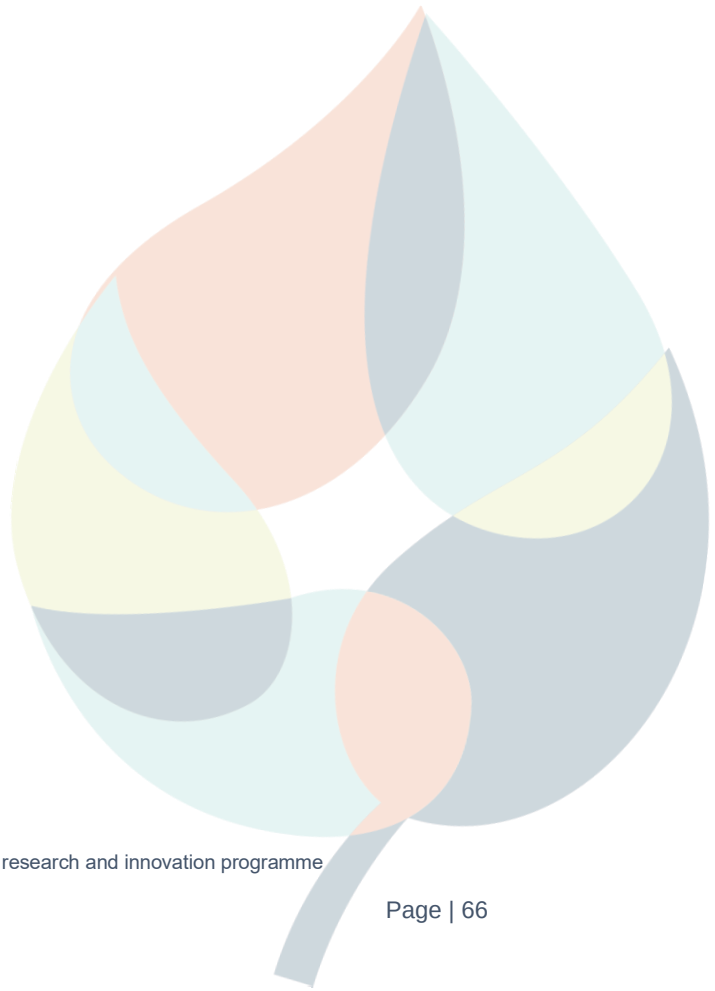
Country Name / Website	Description
	a capacity of handling 560,000 tons of biomass annually and producing 18.4 million cubic meters of biogas. The vulnerable target group, in this case, was local animal farmers – an example of workers in carbon-intensive industries who, faced with new environmental regulations, find their source of employment placed under threat. **Environmentally friendly measures and behavioural change** In this case, the change can be recorded at the level of the whole production process, implying multiple changes in the behaviour of the local animal farmers.



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3.5. Research Line 5: Food security and healthy diets

3.5.1. Mapping analysis of the BUIs

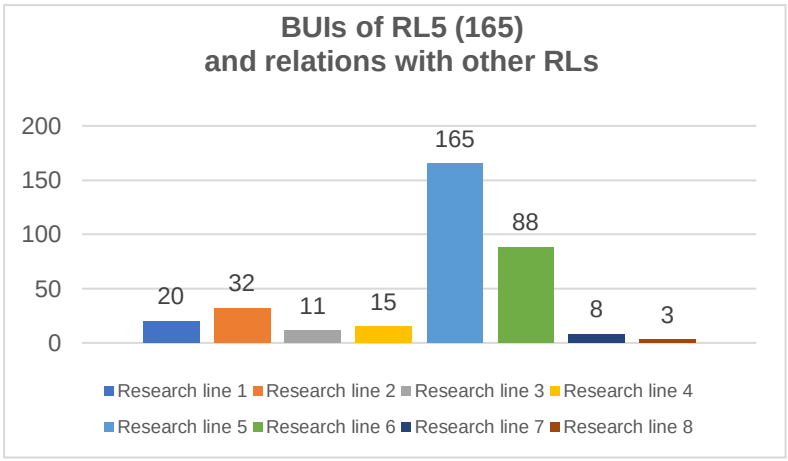

Figure 18 – Implications of RL5 with other RLs

The total number of BUIs analysed in RL5 is **165**. Analysing the researchers' responses, as shown in Figure 18, these BUIs have a significant relationship with **Research Line 6, "Farm to Fork: Food Values"** (**88**). This is not surprising, given the interconnections between food security and food values. Also not negligible is the connection with the **Research Line 2** – *Biodiversity and land use restrictions* (**32**). This is noteworthy as it challenges the common perception that food security and biodiversity are antithetical.

The main involved actors in the 165 BUIs of RL5, as shown in Figure 19, are **citizens' and community organisations (107)**, followed by **voluntary organisations** (**80**) and, to a lesser extent, **micro and small enterprises (71)**. There are also a significant number of **NGOs (59) that** are involved in food security practices**.**

3.5.2. Degree of involvement of actors

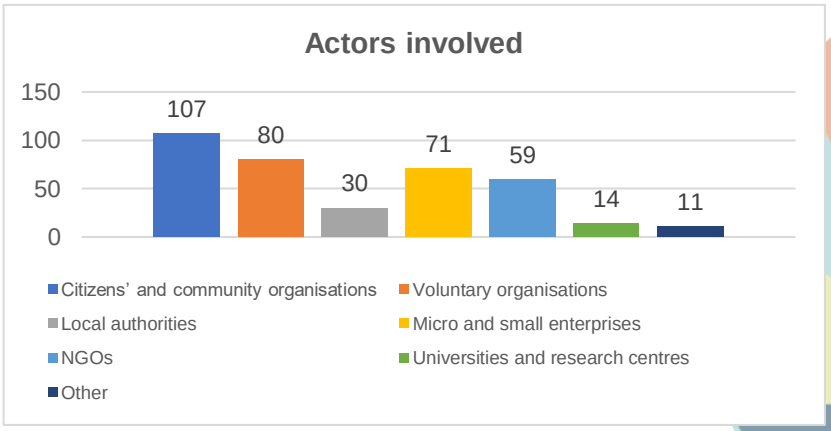

Figure 19 – Actors involved in RL5

The data suggest that food security issues are taken up mostly by community organisations, citizens´ groups and voluntary organisations. Together with the significant number of enterprises and NGOs, we see a vibrant civil society around food security. Several BUIs organise structures, networks or events to decrease food waste, increase the production of local and organic

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food, and connect vulnerable groups to supplies of food, either organic or not. Some significant and repeating forms are food banks, urban community gardens (or forest farms/agroforestry), producer/farmer cooperatives and community centres.

Citizens and community organisations, and **voluntary organisations** overlap significantly. Several **citizen and community organisations** aim to attract volunteers to support their activities. A minority of the BUIs can be considered older; that they were established roughly before 2010. The majority of the BUIs are newer, established post-2010s. The increased awareness of the climate crisis in general and the possibility of multiple food crises might have pushed several citizens and communities to become agents of change. A notable number of BUIs emerged during the pandemic to alleviate exacerbated poverty levels. The older ones tend to operate on large scales. For example, Wiener Tafel in Austria has been operating since 1999. It creates employment opportunities through its food waste mitigation practices. Its impact has saved 546 tons of food distributed to 20.000 people living in poverty. Older and larger organisations have integrated themselves into major allegiances, such as the European Food Banks Federation (founded in 1986).

The majority of recent and smaller citizen and community organisations and **volunteer organisations** differ according to the relationship between the organisers and the target groups. While some are founded and run by the vulnerable groups themselves, others strive to "help others." It is important to note that while it is possible to leave social hierarchies unchallenged in the latter organisations, there are inspiring cases of building solidarities and effective cooperation between vulnerable groups and private people. In Hungary, for example, there is an inspiring organisation called Banyaerdő (Forest of the Witches)[95]. A network of volunteers assists Roma women in a rural village in selling their local produce. Through cooperation, Roma women take pioneer roles in strengthening their deprived societies and developing business skills. The volunteers help make this a zero-waste business activity.

Many BUIs, particularly **micro and small enterprises**, take up intermediary roles between the food industry (including restaurants, supermarkets and producers) and vulnerable groups. They create and run food stations or mini restaurants, food banks[96], cooking facilities, or even door-to-door deliveries to homes or community facilities to deliver "saved food" or "ugly food" to vulnerable groups.

An inspiring case of a BUI that the vulnerable groups themselves run is Sister Land Farms in the USA[97]. This is a queer-owned, worker-run farm cooperative/school that provides food for the food banks, supports farmers (especially queer and Indigenous), and partners with tribal youth through their educational activities. What is significant in their practice is that as an organisation run by the queer, indigenous, worker groups, they aim to reflect their experiences of marginalisation into farming practices to "elevate the disenfranchised and historically ignored". Another noteworthy example is the "Food Council", the independent structure established by the City of Ghent in Belgium to oversee the implementation and execution of food strategy. It is an exciting case of direct democracy in food security matters under the purview of municipal governance.

[95] https://www.banyaerdo.hu/
[96] https://www.atlasnatuurlijkkapitaal.nl/praktijkvoorbeelden/voedseltuin
[97] https://www.sisterlandfarms.com

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One of the most significant findings is the low participation of **local authorities** and **university and research centres** in food security initiatives. Initial observations suggest that the vibrancy of civil society in the realm of food security complements major gaps left by the absence of social security and well-being policies in several countries. Another observation suggests that due to the small-scale and neighbourhood-level operation of several BUIs, they remain citizen-led, volunteer-based, and preferably independent initiatives. Having said that, there are inspiring cases of collaboration with **local authorities** as well as **university and research centres**. For example, Soil-to-Soil Biodegradable Waste Management Project – We Make Life Better Environment and Climate Association ("Yaşamı İyileştiriyoruz Çevre ve İklim Derneği") in Turkey, established in 2021[98], collects biodegradable wasted food consisting of vegetables and fruits from the marketplaces (bazaars) and transforms them into compost for soil regeneration in agriculture. Disadvantaged women are included in the project by working in the community kitchens/food banks where the usable food left in the marketplace is cooked and distributed. The BUI has established numerous partnerships with 52 municipalities and several academics in Turkey. The government authorities do not provide finances but can/do support in another way, such as designating lands that can be used as compost areas and providing the necessary equipment for compost production and distribution. Another exciting example is Cooperfrutas in Portugal[99]. It is a producer's organisation focused on producing, conserving, selecting, packaging and commercialising fruits. Together with the universities, they implement innovative solutions to compost organic waste and lessen energy consumption while supporting disabled and unemployed people.

[98] http://yasamiiyilestiriyoruz.org/
[99] http://www.cooperfrutas.pt/

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3.5.3. Initiatives' effects on vulnerabilities

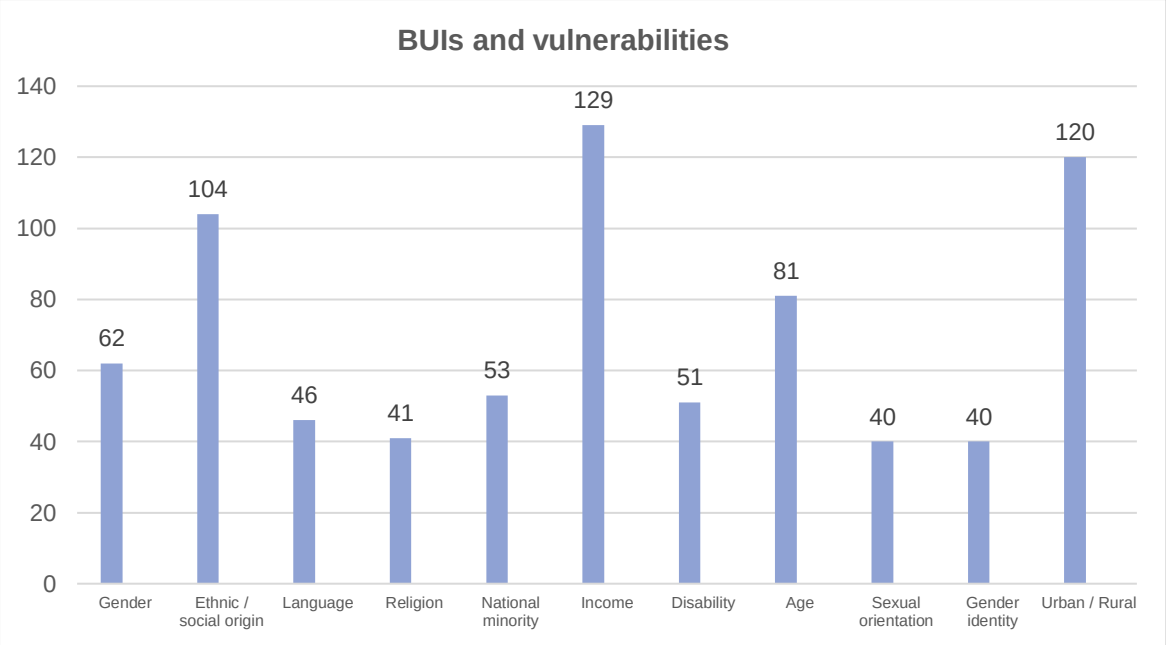

Figure 20 – BUIs and vulnerabilities in RL5

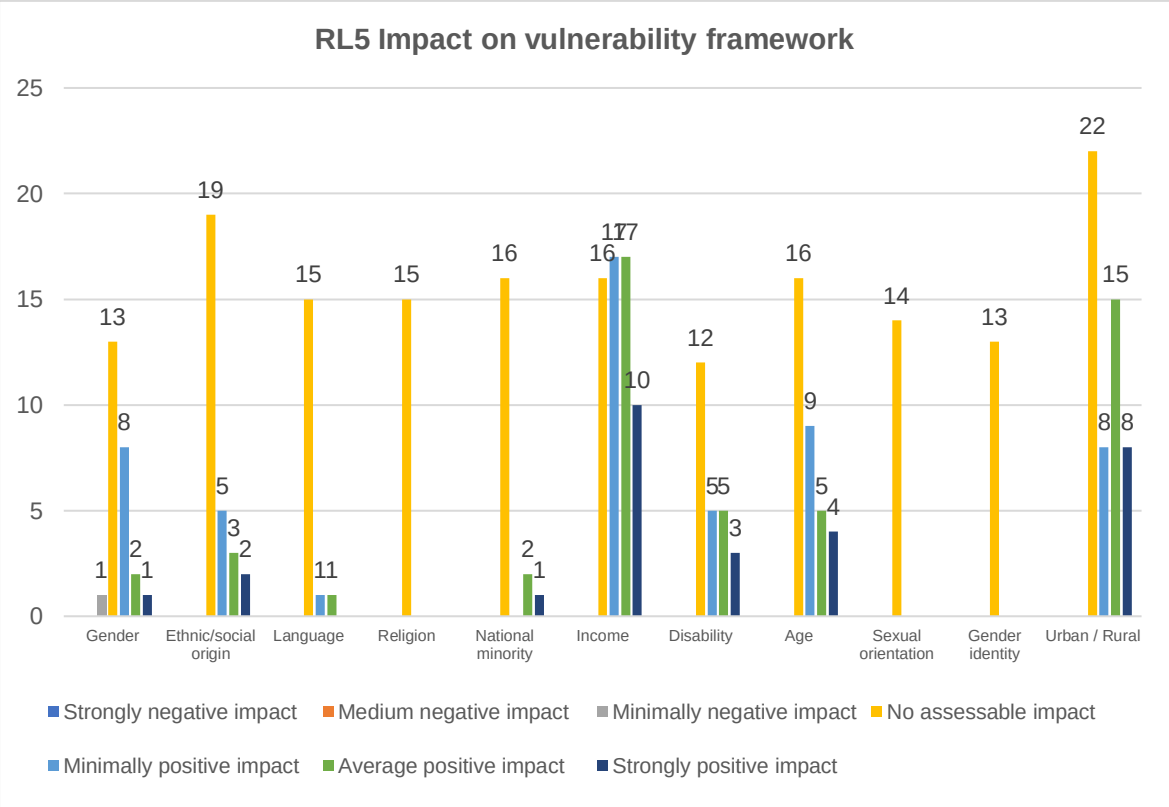

Figure 21 – Impacts of BUIs on vulnerabilities in RL5

Figure 20 shows the distribution of the 165 BUIs mapped on the various vulnerability categories. The opinions of the researchers, when present, show (Figure 21) that the

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positive impacts far outweigh the negative ones. The areas with the greatest positive impacts are I**ncome**, **Urban/Rural**, **Ethnic/Social origin,** and **Age**.

The initiatives overwhelmingly target vulnerabilities based on **income** (129/165), which can be translated into class differences and poverty. This is a promising result, as class usually tends to become invisible in the analysis of intersectionality. **Food security** can be understood as the presence of healthy, affordable, and substantial amounts of food. There can be several variations of the absence of food security; disadvantaged communities may lack access to healthy food, such as fresh vegetables, fruits, and dairy products, as well as their organic versions. Urban gardens in impoverished parts of the cities and establishing alternative food supply chains seem to be some of the strategies the mapped BUIs implement to tackle income disparities. In their alternative supply chains, the BUIs try to eliminate transportation costs by bringing the producers and consumers closer; one of many can be cited as Svaigi.lv in Latvia[100].

In some cases, the disconnection from global food supply chains and establishing self-sustainability is articulated as "**food sovereignty**". For example, networking organisations such as ALTERBANC in Spain, NOAH (Friends of the Earth) in Denmark, and Planting Justice in the USA emphasise food sovereignty either at the local, national, or international levels[101]. The latter, Planting Justice, for example, underlines the connections between US´s dependence on fossil fuels and the militarization of the Middle East while arguing to transform the unjust food system "one garden at a time" with their 550 (and increasing) edible gardens in the San Francisco Bay Area[102].

Some communities may simply not be able to afford food due to the **global economic crisis**, unemployment, disabilities, and other intersecting factors. In that respect, a couple of BUIs work on the principle of a "solidarity economy." For example, rural and urban farmers and craftspeople meet in weekly markets (colonial market) in Santa Maria, Brazil, with the help of the Solidarity Cooperation Network (Caritas Brazil).

The data suggest that **urban/rural vulnerabilities** (120/165) are also targeted greatly. Food security at the urban level is addressed by establishing communal and neighbourhood-level urban gardens where impoverished and marginalised communities are provided with the means to produce food. For example, Stadsoase Spinozahof in the Netherlands runs a neighbourhood garden, a large communal garden and a medicinal herb garden[103]. Overall, the BUI facilitates solidarity among the Dutch and non-Dutch people and advances knowledge and practice on food production. As explained in the previous section, food banks are another popular form where rescued food from the food industry is provided to the urban poor. A significant number of BUIs support urban homeless people. Jako doma ("Homelike") in Czech Republic is founded to support homeless women and transgender people[104]. This is one of the few BUIs working on transgender vulnerability. One of their very inspiring activities is the project "Women Cooks Without a Home," through which they opened a vegan restaurant and employed 12 homeless women.

[100] https://svaigi.lv
[101] https://alterbanc.org/
[102] https://plantingjustice.org/
[103] https://www.stadsoasespinozahof.nl/
[104] https://jakodoma.org/

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The BUIs that tackle the vulnerabilities related to **ethnic and social origins** (104/165) generally target groups such as immigrants, refugees, asylum seekers, and internally displaced people. A significant example is the Social Promotion Association and Social Cooperative Barikamà (which in the Bambarà language means “Resistant and resilient”) run by the African youth in Rome, Italy. They bring forth the discrimination and exploitation experienced by the seasonal farm laborers while running a micro-income project that consists of producing and selling organic yoghurt and vegetables.

Regarding vulnerabilities related to **age** (81/165), mainly two groups are targeted, children and the elderly. Organisations like the Power Box in Germany focus on child poverty and child hunger. Maisto Bankas in Lithuania[105] or the Food Bank Belgrade[106], Serbia, identify elderly groups as vulnerable and support them with food deliveries. A minority of BUIs also target teenagers.

3.5.4. Implementation dynamics

From the mapped BUIs emerge some **implementation dynamics** that fit within the ACCTING conceptual framework (see Section “ACCTING: Concepts & Methods”). The mapped BUIs can be roughly divided according to their approach to food security, whether as **a stand-alone issue** that can be alleviated by establishing channels of just-food distribution or as a **social and systemic issue** that can be alleviated with an intersectional, large-scale approach. It is to be said at the outset that food security, including food justice and food redistribution, is such a basic and key issue that even with the first approach, several social and structural inequalities and disparities can potentially be revealed.

FoodCloud in Ireland can be considered an example of the first approach[107]. This is a social enterprise that collects and distributes surplus (“ugly”) food to people with disabilities, lower-income households, women, minority groups and the elderly through charities and community groups (approximately 9500 of them). By focusing on food and food waste, they are able to replicate their model across the country and carry out a massive operation, which includes suppliers such as Aldi, Lidl, Tesco, Coca-Cola and so on. Founded by two women in 2013, FoodCloud grew rapidly, reaching the milestone of delivering 100 million meals by 2020, which might be considered a result of their singular approach.

Using **food security as a lens into broader structures of inequality** is another approach taken up by the mapped BUIs. Food not Bombs initiatives in Bulgaria and the Czech Republic (originating in the USA) constitute a renowned example of this approach[108]. These initiatives strive to reduce food waste, provide vegetarian and vegan food, and at every stage of their activities, they make reference to systemic issues, such as the military-industrial complex, climate crisis, and global disparities. Particularly the Food not Bombs in Sofia is exemplary in its wide range of activities that cover intersectional vulnerabilities; a

[105] https://www.maistobankas.lt/
[106] https://bankahrane.org.rs
[107] https://food.cloud/
[108] http://foodnotbombs.net/

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solidarity kitchen that works with rescued food and produces vegan food, a solidarity garden that is a site of collective production and ownership, solidarity bread concept that involves kneading bread for the solidarity kitchen, solidarity wardrobe and closet that collects donations of seasonal clothes and shoes and delivers them to disadvantaged people and to farm-shelters for animals, solidarity shower that provides hot bath at the solidarity club for homeless people, solidarity refuge that provides shelter during the cold winter months to homeless people, solidarity internet that is provided to disadvantaged people, solidarity circle that is a trans-inclusive support circle for former and current victims of gender-based violence and domestic violence, solidarity vegan food co-op that brings together plant-based food producers and consumers who interact beyond commercial exchange, and a vegan festival of solidarity that is organised on the International Day of Animal Rights. These initiatives have been running thanks to dedicated volunteer support. Similar initiatives that address intersecting issues through food security tend to operate on smaller scales, but their expanse can be larger. Due to their criticism of dominant structures such as the state and the major food industry operators, they tend to conduct their activities independently and through solidarity networks and economies, which are themselves vulnerable due to the same structural issues.

A noteworthy implementation dynamic is how some BUIs forge an interest in rural, forest, and peripheral sites as interconnected to the urban. Some bring people´s focus to the very complex entity of the soil; how its degradation creates a chain reaction that leads to food insecurity (including poor quality of food, non-nutritional food, biodiversity loss in terrestrial areas, and desertification). The initiative Anatolian Grasslands aims to find methods and practices to regenerate the soil for the overall healing of the ecosystems, which consists of achieving sustainable agriculture. In addition, initiatives like Oma Maa (Our Land) Cooperative in Finland turn city-based citizens into farm co-owners[109]. Some members participate in farming practices. They also reach collectively produced food through food pick-up points in the city. The community members lead environmental-friendly lifestyles and try to be self-sustaining by locally growing food and taking care of each other.

Such initiatives facilitate increasing connectivity between urban and rural areas, which can have further implications.

Lastly, **urban community gardens,** a very popular form across the mapped countries, necessitates an analysis of its own. These gardens are subject to various discussions. Municipalities tend to support urban gardens, especially in neighbourhoods where vulnerable urban groups are the majority residents, by allocating space for gardening and providing initial infrastructural and equipment support. This is an important area of research to assess to what extent municipal support is a greenwashing activity and to what extent it is part of a broader strategy to alleviate food insecurity. When it comes to the practice side of urban gardens, it seems this is a deeply transformative activity. The initiative Tartu Organic Community Garden in Estonia emphasises several ways in which people transform individually and collectively through physical work and skill development: “disadvantaged urban dwellers, the unemployed and pensioners have the opportunity to grow food in urban gardens, maintain work habits and find meaningful activities; the health of the urban population improves through regular physical activity; the garden unites people of different

[109] https://www.omamaa.fi/in-english/

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backgrounds and ages and creates a sense of belonging and social cohesion; the garden allows joint activities for families, which are a means of raising children and nature education"[110]. Such "utopian" hubs scattered across the cities not only create a sharp contrast to the congestion and degreening in the cities, but they also create alternative public spaces where face-to-face interactions are made possible through shared attention to ecological diversity and well-being.

3.5.5. Justice

From the descriptions of the BUIs, some **justice dynamics** seem to emerge and are tentatively described in the following paragraphs.

The mapped BUIs in RL5 altogether cover all the intersectional justice perspectives. The strongest form is **distributional justice**. As mentioned above, food banks and several food rescue initiatives work to deliver food to disadvantaged communities. A symbolically revealing one of them, Robin Food in Belgium, was founded in April 2020 as a direct response to the socioeconomic effects of the COVID-19 pandemic[111]. The farmers had excess food due to the closures in the hospitality sector, and Robin Food intervened to turn that produce into soups and other products to be delivered to vulnerable communities.

The BUIs that operate based on **recognition (inclusive) justice** is touched upon in Section 1.2, while discussing the BUIs that are run by the vulnerable communities themselves. One addition might be the BUIs that serve people with mental health issues, physical and intellectual disabilities, and former drug or alcohol users. For example, Social Permaculture: Empowering an Active Society (Social PEAS) project in Malta aims to empower vulnerable adults to increase their knowledge of social permaculture and nature therapy to support their well-being and social resilience. They do so through garden planning, growing plants and food, caring for plants, and spending time outside together with others[112].

Many mapped BUIs work on reducing the pollution caused by the food industry, such as the use of pesticides and long supply chains, which can be considered as seeking **environmental justice**. Gradski vrtovi Sisak (Urban Gardening Sisak) in Croatia is a unique BUI in that they cleared up construction and heavy industry waste at a site and turned it into an urban community garden in a city with a majority of low-income and older adults[113]. The regeneration of the land accompanies the post-conflict reconstruction of the city of Sisak, which brings in dynamics of recuperating wartime collapse of industry and wartime frontline damage and healing the scars of ethnic cleansing. On top of this, the urban gardens open space for the survivors of a powerful earthquake. All these combined dynamics turned the urban gardening project into environmental justice initiative where regenerating heavily polluted land intersects with rebuilding society.

Even if not the majority, a considerable number of the mapped BUIs address issues related to **gender justice**, and they differ in two ways. Some BUIs are either led by women and/or

[110] https://tootsipeenar.wordpress.com/tartu-organic-community-garden/
[111] https://www.eitfood.eu/projects/robin-food
[112] https://www.promimpresa.it/social-permaculture-empowering-an-active-society-project-erasmus-project/
[113] http://www.vrtovi.zelenozlato.org/

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target women as a vulnerable population, such as the EatGrim in Denmark, which recovers "ugly" fruits and veggies and is completely led by women farmers[114]. The nationwide Martha Association[115] (1899) in Finland is one of the earliest women-run organisations focusing on home economics, immigrant integration, food and nutrition and home gardening, among many other topics. While these organisations can be considered as working towards gender justice, their contribution is more nuanced.

More explicit practices towards gender justice tend to be carried out by the BUIs that have an intersectional approach, and they are the minority of the mapped BUIs. These BUIs develop solutions to food insecurity while considering its gendered causes and consequences. By serving women with intersecting identities, including those with sexual orientation and gender identity, they make their marginalisation visible and point out the multiple ways women and LGBTQI+ people are made vulnerable. Some brief examples are 1) the Jako doma ("Homelike") in Czech Republic (mentioned above) working with homeless women and transgender people, 2) Women´s Movement of the Xingu Indigenous Reservation Association (Atix Mulher) in Brazil[116], 3) Kumpania in Italy working as/with Italian and Roma women[117], 4) Terras de Cascais (Lands of Cascais) in Portugal working with imprisoned women[118], 5) the Black Feminist Project and its "Black Joy Farm" and "Community Food Box" activities in the USA working with transgender women and men, cisgender women and men, agender-bigender-twospirit people[119]. These BUIs and a few others among the mapped BUIs construe women's empowerment as part of the transformation of patriarchy and other intersecting hierarchy systems.

A noteworthy BUI in terms of gender justice is the Casa dels Futurs[120]: an international climate justice centre and movement school in Spain. This future-oriented initiative aims to increase preparedness and resilience in times of climate crisis. As part of their knowledge-building practices, they draw upon decolonial, ecofeminist and anti-racist practices to foster solidarity across social and ecology movements. In one of their working commissions, they focus on care and gender, making this BUI quite unique.

In terms of **ecological justice**, it is safe to say that the mapped BUIs are at a very early stage in their ecological justice practices if they do anything at all. Even though there is a burning issue of human-wildlife conflict due to the expansion of the farms into the forests and other wilderness life spaces, only one BUI among the mapped 165 BUIs mentions wildlife and is referred to as a damaging factor. The Alimentem Collserola in Spain aims to promote agroecological food system transition in a natural park[121]. As part of their transition projects, they identify the damage done by marshes and other fauna to the crops. They do not provide any information on whether they assess their damage to the wildlife.

One inspiring example of **ecological justice** comes from Japan. The Forest Garden Project in Hamamatsu City, Shizuoka Prefecture aims to grow an edible forest for humans and non-humans. They emphasise that in the impending possibility of a major earthquake in

114 https://eatgrim.com/
115 https://www.martha.fi
116 https://www.instagram.com/watatakalu
117 https://www.lakumpania.it/
118 https://ambiente.cascais.pt/pt/terrasdecascais/terras-cascais
119 https://www.theblackfeministproject.org/
120 https://www.casafuturs.org/
121 https://parcnaturalcollserola.cat/pla-agropecuari/alimentem-collserola/

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Shizuoka, the edible forest garden also serves as a food security shelter in the event of a disaster[122].

As part of the ecological justice strand, a unique BUI concerned with conserving marine ecosystems is El Peix al Plat in Spain[123]. This organisation mainly aims to cultivate responsible fish consumption practices, which include buying from traditional small-scale fishers who use respectable fishing methods for the sea environment.

3.5.6. Drivers and barriers of BUIs

Table 10 – RL5 drivers and barriers table

Drivers • (Prosocial environment and movement-building) Good organisation of volunteers • (Prosocial environment) creating new social spaces, transforming local culture, building a community • (Prosocial environment) the strength of existing social bonds in each area, facilitating to support collaborative projects, sustaining traditional events, etc. • (Prosocial environment) Being truly bottom-up and led by vulnerable groups. • (Expertise) Transnational solidarity movements and connections that disseminate knowledge and expertise • (Expertise) Strong leadership of individuals from vulnerable communities. It is also helpful when the network leaders have good communication with the sponsors and the collection of donations is well organised. • (Local culture) Increased demand for local organic food and sustainability

Barriers
• Covid-19
• Financial barriers
  ○ Economic crisis reducing food donations.
  ○ The costliness of alternative systems compared to the mainstream ones. There is still a vague notion that green initiatives will help and aid vulnerable groups. Green initiatives are mostly viewed as expensive activities that will pay off after a long time, if at all.
• Local culture
  ○ lack of awareness or willingness among the general public to change their lifestyles and consumption practices.
  ○ Culture of stigmatization and marginalisation of the communities the BUI works with (e.g., homeless, Roma, etc.)
  ○ Deep-rooted racism, xenophobia, and war trauma in societies
• Project management
  ○ A project-based working model that is limited in time, scope, and finances.
  ○ Frequent changing in personnel disrupts the flow of knowledge and experience.
  ○ Burnout of the permanent personnel.
  ○ Organisations that grow a lot might lose past face-to-face and personal relationships with their members or volunteers.
  ○ Running on volunteer labour.
  ○ Barriers emerge from methods (e.g., for the Deep Poverty Network, establishing a one-to-one relationship with the families living in deep poverty is essential for addressing the issue and conducting research and advocacy. However, this relationship and witnessing rising levels of food insecurity and hunger for many

[122] https://www.theartofforestgarden.com/
[123] http://www.elpeixalplat.com/es

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families and children might be emotionally tiring for the members of the BUI as the growing number of people seeking help has increased over time).
- Greenwashing companies that compete in the areas of BUI´s work
- Lack of infrastructure, lack of resources
- The pressure of a globalised extractive economy
- The top-down character of the BUI

Drivers that can also be barriers

- Presenting change as a behavioural, every day, individual act (i.e., changing cooking practices). This can be seen as "simple," like "making a change one meal at a time," but it can also be seen as a "luxury" that can be achievable only by the privileged people in society. One researcher describes one initiative, "This is a very demanding initiative. Direct buying is very different from the usual shopping at the market or supermarket. The buyer must learn to plan the necessary products for the next week. Also, sometimes you must be creative to prepare meals from what is seasonally available at that moment. Such an initiative may not be suitable for everyone, and the dropout rate might be high, however, there is no information that confirms it or not."
- The big food industry emerging as new actors in sustainable food production and sale. This can very effectively transform local cultures and increase public awareness and interest in sustainability, but it can also pave the way for greenwashing and create difficult competition with local, small-scale initiatives.
- Foreign aid. This can provide vital seed money for many initiatives to kickstart and/or grow, but it can also create too much reliance on outside financial resources. Some aid can also restrict BUIs' activities ideologically and with their bureaucracy.
- Support from local authorities (municipalities, etc.). This can provide vital seed money for many initiatives to kickstart and/or grow, but it can also create too much reliance on outside financial resources. Some aid can also restrict BUIs' activities ideologically and with their bureaucracy.
- Focusing on a single vulnerability/topic. Formulating the problem concretely and clearly (e.g., food waste) helps the public understand and implement simple solutions (e.g., buying rescued food). This can be a barrier to pushing for more systemic and structural changes in the food systems.
- Being an intersectional BUI with an agenda of several interconnecting issues and a network of collaborators. One BUI articulates the organisational barriers well: "We have to learn to synchronise the rhythms of all the people collaborating. If it's a very diverse ecosystem, that's interesting, but it takes effort to understand each other and synchronise to adapt to changing needs. Not everyone sees the same needs at the same time, which means you have to adapt all the time." This statement sums up the challenges and rewards (i.e., building a community) of working intersectionally.
- Pressure to be innovative. When the BUI has resources and infrastructure, this pressure can provide a good incentive to find solutions to complex problems they face. However, the food industry often expands into the spaces the BUIs cover with more affordable alternatives and causes grassroots organisations and methods to weaken or dissolve. Low-tech operations cannot compete with innovative solutions in the market.

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3.5.7. Selected inspiring cases

Three cases have been selected as inspiring and are described below.

Table 11 – Inspiring cases of RL5

Country Name / Website	Description
TURKEY *Deep Poverty Network* https://derinyoksullukagi.org/en/	**The bottom-up initiative** During the pandemic, the Deep Poverty Network was established in 2019 as a solidarity network "that carries rights-based work in dozens of poor neighbourhoods that tackle urban poverty" in Istanbul. Besides their educational and policy activities on the root causes, dimensions and implications of poverty as lived by the most vulnerable (homeless, unemployed, Roma, and on the brink of starvation), the Deep Poverty Network carried out a food access campaign to 1000 families, 60 of which are women-led. It was founded by activists, researchers, sociologists, psychologists, and journalists. The BUI aims to break the cycle of poverty by eradicating the deep poverty some people have fallen into. This organisation has collaborated with social workers, volunteers, professionals, public institutions, local governments, and other national and international NGOs. **Food security, distributive justice and eradicating deep poverty** ● They established a system that directly supports households regarding nourishment (healthy food), basic care, diaper, and baby formula via direct purchases made by the individual supporters through online markets. According to the data given in their latest activity report, they have provided support to over 2,000 households living in 171 neighbourhoods of 34 districts of Istanbul. ● Provided a refillable grocery card or a digital grocery code with a monthly balance of 400 or 600 TL with the households supported in their network to use them in specific markets. ● Prepared five research reports, four information notes, two emergency calls, one storybook ("Absent Stories"), and an audiobook to discuss the unsustainable conditions of poverty as a human rights violation to mobilise the media and public institutions. ● Regularly prepare the monthly poverty agenda monitoring in the parliament as a series where one can follow the questions, research commission proposals and law proposals themed on poverty and human rights violations caused by poverty. All their content, including reports, information notes, emergency calls, and their book, is available in Turkish and English on their website. ● Pays visits to families in their neighbourhood, conducting individual interviews with each family member. ● Provide information and guidance to supported groups to reach Social Service Centers and various NGOs in line with their needs. They are also engaged in employment and training in cooperation with various institutions when possible. ● Support women producers and families to participate in the Women's Labour Markets organised by the Istanbul Volunteers. ● Between March 2020 and December 2021, the initiative reached more than 15,000 people living in conditions of deep poverty in over 3,000 households within over 160 neighbourhoods in 32 districts of Istanbul.

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	● Guided families, particularly single women and single mothers, to apply and benefit from specific social support schemes and helped them to get an identity card for their children if needed.
SPAIN *Kilombo* https://lafundicio.net/kerasbuti/2021/07/14/kilombo-ecosistemes-economics-i-culturals-per-al-bon-viure/	**The bottom-up initiative** Kilombo is a collaborative project between the cooperatives LaFundició, Keras Buti, Tarpuna i Voltes, the association Keras Buti and the distributor Ecocentral. Their goal is to build a new social, cultural and economic ecosystem where the countryside and the city are connected, production and consumption are brought closer, and a new form of community is built. One of the founding cooperatives La Fundició specialises in developing methods of conviviality. Another one, Keras Buti, contributes by recovering and updating traditional Romani knowledge and practices and linking them to circuits of value production within the social and solidarity economy. In other words, they are inspired by the local Roma community to build sustainability while empowering migrant people, women and the Roma communities. **Food security and recognition (inclusive) justice** ● Runs a 2-hectare farm dedicated to organic farming and eco-social transition. While the first provides food and job opportunities for the Roma community, the latter refers to enlivening "rururban" imaginaries and practices, including but not limited to sustainable beekeeping, bio-construction, and vegetable fibres. ● Researches plant fibres, their role within the ways of life of the Roma people, and their aesthetic and material potentials. ● Recovers and enhances the value of the neighbourhood's agricultural past and relate it to current organic production in the Baix Llobregat Agricultural Park ● Runs a community kitchen restaurant committed to sustainable food systems and food sovereignty. In addition, the kitchen restaurants generate employment opportunities for vulnerable people, such as migrants or young people from the Roma community. ● From April to June 2021, they organised workshops to learn how to compost and make an urban vegetable garden. Beyond the workshops, the project envisages the continuity of the action so that the compost bins built in the civic centres will be used to process and reuse the organic waste from the La Suculenta kitchen restaurant. Likewise, the compost bin at the Institut Escola Gornal will be used in the school canteen. The one at the Casa de la Reconciliació will compost the waste generated in the Conserves Litorals kitchen space. ● Promoted sustainable mobility, which includes a cycling services project.
USA *Deep Medicine Circle* https://www.deepmedicinecircle.org	**The bottom-up initiative** Deep Medicine Circle (DMC) is a worker of colour-led non-profit organisation that aims to "heal the wounds of colonialism through food, medicine, restoration, story and learning." They emphasise the importance of healing and care for Indigenous and non-Indigenous communities and non-humans. DMC is formed by a collective of farmers, elders, physicians, healers, herbalists, lawyers, ecological designers, scholars, political ecologists, educators, youth, storytellers and artists. They pursue "earth-based, Indigenous ecofeminist principles of organising, with participatory governance structures and circles of decision-making." In producing solutions to the climate crisis, they turn to indigenous knowledge to repair the broken relationships between people and nature.

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	Food security as a lens into a deeper transformation of intersectional inequalities ● Runs urban farm sites and distributes nutritious food to those in need. They do this by partnering with Poor Magazine' Sliding Scale Cafe, Moms for Housing, UCSF Pediatric Clinic, and Wahpepah's Kitchen. ● Carries out the "Farming is Medicine" project that develops an ecological farming model bringing indigenous knowledge with agroecological care for soil and water. ● Carries out the "Heal the Healers" workshop program to support the frontline healthcare workers. ● Opens spaces for mental health issues and grief, particularly during the COVID-19 pandemic. ● Builds partnerships with the indigenous peoples in their return to their ancestral lands and reconnect to the land. ● Prioritise storytelling and arts in their work "We are bridging times and worlds together through story, art and imaginings". ● In their work program entitled "Learn/Unlearn - Land as Elder. Land as Teacher" DMC develops an innovative job training module for farmers that bridges agroecology with Indigenous Traditional Ecological Knowledge. ● Organises workshops on preparing food and medicine from crops and wild foods. ● In September 2021, the farm donated fresh greens and herbs to: "UCSF Pediatric Clinic's Food Farmacy", which gives free food to hospital patients and their families; POOR Magazine's Sliding Scale Cafe, which distributes food and other resources throughout deep East Oakland; and Moms 4 Housing, a collective of houseless and marginally housed mothers".

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3.6. Research Line 6: Food values

3.6.1. Mapping analysis of the BUIs

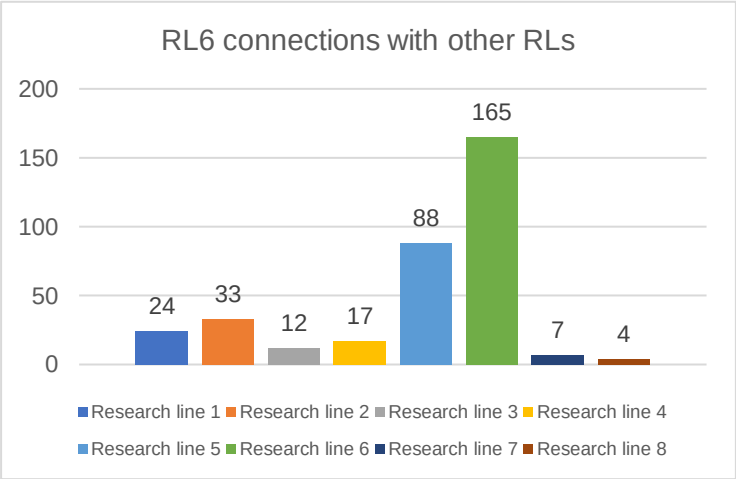

Figure 22 – Implications of RL6 with other RLs

The total number of BUIs analysed in RL6 is **165**. Analysing the researchers' responses, as shown in Figure 22, these BUIs have relationships of some kind with **Research Line 5** (88) in particular. This is due to the considerable overlaps between and interconnected nature of the two research lines (RL5: *Food security and healthy diets*). The graph shows that the second larger overlap is with RL2.

(*Biodiversity and land use restrictions*).

3.6.2. Mapping analysis of the BUIs

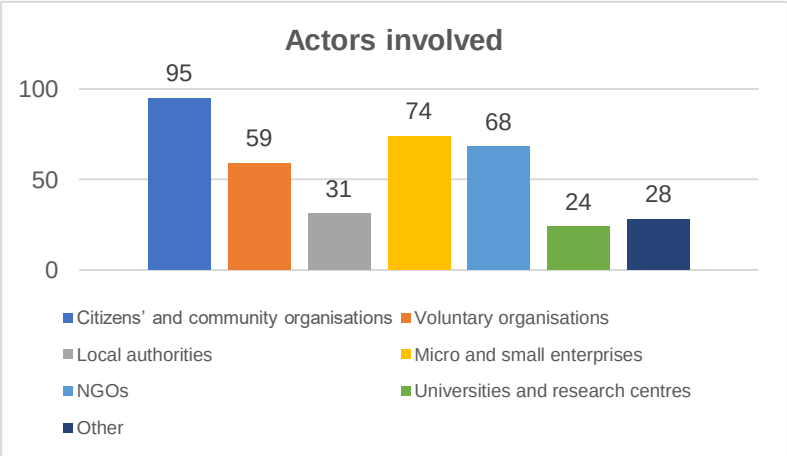

Figure 23 – Actors involved in RL6

The main involved actors in the 165 BUIs of RL6, as shown in Figure 23, are **citizens' and community organisations**, followed by **micro and small enterprises**, **NGOs, voluntary organisations**, and to a lesser extent, **local authorities** and **universities and research centers**.

These data suggest a concentration of civil society and community-based organisations around the RL6 BUIs, with the involvement of micro and small enterprises. This high proportion of **citizens' and community organisations, NGOs, and voluntary organisations** illustrates the collective nature of local residents as a driving force behind most mapped BUIs. These initiatives and

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organisations seem to mobilise voluntary participation at the local level to address the immediate (i.e., sustainable food production, reducing food waste, and food poverty for disadvantaged groups) or long-term (i.e., improved soil fertility, prevention of environmental impact, and enhanced community well-being) needs of the community.

Although **most mapped initiatives are locally oriented and act locally**, **some** act within a more extensive network of **international** and global organisations. The sale system Cesta Camponesa (BR)[124] is such an example. The Movement of Small Farmers (MPA) “The Movimento dos Pequenos Agricultores” develops this system by which food baskets produced by the peasants in the countryside are distributed at a fair price to the workers in the city of Rio de Janeiro without the involvement of middlemen. On a larger scale, MPA is part of Via Campesina Brasil, Via Campesina International, and the Latin American Confederation of Peasant Organisations. Another noteworthy example is Friends of the Earth Cyprus[125], a member group of Friends of the Earth Europe and Friends of the Earth International. “The Growing Together” project aims to integrate the voice of young people, particularly youth from rural communities, into a broader debate on food systems, food sovereignty, and the future of food production on the local, national and international (EU) levels. A similar example, Global Aktion/ Global Action (DK)[126] is an NGO with 150 activists divided into a larger number of working groups, one of which is natural resources and food sovereignty. The values and objectives of this organisation are deeply rooted in the form of environmentalism, which sees vulnerable groups (i.e., mostly Global South countries) as being at the core of the climate crisis. The NGO also works with the Global South governments and runs projects with several collaborators in the Global South.

Only a **few mapped initiatives seem to be initiated by vulnerable groups**. For example, The Good Garden[127] “Dobra Basta” (CS), originally part of the project "Ona-snazivanje[128]" (Her Empowerment) supported by the B92 Foundation, UN Women, and the ”SMART Kolektiv” organisation, is run by women victims of domestic violence and elderly women from rural areas. Women in this voluntary organisation are engaged in the organic greenhouse production of vegetables, especially cherry tomatoes, building on their experience with home-based gardens. As the initiative purchased a solar dryer/dehydrator as a source of clean energy to enable their sustainable farming activities, the income generated is used to provide more training programs for women's economic empowerment. Another example is Sister Land Farms (USA)[129]. This queer-owned, worker-run farm cooperative is committed to changing the farming business model and farms in general with the intention of "unlearning and recalibrating" to "elevate the disenfranchised and historically ignored." For more information about this initiative, please see the previous RL5 chapter.

Micro and small enterprises are started mainly by eco and climate-conscious citizens who are mindful of their food choices and the impact of these choices on people and the planet and target a transition to environmentally sustainable food consumption. For this reason, these enterprises target maximising social impact and benefits to their community and the

[124] https://www.cestacamponesa.com.br/
[125] https://www.foecyprus.org/
[126] https://globalaktion.dk/
[127] https://www.facebook.com/dobrebaste/
[128] http://onasnazivanje.rs/
[129] https://www.sisterlandfarms.com/

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environment besides profit. Some even generate funding for social programs, including the community (mostly the youth). For example, Kafe Mellemrummet (DK)[130], owned and managed by ActionAid Denmark, is run by young and mostly international student volunteers. On the one hand, the profits of the café are used to support a global project chosen on environmental sustainability and social justice. On the other hand, it hosts political debates, workshops, and other raise-awareness activities among its community and offers organic and fair-trade food to promote sustainable food habits.

Others emerge as a bakery or production of homemade bio biscuits and crackers (Bio Pekárna Zemanka[131], CZ), an organic farm/garden (Hornudden[132], SE), and a restaurant (Miesto Laboratorija[133], LT) that functions as a community centre and engages in educational activities primarily related to food waste prevention, sustainable food consumption, and green living. Somehow, they also target vulnerable populations such as children and the youth, the elderly, ethnic minorities, people with poor mental health, and low-income households at risk of food insecurity by offering training and employment opportunities and distributing wasted food collected from different sources in the scope of their businesses.

Apart from the collaboration with non-governmental national and international organisations dedicated to similar environmental causes, the **BUIs are also funded or coordinated at a central level by local authorities** and different governmental bodies ranging from ministries, school authorities, and agricultural advisory centres to elderly homes and shelter houses, etc. As a powerful and noteworthy example, Gent en Garde (BE)[134] was started by the City of Ghent municipal authorities. The Ghent Food Council was established to oversee the implementation and execution of the food strategy. This Food Council is based on the principles of participation and co-creation, bringing together various stakeholders from civil society, agricultural organisations, knowledge/education institutions, and other people contributing to the local (social) economy. In total, 32 members and partners make up the composition of the Food Council.

Universities and research centers are only marginally present in the BUIs mapped for food value. A good example stands out at the conjunction of research, civil activism, and local governance in Food Self-provisioning[135] (FSP) in Croatia. The researchers at the Institute for Social Research and Institute for Political Ecology are linked to the green-left political platform in the city of Zagreb, where a broader initiative works on developing the integration of FSP potential and output into sustainable food strategies. This includes promoting sustainable food production, distribution, and consumption for the city. However, little is known about the use of industrial fertilizers and chemicals in food production or how the environmental sustainability of food production is vital for food self-provisioners.

Another example is “Farmly” (SE)[136] which is an app created in 2021 by four students at Örebro university in Sweden and supported by the local innovation office (ORU Innovation).

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130 https://www.ms.dk/en/home
131 The products are packed in easily recyclable packaging and delivered to packaging-free stores as well. They use shared transport/cars for delivery and energy only from renewable sources. See here.
132 https://hornudden.net/klara-fardiga-ga-ett-leaderprojekt-pa-hornudden/
133 https://miestolaboratorija.lt/
134 https://participatie.stad.gent/nl-BE/folders/gent-en-garde-projectmap
135 https://zagreb.mozemo.hr/program/zeleni-plan-za-oporavak/#polje
136 https://www.linkedin.com/company/sweden-alfa-group-ab/about/

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First developed within the framework of “The Food Project" (Foodprojektet), Örebro University and the Örebro County Region have implemented it for three years. The app connects local and small-scale producers/farmers with restaurant owners/chefs, thus facilitating producers to sell their products and allowing restaurants to purchase what they need locally.

Finally, there are also cases where community associations and private companies work together, for example, to encourage small farmers and ranchers to recover deforested areas by planting cacao and local trees, as in the case of Cacau Floresta – The Nature Conservancy (BR)[137]. Starting in 2012, in the municipality of São Félix do Xingu, in southeastern Pará, the initiative has supported 310 family members with the “Cocoa More Sustainable” project to enhance the recovery and regeneration of around 1,000 hectares of cocoa plantations through agroforestry systems.

3.6.3. Initiatives’ effects on vulnerabilities

Figures 24 and 25 show the distribution of the 165 BUIs mapped on the various vulnerability categories. The areas with the most significant positive impacts are **Income**, **Urban/Rural**, **Ethnic/Social origin, Gender** and **Age.**

Most BUIs do not always target specific vulnerable groups, but they are designed to be inclusive, reducing barriers or improving access to all and, therefore, the most vulnerable. However, one of the main barriers addressed is the cost of environmentally sustainable food, even access to food per se.

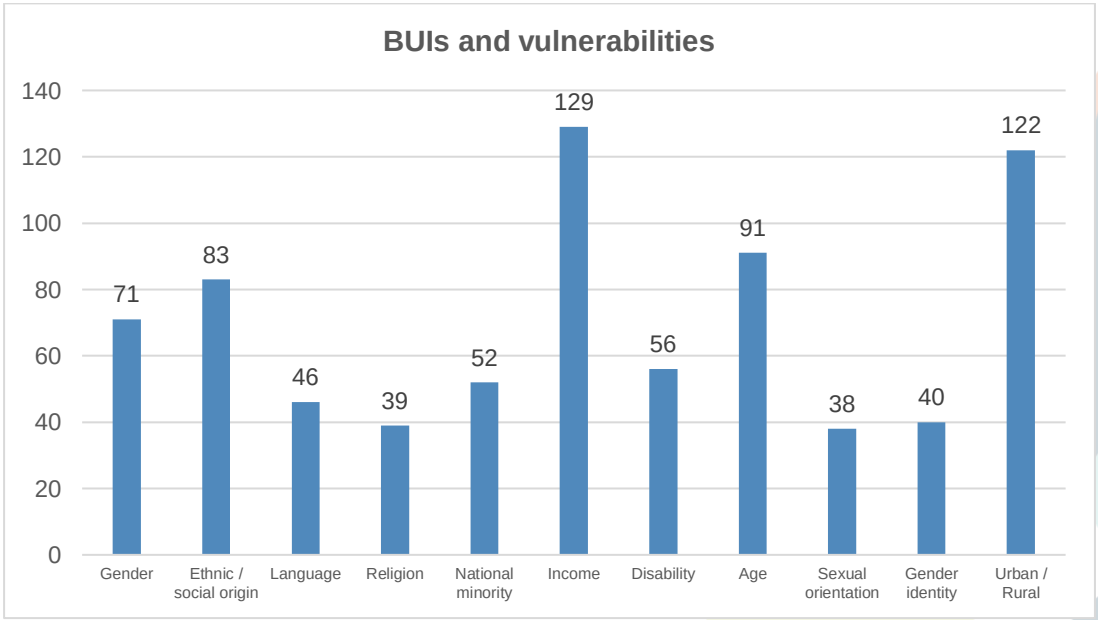

Figure 24 – BUIs and vulnerabilities in RL6

[137] See here.

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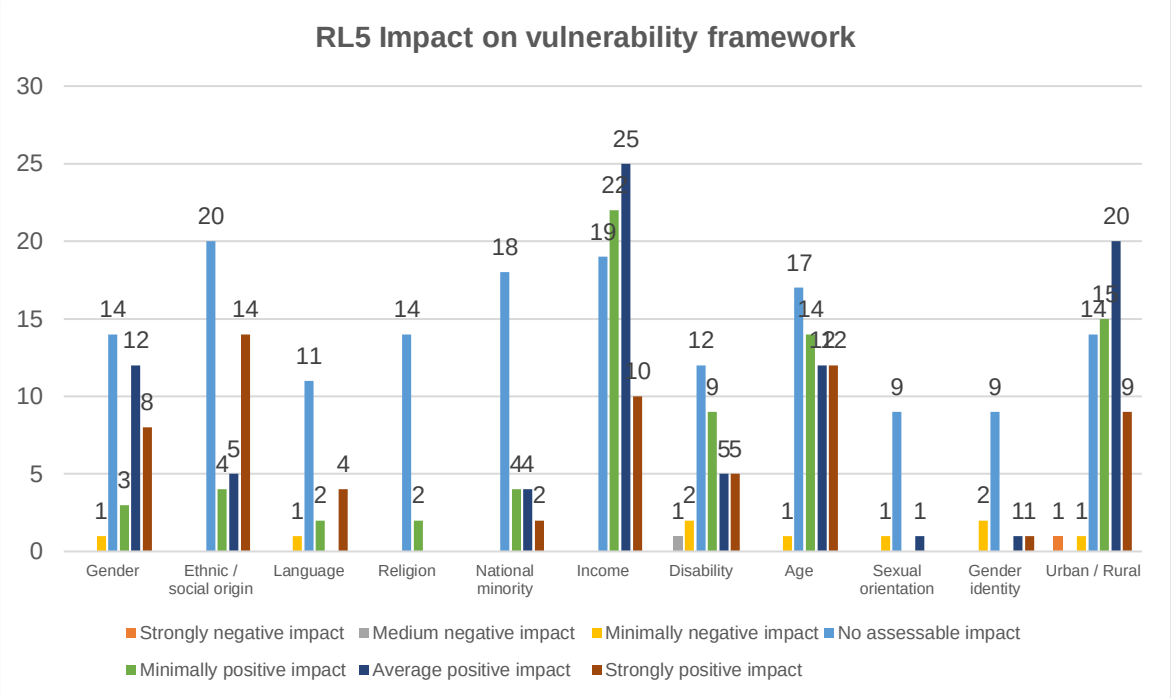

Figure 25 – Impacts of BUIs on vulnerabilities in RL6

Thus, some BUIs target specific vulnerabilities primarily based on **income** (129/165). For example, vulnerable groups unable to afford or cook enough healthy food (food poverty) are such targets. For example, the community group "Barnet Community Harvesters" (UK)[138] donates extra fruit harvested from trees in private gardens and allotments in the borough of Barnet, north London, to food banks[139] which mostly consist of a limited stock of fresh, seasonal, and local food and more dry/canned foods and charities that support homeless people. Another example is EasyPeasy (RO)[140], a platform that connects restaurants with consumers in the fight against food waste. To avoid throwing away fresh food, this project aims to allow restaurants to sign up on this new platform, where they can post their surplus food portions daily to sell them at a reduced price for mainly low-income families or individuals.

Additionally, in repurposing abandoned or fallow land through the development of **urban** agriculture, the organisation Alma Backyard Farms (USA)[141] delivered food bags to low-income and homeless people during Covid-19. The initiative also provides training for individuals re-entering from incarceration, which includes backyard gardening, urban farming, and employment opportunities in the organisation. Another interesting example on vulnerability grounds is Planting Justice (USA)[142] which is divided into three initiatives: "Grow Food. Grow Jobs. Grow Community". Since 2009, the BUI has built over 550 edible permaculture gardens in the San Francisco Bay Area, empowering hundreds of people to grow their food, and worked with five high schools to develop a food justice education

[138] More details here.
[139] The researcher of this initiative reports that food bank usage is increasing in the UK due to inflation, wage stagnation, and increased cost of utilities, meaning that food bank users are no longer as homogenous a target group as they once were.
[140] https://www.impacthub.ro/blog-easypeasy-la-black-sea-climaccelerator/
[141] https://www.almabackyardfarms.com/
[142] https://plantingjustice.org/holistic-re-entry/

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program. Partnered with state prison, the BUI trains prisoners in permaculture gardening in prison. By the time they leave the prison, their work remains ready. As a result, the BUI has created over 40 green jobs in the food justice movement for formerly incarcerated people transitioning from prison.

Regarding age-related vulnerabilities (91/165)**, children and youths** are other examples of specific targets chosen by many BUIs. Educating children and young people is seen as key to a sustainable society, and this is explained further in the next part (1.4). Through environmental education programs and activities, young people not in education or employment acquire skills and experience (e.g., growing fruits and vegetables, garden maintenance, land cultivation, etc.) related to sustainable agriculture and permaculture in a production field and knowledge and awareness towards nutritional diets and healthy eating patterns. An example is “Botanica Life Foundation” (BG) in the village of Nadarevo in Bulgaria[143]. Its social enterprise program offers part-time job opportunities to at-risk young people from the complex for psychiatric health care in the community. Thus, while it creates employment opportunities for disadvantaged groups of young people in sustainable agriculture, the BUI contributes to capacity building and social inclusion of these vulnerable groups, through active training in the garden. Another example is the urban farm in Neder-Over-Heembeek (part of the municipality of Brussels in the Brussels Capital Region) (BE)[144] which is a social economy project run by the Brussels-based non-profit organisation that grows sustainable food in an urban setting and sells its products through bottom-up solidarity networks of small food producers. The young people targeted for employment on the urban farm are from underprivileged backgrounds who have had few opportunities, have little professional experience, and are living in precarity.

Some BUIs approach vulnerabilities from multiple angles (a) production of encouraging urban organic and healthy food production and sustainable agriculture, b) promoting healthy eating habits and the direct consumption of local products among urban consumers, and c) improving the physical and psychological well-being of the target population. For example, Solidarity Kitchen Garden "Horta Urbana Solidária de Faro"[145] (PT) is an urban vegetable garden, 100 m2 production area, distributed on the rooftop terrace of the Faro Municipal Market, consisting of cultivated vegetables, aromatic, medicinal, and spice plants, following the principles of organic/traditional farming. The project targets to (i) diminish the urban/rural gap (short food supply chain) by promoting organic production in an urban context and (ii) empower and promote the social inclusion of disabled children and low-income families, promoting environmentally sustainable and healthy food consumption practices. The initiative also (iii) distributes the production surplus (organic food baskets) to families in need, as identified by the municipality's Social Action division. In addition, the BUI collaborates with the Social Solidarity Institution, which is responsible for the garden and works with young people and adults with moderate or severe intellectual disabilities. The garden is also (iv) designed to serve as a training space, which promotes social inclusion by actively training people outside the education and professional training system who are long-term unemployed.

[143] https://botanicalife.wixsite.com/botanica-eng
[144] https://www.haricots.org/spip.php?page=projet&id_rubrique=3
[145] See here.

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In terms of addressing **ethnic and minority vulnerabilities** (83/165), the Open Gardens event, organised by the Finnish Garden Association yearly, seems to be a successful example as they have gathered around 60,000 visits to various garden locations around Finland. In 2021, Rovaniemi Women's Garden (FI)[146] was chosen as a site for this event. Women with immigrant backgrounds living in apartment buildings in Rovaniemi do not have many opportunities to grow herbs and flowers. Instead, the initiative aims to promote the idea of integrating immigrants, meeting them with locals living in private houses with gardens and needing help in their gardens. That is, combining "both the hobby of gardening and at the same time helped immigrant women get to know the Finnish way of life." Orten Odlar (SE)[147] is another example of sharing culture-related knowledge about different ways of harvesting certain foods, preparing food/cooking, and even seeds.

Not all but some BUIs focus on the effects of the **gender+** vulnerability factor. For example, the campaign carried out by ATIX Mulher (BR)[148] (the female branch of the Indigenous organisation of Women's Movement of the Xingu Indigenous Reservation Association) during the pandemic in 2020 for food and agricultural tools for the 16 ethnic groups of the indigenous reservation can be an example of ensuring women's emancipation and empowerment within traditional structures of indigenous communities in central Brazil. For more connections regarding this initiative, please see the previous RL5 chapter.

The gap between the urban and rural (122/165) diminishes by shortening food supply chains as an alternative food practice, which enhances the direct connection between the countryside and the city. A significant BUI that approaches small farmers who heavily rely on selling their produce as a vulnerable group (financial vulnerability) is ZMAG – Green Network of Activist Groups (HR)[149]. This BUI promotes pro-environmental values and education about sustainable food consumption through dedicated seminars and project implementation, often deliberately aimed at vulnerable groups. Interestingly, while many small family farmers in Croatia are unaware of the benefits of environmentally friendly food production, they also lack ways of connecting to wealthy urban consumers. Through education and solidarity network connections, these socially marginalised and low-income groups of producers are brought into a network with other progressive or vulnerable groups in the capital city. In addition, almost all food cooperatives, farmers' markets and alternative food network initiatives contribute to or enhance income generation for small-scale producers.

3.6.4. Implementation dynamics

Implementing the mapped BUIs is critical to driving a sustainable transition of the EU food system. **All mapped BUIs tend to have a strong, green, and sustainable objective**, and it is possible to suggest that most initiatives target promoting and integrating specific values (social, aesthetic, emotional, ethical, functional, and epistemic) associated with environmentally sustainable food (ESF) consumption. As these initiatives somehow focus on utilizing little natural resources, promoting organic food production, and making the

[146] See here.
[147] https://www.ortenodlar.se
[148] https://www.instagram.com/watatakalu/
[149] https://www.zmag.hr/hr/o-nama/nasa-prica.html

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distribution (packaging) sustainable as much as possible, they also resist the influence and production of large-scale and industrial food conglomerations.

Some BUIs' practices differ in form and function based on various ESF production and consumption values. However, **all appear to heed activating dynamics of integration and dialogue** on multiple fronts that favour care practices and respect for nature, reducing waste and creating short supply chains. To exemplify, whether the initiatives exist in the rural, urban, or peri-urban area, they make ESF products available through the in-person or online platform or both, and the consumer makes direct contact with the original farmer/producer within their network/structure. For example, in urban or peri-urban settings, there seem to be two primary forms in the mapped initiatives: vegetable/community gardens (set up at schools, rooftops, household food production and community parks) on the one hand and farmers' markets where local small or medium farmers sell their produce in the city weekly and food cooperatives on the other hand which both provide a physical (and socially constructed) space for the consumer to directly access locally sourced, affordable, fresh, and ecologically sound food in their community throughout the year.

All mapped initiatives put the initial emphasis on the appreciation of local food, where the food comes from (origin), how it is grown (agricultural methods), and how it is delivered to our tables (food processing and distribution). Among many short food supply chain initiatives are a few cooperatives that distinguish themselves from others by connecting artisans and their handmade food cooked with traditional methods or seeds with local consumers. Paysans-Artisans (BE)[150] is such an example. The BUI prepares events where local producers and consumers can meet artisanal farmers from Africa, Asia, and other parts of Europe. Apart from that, through outreach and educational activities centred around rethinking the food chain, the BUI also teach people to think differently and prepares them for another way of doing things regarding food and agriculture.

More added values are created in ESF production and consumption. For example, ESF consumption is associated with **economic and social values**. All BUIs mapped target shortening distances between producers and consumers in urban areas by eliminating intermediaries. From both a social and environmental perspective, the advantages of shortening the food supply chain (SFSC) are twofold. First, SFSC aims to offer lower food prices to the end consumer and higher income to the small producer, creating a social and solidarity economy between the consumers and the local producers. Therefore, direct purchases from small farms and small-scale rural producers support local producers to access the market firsthand (income generation for small-scale farmers or farmers once landless) and compete against larger producers with predictable sales demands. This undoubtedly strengthens the rural economy and development, and diminishes the urban/rural gap as it emphasises local and regional food production in highly densely populated metropolitan cities. Second, apart from promoting mutual collective benefit, reciprocity creates bonding and solidarity between the producers and the consumers over food. This solidarity is further solidified and encouraged by some of BUI's mechanisms to support the active participation of producers and consumers in the decision-making procedures of all processes (such as production and distribution).

[150] https://paysans-artisans.be

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Some BUIs are more extensive in scope, carrying out multiple activities with a robust cooperative network between clean food producers and consumers in the big cities. For example, Hrankoop (BG)[151] is Bulgaria's first food cooperative set up by a group of people seeking pure food in big cities. The group also focuses on direct contact and dialogue with locally produced organic food producers, organising weekly farmers' markets. Solidarity actions, where volunteers are invited to work in the member organic farms, developing educational programs, and urban agriculture are among their key activities and implementations. Another similar example is Bugday Association for Supporting Ecological Living (TR)[152]. Kadıkoy Co-op (TR)[153] and UltiMat (SE)[154], a food cooperative initiated by Ultuna Student Union in Uppsala, strives for food production consisting of fewer toxins, greater biological diversity and good animal welfare, are other impactful examples. All these cooperatives work according to the seven cooperative principles: Voluntary and open membership; democratic governance by members; economic participation of members; independence; education; cooperation between cooperatives, and finally, community care.

For a group of BUIs, many references are attached to ESF consumption associated with **aesthetic values** such as product taste, freshness, and quality. Many initiatives aim to fight market inefficiency by changing consumption patterns and creating an alternative market for "ugly" fruits and vegetables. An example is Fruta Feia Co-operative (PT)[155] which works directly with local producers, going to their farms to purchase the small, big, or misshapen fruit and vegetables they cannot sell. This reduces the waste of tons of good quality food thrown out by farmers yearly and enables all quality fruits and vegetables to be marketed equally, regardless of their size, colour, and shape. The project has prevented, until June 2022, 3858 tons of fruits and vegetables from going to waste due to their appearance. Another example is Mercado Diferente (BR)[156], an online platform seeking to democratise healthy food consumption while fighting food waste in Brazil. They work with local organic farmers to rescue "out of shape" food that would usually be thrown away and deliver them to people in Sao Paulo at a 40% cheaper price when the product has high quality but is aesthetically out of standard.

Data suggests that mapped BUIs approach food losses and waste with a **dual attitude**. A few BUIs approach **food waste with environmental concerns,** such as wasting natural resources involved in food production and distribution, and production of methane as a result of the wasted food in landfills. Other BUIs approach **food waste with social and humanitarian concerns,** such as enabling all people to access nutritious, clean, safe and sufficient food. Thus, in some BUIs, ESF consumption is associated with **an equity value.** Food equity is achieved by limiting food waste and assisting vulnerable people with little access to healthy foods by processing excess fruit and vegetables from farmers. This is noticeable in the case of “Robin Food” (BE)[157]. This initiative started during the pandemic, creating healthy food products out of excess vegetables, such as juices, soups, sauces, and spreads sold in social grocery stores at low and affordable prices. While the project

[151] https://www.hrankoop.com/
[152] https://www.bugday.org/blog/the-bugday-movement/
[153] https://kadikoykoop.org/
[154] www.ultimatultuna.se/
[155] https://frutafeia.pt/en
[156] https://www.mercadodiferente.com.br/
[157] https://www.robinfood.be/

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transforms food leftovers into valuable products, it makes healthy food options accessible to socially vulnerable groups. Fundació Espigoladors (ES)[158] is an interesting and notable initiative that fights against food waste and losses while empowering people at risk of social exclusion in a transformative and inclusive way. Lastly, Save the Food (CZ)[159] is a striking example in this context.

Some mapped BUIs that deal with global sustainability issues, climate change, and related environmental aspects attach **educational value** to ESF consumption. These BUIs directly develop opportunities for educating the public, primarily the children and youth, in agricultural and ecological appreciation and conservation through educational programs. The BUI "Oasis for Children" in Croatia[160] is a significant example. Some target children in elementary school (6-12 years old – Ecologisch op school "'Ecological at school" (BE)[161]) and children of secondary education (12 and 18 years old – e.g., School Food Lab (BE)[162]) to consume ESF and learn more about healthy food growing practices. From the mapped initiatives, they do this by transforming the food provided at school (making it more sustainable at the school cafeteria) and building rooftop farms/gardens in collaboration with the school authorities. Their actions are not limited to the physical transformation of the school but also the school teachers to grow and maintain vegetable gardens at school, reducing food waste, and consuming seasonal vegetables and wild edible flowers/plants and weeds. Eco-programs have been embedded in school programs and have been implemented annually for a long time. This includes nature schools implemented in Finland and Eco-Escolas (Eco-schools) in Serbia[163].

Some BUIs **indirectly target raising awareness** on these issues as ESF consumption is associated with **epistemic value.** For example, besides establishing the direct connection between the producer (rural) and consumer (urban), farmers' markets or food co-ops also function as a means of advancing people's knowledge or educating the public (often on learning more about agriculture, nutrition, or the benefits of local foods). For example, Na mysli (CZ)[164] is a non-profit organisation engaged in educational work on climate change, food security, sustainable agriculture, and the UN Sustainable Development Goals. To this end, they organise a film festival that includes screenings of environmental documentary films, debates with experts and thematic workshops. In addition, they create educational materials (brochure/methodology/worksheets) for schools and teachers about food waste, food security and sustainable consumption. They also generate boarding games about climate and distribute them to various institutions to make them accessible to vulnerable groups. Moreover, summer camps for kids and young people in nature focused on awareness raising are another activity many BUIs maintain in their implementation.

A growing number of multifunctional farms is also noticeable in rural areas. Their multifunctional operations may improve farm viability in the long run and enhance economic opportunities for rural communities. An interesting example mapped is the establishment of

158 https://espigoladors.cat/
159 https://zachranjidlo.cz
160 https://oazainfo.hr/oaza-za-djecu/
161 https://velt.nu/ecologisch-op-school
162 https://www.goodfoodatschool.be/nl/school-food-labs-0
163 https://alimentacaosaudavelesustentavel.abae.pt/
164 https://namysli.com/

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care farms in Poland[165], co-funded and coordinated by the EU and different government bodies, in the context of social agriculture. Apart from the social function of these farms, farmers create job opportunities and income through the support they get in farming and gardening activities. These farms, also referred to as Foster farms, are considered as a form of social farming. They contribute to the sustainable development of rural areas and social integration of the elderly and different groups with multiple vulnerabilities, such as people with physical disabilities, mental illnesses, people struggling with addiction, and people experiencing long-term unemployment. Another example can be Kilombo (ES)[166], which is a remarkable network of several integrated actions and projects. Further detail about this inspiring initiative is shared in the previous chapter (RL5).

A few mapped initiatives attempted to **revive the use of ancestral seeds**. For example, Smart food hub Älvbyarna (FI)[167] is an example that targets sharing knowledge about how local food cultivation and food conversation can be used to create a sustainable future. The project includes taking care of old heritage seeds typical of the region to preserve the agricultural heritage by collecting seeds and plants with specific origins in Ostrobothnia. Seeds from the cultivation will be included in the municipality's seed library, where private individuals can borrow seeds in the spring and return new seeds in the autumn.

There are cases where ESF consumption and production are associated with **a value supportive of mental health and well-being.** These initiatives seem to build on existing evidence for ecotherapy concerning mental health outcomes and tailor this to a food context. Mindfood (UK)[168] is a noteworthy example that offers food-growing (edible gardening) and creative sessions (a 6-week course, 'Growing Wellbeing') in natural green settings for people suffering from common mental health problems such as stress, depression, and anxiety. It has integrated with the healthcare system such that vulnerable groups (mental health service users) can be referred to the BUI for support, but it is also inclusive in that people can self-refer. A vital part of the BUI's success appears that many people who now run the organisation were originally service users and wanted to contribute back to the BUI when they recovered their health. For example, Biokofinaki (GR)[169] is a basket of fresh products grown on the 3.5 acres of the farm of Argo, the first social cooperative integration enterprise for addicts located at the Psychiatric Hospital of Thessaloniki in Stavroupoli. The cultivation has been undertaken by people who have been detoxed, parents of addicts and employees of the Argo rehabilitation program.

While young farmers' involvement in agriculture is vital in farm productivity and food production, thus the rural communities and areas development, there is not much information regarding this issue in the mapped BUIs. None of the initiatives explicitly reveal a connection with young farmers who may be more likely to be risk-tolerant and open to adapting innovative techniques and methods in sustainable farming practices and conservation and new products to grow. As a last note, although words such as sustainability, ecology, environmentally sustainable, and even organic are used constantly, there is a very little explicit reference to pesticide-free agriculture, regardless of the land

[165] https://carefarms.sk/poland/
[166] See here.
[167] See here.
[168] https://www.mindfood.org.uk/
[169] More details here.

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size and farming. In this respect, NGO Tartu Organic Community Garden (EE)[170] is a collective of people interested in organic urban gardening. Participants follow the principles of organic gardening and do not use herbicides and pesticides, and take care of the land and soil. The urban & peri-urban crop Group PERKA (GR)[171] is similarly a good example of an initiative that cultivates seasonal vegetables according to the principles of organic, biodynamic and natural cultivation, with traditional methods and with means that do not affect or cause damage to the ecosystem, co-farmers and residents.

3.6.5. Justice

From the descriptions of the BUIs, some tentative **justice dynamics** seem to emerge.

The majority of the BUIs contribute to justice in several aspects. First, **distributional justice** is the strongest form among the initiatives dealing with ESF consumption and the values attached to it. Fair allocation of food resources among diverse and vulnerable community members emerges as key to the activities of the vast majority of the BUIs. Farmers' markets and initiatives that act towards transforming excess food and food waste into healthy food and distributing it to disadvantaged groups are the results of this target. Porto Alegre Eco-Farmers' Market (BR)[172], founded in 1989, is noteworthy for its values as an association. It is because the association started taking shape in the 1970s, during Brazil's military dictatorship, and promoted democratic values and local knowledge in contrast to the country's political reality. As a well-established initiative, it is part of a weekly tradition in Porto Alegre, made up of 44 stands from 32 cities in Rio Grande do Sul State, benefiting 122 families of farmers.

Many BUIs create space for vulnerable groups such as prisoners, homeless people, and people with disabilities. These initiatives address their needs/challenges as providers of and advocates of **recognition (inclusive) justice**. They favour inclusion in terms of integration and re-integration. An example is Planting Justice (USA)[173], as mentioned in section 1.2, which worked with five high schools to develop food justice curricula and created over 40 green jobs in the food justice movement for people transitioning from prison. Alma Backyard Farms in Los Angeles, California[174], is a similar example, also explained above. The original impetus of the organisation is to provide offenders and those formerly incarcerated an opportunity to learn the skills to re-enter society productively. The programming is rooted in "restorative justice and environmental stewardship" and creates a space for offenders to give back to a community they '" took from' and were taken away from."

Matmissionen "The Food Mission" (SE)[175] is another example. The Nordic region's first social supermarket provides food stores where low-income people can apply for membership. The BUI allows membership to those with maintenance support, a guaranteed

[170] https://tartumaheaed.ee/
[171] https://www.facebook.com/perka.org
[172] https://feiraecologica.com.br/fae
[173] https://plantingjustice.org/holistic-re-entry/
[174] https://www.almabackyardfarms.com/
[175] https://www.stadsmissionen.se/vad-vi-gor/matmissionen

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pension, daily allowance from the Swedish Migration Board, or another support for the financially disadvantaged. Additionally, anyone who lives on sickness benefits, unemployment insurance funds, or a salary below a certain level can also become a member. Membership at Matmissionen gives a discount of up to 1/3 or less of the regular price. While the range of products consists exclusively of food waste donated by the grocery industry, in addition to the goods sold to Matmissionen's members, food is also delivered to small businesses that cook and serve food to other vulnerable target groups - for example, homeless people.

Another example is creating a place where autistic children [176]can get involved and work once they have finished school. The Co-operative Agricola Giuseppe Garibaldi (IT)[177], born in 2010 in Rome, responds to this question of addressing the needs of children with disabilities and their families. The great novelty of this cooperative is that the founding members are precisely them, the autistic children who engage in different work experiences such as tending the garden, selling organic products, or cooking and serving in the cooperative's restaurant. Similarly, the psychosocial rehabilitation program "Green Unit" (GR)[178] is one of the many programs of the hospital in which people are allowed to take on responsibilities and work, such as the maintenance of green spaces, seasonal pruning of trees and shrubs and the harvesting of olives and other agricultural products. In the Thessaloniki Psychiatric Hospital Green Unit, patients also participate in educational activities, such as visits to seasonal exhibitions and greenhouses, and hospital occupational therapy activities, such as cooking and cleaning. It is one of the few programs in Greece that prepares participants for reintegration into society after gaining practical experience. One of the program's biggest successes seems to support people who face the stigma of mental illness every day by engaging in meaningful activities.

In terms of **gender justice**, there is an operational variety among the initiatives mapped. Based on researchers' notes on the BUIs, a few organisations are non-hierarchical and promote using gender-sensitive language. But this doesn't mean that other BUIs are hierarchical or don't use gender-sensitive language; maybe they just do not mention this feature. For example, NeSehnutí (CZ), an independent social-ecological movement in Brno, approaches the causes of societal problems from an intersectional perspective. Fair society (gender equality), thriving nature, sustainable city development, and prosperity of animals constitute the future they help to create. They also educate kids with a campaign on sustainable and healthy food in school canteens. Moreover, they deal with gender equality, the LGBTQI+ community, national minorities, or migrants and make the potential of an "interconnected" collaboration more visible by actively participating in the Prague Pride festival in 2021.

Some initiatives created and organised by young people – specifically young girls – shape the policies and structures that enhance the participation and empowerment of women and girls. This is the case for Food Pick-up Point (LV)[179], a community refrigerator where people can exchange, take, or leave excess food. The goal and idea of the project are to reduce

[176] As far as social farming projects involving autistic children are concerned, there are many initiatives organized by various associations in Lazio and throughout Italy (see, for instance here).
[177] https://garibaldi.coop/
[178] https://mprasinou.psychothes.gr/
[179] https://www.facebook.com/Food-Pick-up-Point-107930347809457/?ref=page_internal

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food waste in Latvia while providing support for low-income families and individuals. The researcher of this mapping suggests other food exchange fridges in Latvia (Kopienas skapis "Community Cupboard"). However, this initiative is singled out as a BUI due to its bottom-up character, and the agency of two school girls who are still attending school.

Gastro & Sustain (DE)[180] is another example. It is a three-year (2022 - 2024) EU-funded collaboration between government actors, academia, the restaurant industry and schools from various parts of Europe. The project focused on sustainable practices and gender inclusivity in the culinary industry. The researcher of this mapping argues that gender imbalance (with few women, in particular, entering the profession) in the chef industry is a European-wide problem. In this respect, the project responds to a lack of sustainability in the culinary industry (especially due to food waste) and a shortage of qualified chefs and cooks in Europe. Thus, on the one hand, this BUI encourages students (particularly middle and high school girls) to learn about cooking and consider careers as chefs or cooks. On the other hand, the initiative encourages them to learn more about food production and consumption, help develop solutions to reduce food waste and influence their overall food values. Students also undertake exchanges with sister project schools and visit local restaurants and food producers.

In terms of **environmental justice**, there are some BUIs mapped that focus on healing land by converting soil or the land into a flourishing community via regenerative agriculture or setting up ecovillages. In this respect, the first example is the Ura Gora Foundation “Hurray for the Forest” (BG)[181], an initiative of a few like-minded activist families who create an ecological community of so-called family estates in South-East Bulgaria. The focus of their activities is sharing their experience in ecology, community building, permaculture, and education in sustainable development. The BUI also organises volunteer groups, summer camps, and other educational initiatives, “growing in abundance, land-healing and sharing in the creation of a regenerative future from the heart of our developing forest gardens in South Bulgaria.”

The second example is Anatolian Grasslands (TR)[182] which addresses the soil crisis by pointing to the role and importance of the soil in the broader ecosystem. They define the problem as soil degradation and loss due to industrial agriculture practices and the intense use of chemical herbicides and pesticides. Their answer to the big problem of soil degradation, followed by the poor quality of food, non-nutritional food, biodiversity loss in terrestrial areas, and desertification, is regenerative agriculture. Volunteers, farmers, people from cities who want to be farmers, and local authorities attend training and receive education at the initiative's site/land, where they can observe, document, and witness regenerative agriculture practices. That covers all techniques, methods, practices, and research that improve ecosystems, soil and water assets, and all kinds of living diversity while producing food for human beings. The NGO Soil Innovation Cluster (EE) is another significant example in parallel lines.

[180] https://gastroandsustain.com
[181] http://ura-gora.org
[182] https://www.anadolumera.com/en/anadolu-meralari

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Finally, Ireland's first ecovillage can be an example within the same framework. Over 50 households live in low-carbon homes built in the Cloughjordan Ecovillage (IE)[183]. The Cloughjordan Community Farm[184], established in 2008, is a community-supported agriculture model supplying fresh produce to over 70 households. Thus, the ecological footprint of villagers is less than half the national average, and the ecovillage has become a model for environmental sustainability and community resilience. An additional success has been the integration of the ecovillage and residents with the existing town and community in Cloughjordan to rejuvenate a rural town rather than building an isolated community. However, the researcher hints that the village becomes largely inaccessible for vulnerable groups due to the lack of diversity among the residents.

Few BUIs that focus on improving environmental outcomes towards non-human species (**ecological justice**) are mentioned in the mapping. As an example, "Bee Connected" – Food for Tomorrow (CS)[185] is an initiative that is devoted to promoting urban beekeeping by creating beehives and educating new beekeepers to preserve city bees and other useful insects together. The BUI promotes urban beekeeping as an acceptable, sustainable practice in urban areas in the field of urban ecology for renting and maintaining beehives for socially responsible companies and individuals. Additionally, the BUI launched a local campaign in 2018 to raise awareness about the global and regional issues related to bees and other pollinating insects. Thus, the organisation also provides professional assistance to companies interested in setting up beehives in open spaces or on the roof of a building, thereby supporting the survival of bees in the city.

3.6.6. Drivers and barriers of BUIs

Table 12 – RL6 drivers and barriers

Drivers:

- Pro-social environment
  - creating new social spaces, transforming local culture, building community
  - good organisation of volunteers
  - being truly bottom-up and led by vulnerable groups.
  - the strength of social bonds in a given area, facilitating to support collaborative projects, sustaining traditional events, etc.
  - having environmental concerns, shortening the food supply chain, knowing the producer in person
  - creating alternative markets for human consumption, producing food for their community, and food security crisis as a motivational reason to improve the old system and find alternative systems.
- Local culture
  - increased demand and awareness of the need for local organic food and sustainability
  - the urgency of environmental problems that need to be solved comprehensively and with the active involvement of all residents in a community (biodiversity in the cities, sustainable transport, urban gardening, and community gardens)
- Expertise
  - transnational solidarity movements and connections that disseminate knowledge and expertise

[183] https://www.thevillage.ie/
[184] https://cloughjordancommunityfarm.ie/
[185] https://ekonaut.org/en/beeconnected/

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- strong leadership of individuals from vulnerable communities. It is also helpful when the network leaders have good communication with the sponsors and the collection of donations is well organised.
- some leading actors have extensive experience in international networking and formal project applications that could be used to buffer the risk of losing the successful financial operations for the programs targeted at vulnerable groups.

- Helpful environment
  - gardens as an urban space that provide an exciting and enjoyable space for city dwellers and awareness of developing sustainable and healthy food consumption practices
  - excessive/surplus food during Covid-19 and distribution of this food for free or at a discounted price to people who live in poverty.
  - providing opportunities for financial independence and income generation
  - resorting to online sales for local deliveries during Covid-19, resulting in a formation of a strong network of producers and consumers
- Aiming to put farmers and consumers back at the heart of the food system against industrial agriculture and big food co-operations, which take decision-making away from farmers, who do not have any control over food prices

Barriers:

- Unhelpful global environment – soaring inflation affecting producers and consumers.
- Lack of internal or external financial resources – some programs survive the discontinuation of state funding after its pilot phase and recently the Covid-19 crisis, and some don't.
- Lack of internal or external financial resources – difficulty in raising the financial resources needed for the initial investment and afterwards difficulty in sustaining voluntary programs without stable project funding (e.g., reliance on donations)
- Lack of adequate human resources
  - since the BUIs depend on volunteer labour and participation, running on goodwill and community-mindedness, these initiatives can be vulnerable to dissolution due to higher turnover of its members. No formal commitment: people have different life situations and thus find it difficult to commit full-time. Also, any change in life circumstances (for example, entering the university) may reduce the devotion to the projects
  - Lack of structured organisation and adequate training of operators to act as tutors in the apprenticeship of vulnerable people, particularly people with disabilities, in some initiatives
- Lack of technical assistance and infrastructure – some BUIs have an inconsistent online presence (e.g., no website but an Instagram and Twitter page) that makes knowledge-sharing difficult
- Unhelpful environment
  - rules and regulations about food, hygiene, and the handling of (presumable) food "waste"
  - some BUIs may be sensitive to seasonality, and much of their work occurs in a short window in the autumn rather than being spread over the year
  - displacement of vulnerable groups due to gentrification (wealthy people moving into lower-income areas, taking advantage of low-cost housing in "cool" urban centres, rise in property values, increase in property taxes) and loss of access to communal support and gardens
  - the projects may be cancelled or put on the shelf when the municipality mayor changes, and when replaced by a different political party, the project can be easily suspended
- Time availability – although people may find accessing organic and local food purchases important, participation in a cooperative often requires more time and energy
- Local social culture
  - members and volunteers poorly contribute to the cooperative principles and practices
  - contact with the farmers may be difficult because they may lack confidence in the success of the BUI's project

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3.6.7. Selected inspiring cases

Table 13 – Inspiring cases of RL6

Country Name / Website	Description
SPAIN *The Col-lectiu Eixarcolant* https://eixarcolant.cat/	**The bottom-up initiative** The Col-lectiu Eixarcolant aims to promote a more sustainable, ethical and fair model of food production, distribution and consumption, and socio-economic development by recovering edible wild species and traditional agricultural varieties. To advance in the transformation of the agri-food and socio-economic model through the recovery and valorization of wild edible species and traditional agricultural varieties, it operates on the following lines of action: • Recovery of traditional varieties and wild edible species. • Territorial dynamism, generation of synergies and social transformation. • Applied, basic research and knowledge transfer. • Dissemination and training for all kinds of audiences. • Preparation of informative material. • Agricultural, business, food and gastronomic consultancy. • Manual tools to improve the efficiency of small-scale agriculture. • Sale of recovered species and varieties. • Development and marketing food products based on wild species and traditional agricultural varieties. • Naturalization and sustainable management of green spaces in urban areas **Environmentally sustainable and non-sustainable food values depending on culture (countries), age groups, gender, or key vulnerable groups.** • Valorization of species that help to change the consumption and agri-food model based on sustainability and proximity. • Three books containing more than 88 edible wild plants. • Recovery of more than 600 edible and traditional species and more than 200 traditional fruit trees. • More than 300 informative activities per year.
HUNGARY *Kiút* https://kiutprogram.hu https://kiutprogram.hu/english/abouttheprogram/	**The bottom-up initiative** It is a work-integrated training program in which vulnerable people with a predominantly minority background (Roma) are provided with training and mentoring on how to grow cucumbers on their land and generate income by selling the surplus through companies contracted by the program maintainers. In addition to practical agricultural, entrepreneurial, and accounting skills, underserved, vulnerable people learn pro-environmental values and obtain education about sustainable food production and consumption. Vulnerable groups: People living in extreme poverty in North Eastern settlements in Hungary (predominantly of Roma origin, but the program does not have per se a minority character) who can become registered as primary producers or family entrepreneurs and thus be able to live from their jobs as producers of sustainable agricultural food (mainly cucumber). The Kiút program is run by a private non-profit limited company whose main shareholder is the Polgár Foundation for Opportunities, an NGO established by private persons from the business sector who strive to use their wealth to support vulnerable people through different projects. On-the-field training is provided by field workers trained and employed by the NGO - their responsibility is to have daily contact with the vulnerable people participating in the program and support them in each step towards establishing their own successful sustainable agricultural production, i.e. obtaining the microloan, developing the field to be used for plantation, getting the necessary

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	materials and equipment, establishing and maintaining contact with the purchaser of the surplus food, accounting, etc. Raiffeisen Bank provides the participating people with a microloan of around HUF 150-200.000 (around EUR 500), which is needed to start their business. The microloan system - a model taken from the original Grameen system and adapted to Hungarian conditions - is an integral part of the program because it builds trust within the system where vulnerable people learn to take self-responsibility and overcome the so-called learned helplessness. Interested municipalities in Hungary's most disadvantaged regions were found to be able and willing to work with the field workers employed by the Polgár NGO (currently 15 settlements). An adequate number of field workers were employed and trained to support the vulnerable people participating in the program. In addition to social skills, they should possess environmental, agricultural, administrative and financial knowledge. **Environmentally sustainable and non-sustainable food values depending on culture (countries), age groups, gender, or key vulnerable groups.** Through awareness-raising and dissemination activities, interested vulnerable people got involved in the program in 2020; due to the difficulties caused by the ongoing Covid-19 crisis, 63 producers were involved from the 15 rural settlements (the peak period was around 100 people in 2015-16). Each producer receives an innovative work-integrated training and mentoring program where pro-environmental values associated with food consumption and production are also taught with the final aim of providing vulnerable people with skills that can move them out of their deprived situation through better labour market integration. In 2020, 316 tons of cucumber were bought for more than HUF 50 million from 63 local food producers. The participating people receive an average of HUF 350,000 extra income after paying the costs for their work. Beyond the immediate financial added value of the program, vulnerable people participating in it gain such skills (environmental and labour market-related) that can support them in their labour market (re-)integration. Based on the data available, there are many who, after working with the program, can find a permanent job in the formal economy.

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3.7. Research Line 7: Transport Poverty

3.7.1. Mapping analysis of the BUIs

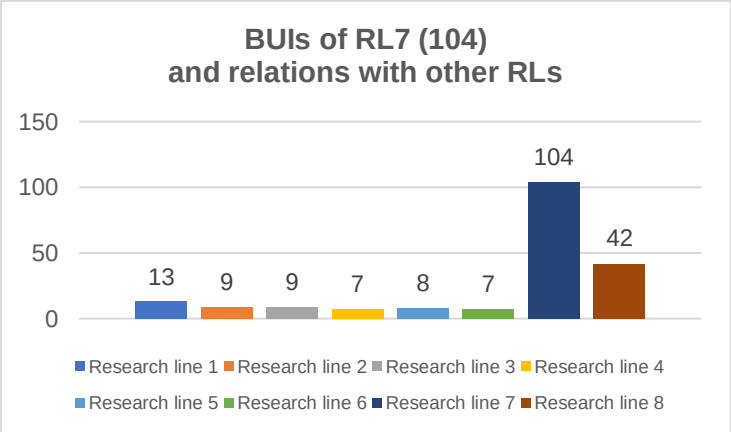

Figure 26 – Implications of RL7 with other RLs

The total number of BUIs analysed in RL7 is **104**. Analysing the researchers' responses, as shown in Figure 26, these BUIs have relationships of some kind with **RL8**. This is due to the interconnections between the two research lines (RL8: *Post-lockdown sustainable mobilities: centring cycling and walking*).

3.7.2. Degree of involvement of actors

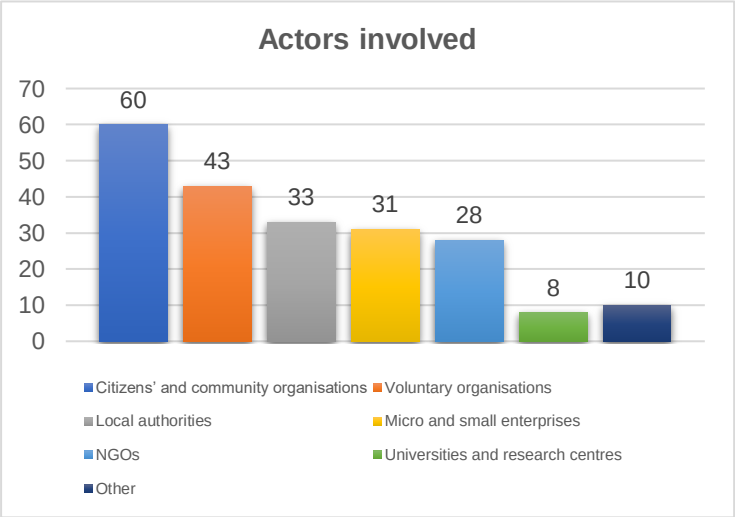

Figure 27 – Actors involved in RL7

*The main involved actors in the 104 BUIs of RL7, as shown in Figure 27, are **citizens (and community organisations (60)**, followed* by **voluntary organisations (43)** and to a lesser extent **local authorities (33)**. Placed just below, there are **micro and small enterprises (31)**.

These data suggest a lively interest of civil society organisations around the topic of the RL7 BUIs, often with the involvement and support of local authorities.

This high proportion of **citizens and community organisations as well as voluntary organisations**, illustrates the bottom-up nature of the majority of the BUIs mapped. These organisations have various profiles. Most are small, and they sometimes started as a project inside a larger NGO, like Bicpop[186]: a bike repair collective that was initially part of the NGO

[186] http://biciklopopravljaona.zelena-akcija.hr/p/o-nama.html

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Green Action, the largest national environmental NGO in Croatia. Religion-related initiatives often target the poor. But most initiatives come from environmentally conscious citizens who feel the need to act for change and target mobility poverty directly or indirectly through their initiatives.

Local authorities are often the partner of the BUI initiator. They will provide support through subsidies, through giving access to target groups and/or resources, or through investments in e.g., the adaptation of infrastructure (bicycle lanes, safe pedestrian crossings). Local authorities are sometimes the initiator of the BUI. This is the case for a few of the bike-sharing systems mapped (Helsinki[187], Torres Vedras in Portugal[188]), for developing long-term plans like the sustainable mobility plan in Thessaloniki[189], or in Oslo with the age-friendly city initiative[190]. Municipalities also try to reduce the cost of public transport for vulnerable groups, like the free public transport in Tallinn, Estonia[191], or the free public transport for the elderly in Iași, Romania (lifetime cards for retired people)[192].

Universities and research centres are only marginally present in the BUIs on mobility poverty.

Interesting is also the involvement of **small** as well as **big companies.** A very small number of BUIs are initiated by small companies, like the Estonian start-up AS Bercman technologies, who develops smart pedestrian crossings to improve the safety of pedestrians[193]. Other small companies act as technical support or sponsors. This is the case in some of the schemes to collect second-hand bicycles, repair them and donate or lend them to vulnerable people. Large companies will **rather** appear as sponsors as in the case of Bike Parada Não Rola (BR)[194] (see RL8 chapter).

187 https://www.hsl.fi/en/citybikes
188 https://www.cm-tvedras.pt/mobilidade/agostinhas/
189 https://www.svakthess.imet.gr/
190 https://www.espon.eu/sites/default/files/attachments/12.%20ACPA_city%20report_Oslo_1.pdf
191 https://www.eltis.org/discover/news/estonia-launches-largest-free-public-transport-scheme-world
192 https://arsc.ro/iasi-smart-city-carduri-gratuite/
193 https://bercman.com/wp-content/uploads/2022/04/Ettevo%cc%83tte-kirjeldus-ENG.pdf
194 https://www.aromeiazero.org.br

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3.7.3. Initiatives' effects on vulnerabilities

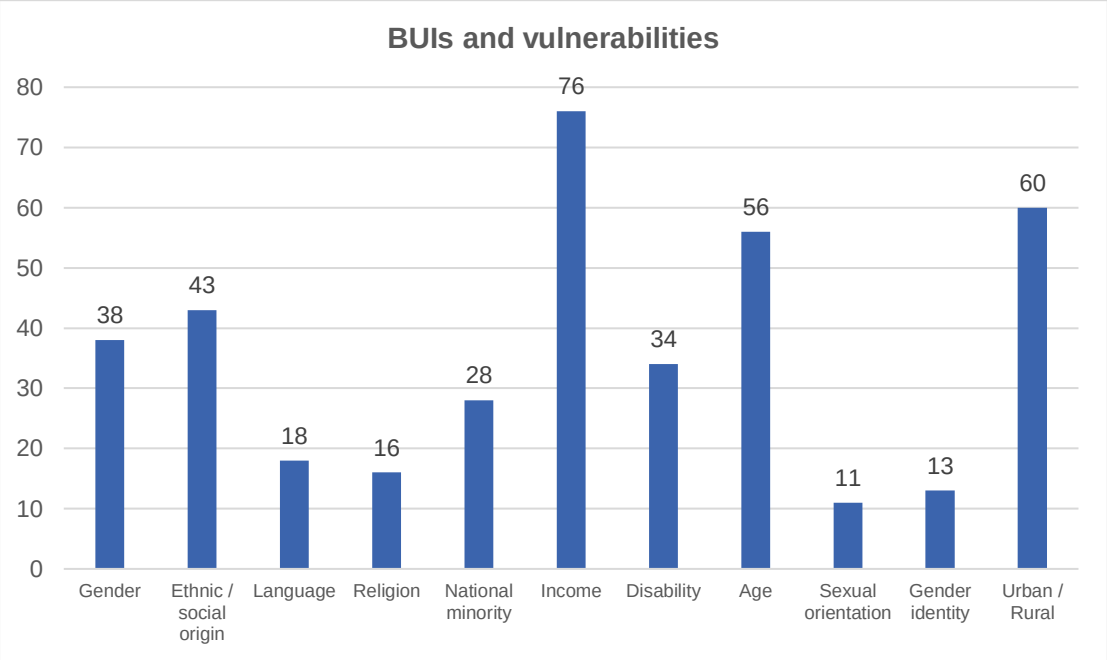

Figure 28 – BUIs and vulnerabilities in RL7

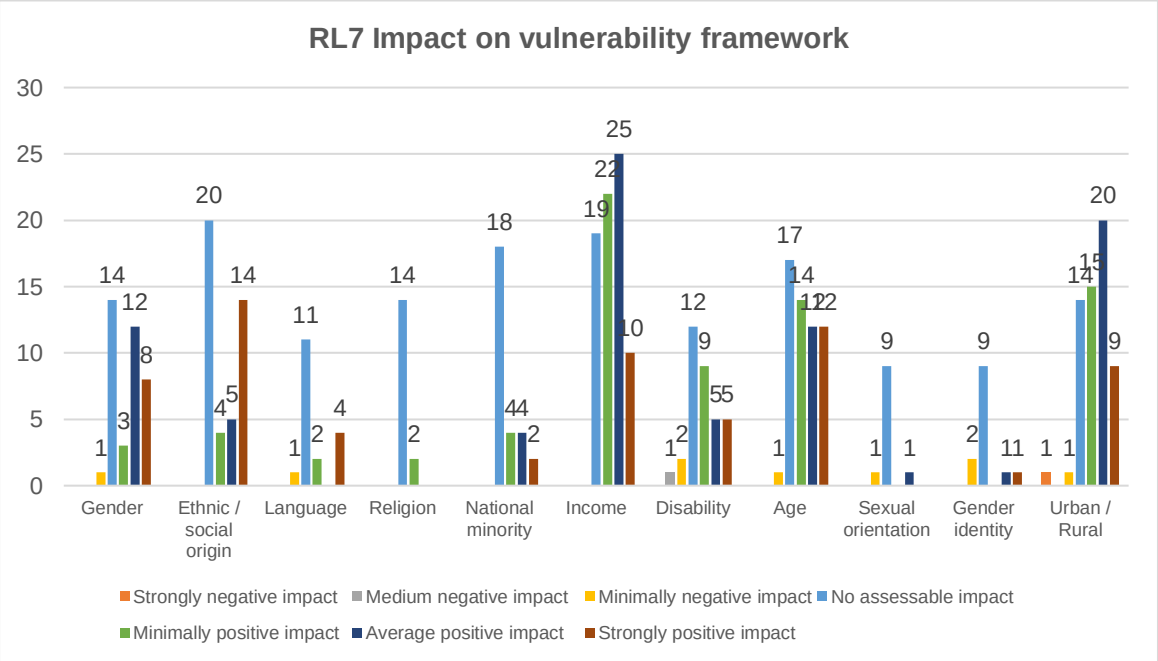

Figure 29 – Impacts of BUIs on vulnerabilities in RL7

The Figures 28 and 29 show that the positive impacts far outweigh the negative impacts and the areas with the greatest positive impact are: **Income**, **Age**, **Urban/Rural**, and **Gender**.

Many of the BUIs do not target specific vulnerable groups but are designed to be inclusive, reducing barriers or improving access to all and, therefore, also the most vulnerable. One

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of the main barriers addressed is the cost of (environmentally friendly) mobility solutions. This explains the high score of "**income**" (78/104) as a vulnerability ground, as many BUIs work at reducing this cost. Sharing solutions (cars, bikes, ride-sharing, cargo bikes, …) are examples. When these initiatives also have a non-profit business model, the cost is even lower.

When BUIs do target specific vulnerabilities, this is nearly never based on language, religion, national minorities, sexual orientation, or gender identity. **Ethnic or social origin** (43/104) is a target for BUIs that address the needs of migrants and/or refugees, typically to help them use the bike (learning to bike, learning to repair, and access to bikes for free or at low cost). Kompis Sverige ('Friend Sweden')[195] is an example. This non-profit integration initiative organises a buddy programme between people who recently moved to Sweden and people who have lived in Sweden for a long time. While the focus of the initiative is on the integration and language acquisition of new arrivals to Sweden, this integration also encompasses mobility-related activities like popular bicycle classes that introduce people to the bicycle as a viable and environmentally friendly way of moving around.

The **elderly** is another example of a specific target chosen by BUIs. This is often to improve their access to public transport as well as to other soft modes of transport. When public transport is not adapted, this means complementing public transport with additional offerings. An example is "Stap in, stap uit" ("Step in, step out") in the city of Zutphen in the Netherlands[196]. Volunteers drive two small electric buses that shuttle between the city centre and residences where many senior citizens live. The shuttle is also used by disabled people.

Linked to the age vulnerability factor (56/104) are also **children and youths** who are the target of a significant number of BUIs. This is mainly linked to improved safety allowing them to use soft modes as well as improved access to soft modes for children at risk of poverty. The "bus" approach for walking and cycling is an example of this drive for safety on the way to school. Various initiatives are popping up to organise groups to either walk or cycle to and from school. Piedibus in Caserta, Italy[197], is an example of a walking virtual bus with predetermined routes, stops, and a schedule. Original to this initiative is that some of the "drivers" are asylum seekers who, through their involvement, get opportunities to meet and relate to the city's inhabitants.

Gender seems to be impacted mainly as a general binary aspect (38), while they seem to be trivial issues like sexual orientation (11) and gender identity (13).

3.7.4. Implementation dynamics

Transport poverty as it appears in more rural areas is characterised by a complete or partial lack of public transport coverage. Certain initiatives, often on a small and very local scale,

195 https://kompissverige.se/
196 https://www.stapinstapuit.eu/
197 https://www.piedibus.it/progetto/

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have tried to compensate for this absence by connecting volunteer drivers of private vehicles with people who have no private transport options and are restricted by the limited public transport time schedules in their village or town. This connection happens in several different manners and promotes more sustainable car-sharing and carpooling activities. Some initiatives work with volunteers that can be contacted by phone and/or that work with a fixed schedule at certain times of the day, which is the case for the 'Virger Mobil' (AT)[198] initiative. Others operate active social media pages through which users can find each other or work with dedicated apps that connect potential drivers and passengers who have a similar destination. An innovative approach with a positive feedback loop utilising specially designated public benches that signal to drivers where the occupant wants to go is prevalent in Germany and is covered in more detail below. Other sustainable alternatives include initiatives that provide electric buses, like the solar-powered Zonnebus in Cuijk (NL)[199], and car-sharing arrangements that try to eliminate the need for privately owned cars (electric or not). These arrangements are oftentimes, but not necessarily, targeted at specific vulnerable groups that experience issues with other forms of transport, like the elderly or people with a disability. The move from owning a form of private transport to a more communal form of sharing transport seems relatively successful in these initiatives and could provide a blueprint for other towns and villages struggling with transport poverty.

Another method of countering the effects of transport poverty consists of bringing (back) vital services to small villages, towns, and neighbourhoods. When shops and services largely disappear from an area or were never there, to begin with, residents have to travel farther to access them and often don't have the means to do so. A few of the initiatives that were mapped attempted to bring these services closer (again) to the populations of underserved areas, and therefore contributed to mitigating some of the profound negative effects of transport poverty. These include the Dorpspunt ('Village Point') initiative implemented in Belgium – covered in more detail below – and the Favela Brasil Xpress (BR)[200] project. This latter initiative utilises networks of local bikers and delivery persons to bring mail and other products to favelas that are deemed no-go zones by ordinary postal and delivery services. Because these initiatives reduce the need for people to travel far outside of their residential area for basic products and services, they likely reduce environmental impacts on top of their positive social impact as well. While these kinds of initiatives were only mapped in a limited capacity, they indicate that there could be a larger trend towards bringing services (back) to underserviced areas in creative and innovative ways, which bears further research.

In more urban areas, there seem to be two general trends in the mapped initiatives: campaigns and lobbying initiatives for more and better mobility options on the one hand (often combined with an ecological dimension), and initiatives that try to facilitate a switch from car use to 'softer' and more climate-friendly modes of transportation like bicycles or walking (wherever feasible). As an example of the former, the Ecomobility campaign (GR)[201] tries to raise awareness among the inhabitants of cities across Greece of the environmental impact of transport and to jointly identify the various transport-related issues – from both a social and environmental perspective – that are currently present in urban areas. It has

198 https://www.virgen.at/energie-umwelt/virgen-mobil/das-virger-mobil/
199 http://www.zonnebuscuijk.nl/Home/
200 https://www.favelabrasilxpress.com
201 https://www.ecomobility.gr/

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been embedded in high school programmes and it has been implemented annually for almost twenty years. Another example is Pilsēta cilvēkiem ('City for people'; LV)[202] which aims to promote people-oriented outdoor space, comfortable and safe mobility options, and environmental protection in several Latvian cities, with a focus on pedestrians, cyclists, and public transport.

Also described in detail in the chapter on Research Line 8, the use of other modes of transport like cycling or walking features prominently in this Research Line as well. This ranges from initiatives promoting (cargo) bike sharing to identifying suitable cycling/walking routes, to reducing waste by recycling bike parts and teaching people how to repair bikes, to bike lessons and donations/loans of bikes to vulnerable target groups. A phenomenon that often returns among the mapped initiatives with a great degree of success is the combination of integration and sustainable transport objectives, i.e., introducing migrants and refugees to the new society they are a part of as well as to modes of transport other than car or public transit. For instance, Kompis Sverige ('Friend Sweden'), described above, falls into this category.

An important factor that returns throughout the list of mapped initiatives is the use of websites and/or mobile phone apps as a core or peripheral part of the initiative. There are, for instance, apps that facilitate car-sharing, websites that map new routes that are accessible and safe for cyclists or pedestrians, and social media groups that encourage the exchange and borrowing of bicycles. The use of digital technologies expands the reach of these initiatives, but an important caveat is that it also comes at the risk of excluding certain vulnerable populations, who might not have the means and/or digital literacy necessary to access these resources, like the elderly, people with low incomes, or migrants.

3.7.5. Justice

From the descriptions of the BUIs, some **dynamics of justice** seem to emerge, **always looking at such emergence with the benefit of the doubt and without definitional pretensions**.

Distributive justice is emerging as the strongest form of the BUIs dealing with mobility poverty. This is mainly because income and social status are vulnerabilities that are addressed in the BUIs. Mobility poverty is addressed through a series of initiatives by lowering the cost to the user, therefore reducing the barrier for vulnerable groups to access mobility. An example is the free public transport for retired people in the city of Iași in Romania. Another example in Slovenia is an initiative of the Slovenian Automobile Association (AMZS) called 'Bicycles for All!'[203]. AMZS, with the help of the participating bike repair shops, will make sure that the bikes are inspected and repaired by the technicians and then handed over to ZPM Ljubljana Moste - Polje, who will make sure that the bikes are donated to children from socially disadvantaged families.

[202] https://www.pilsetacilvekiem.lv/
[203] https://www.amzs.si/novice/aktualne-informacije/2021-10-19-radipomagamo-kolesa-za-vse

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Environmental justice is also present in many BUIs that do address mobility poverty by offering solutions that are also positive for the environment. This is the case for the 'Stap in, stap uit' initiative in Zutphen (The Netherlands), where electric shuttles make it possible for elderly and disabled people to commute between their residences and the city centre. Initiatives to bring back services to rural villages are also contributing to environmental justice. Such initiatives – like Dorpspunt in Belgium (described below) – allow the kind of environmentally conscious behaviour that is possible in an urban context to also become feasible in a rural setting.

Environmental justice is important frame also in the perspective of mitigate **geographical-driven inequalities**. Especially in rural areas and spread-out municipalities in mountain regions where public transport is not very well developed, initiatives like "Virger Mobil" are very important[204]. This mobility initiative provides a low-cost transport service. Virgen Municipality has 2,200 inhabitants and stretches out to almost 9,000 acres of land. Since September 2005, the Virger Mobil has been on the road in the municipal area and can be used by all municipal citizens and guests. Around 20 volunteer drivers chauffeur people every day, two fixed rounds in the morning and on a call basis in the afternoon, throughout the Virgen municipality for 1 euro per trip. All inhabitants of Virgen Municipality, but especially the older community benefits from this service: the older citizens are mobile again and are making more social contacts.

Finally, a general consideration about **social and intersectional justice**. Simple initiatives that encourage sustainable mobility – like offering free accessible bikes to people with disabilities and running an upcycling program that donates upcycled bikes to low income individuals, refugees and other vulnerable groups – help processes of both social inclusion and recognition of differences because basically they are initiatives not based on the sharing of "thick" ethical values, that is a monolithic vision of the world, but rather on "thin" practices of sustainable mobility[205].

3.7.6. Drivers and barriers of BUIs

The drivers mentioned below are very much linked to the motivation of the organisations behind the BUIs and therefore the intervention logic of their initiative. These drivers are also an explanatory factor for the implementation dynamics described above.

Table 14 – RL7 drivers and barriers table

Drivers:

- **Address the needs of people facing mobility poverty**. Specific target groups are suffering from mobility poverty as they do not have access to cars and even, in some cases, public transport. This is the case e.g., for people living in rural areas, the elderly, children and young people (not yet having a driving license), and disabled people.
- **Having a positive impact on the environment or the green transition**. This ambition is at the basis of many initiatives that will have an impact on mobility poverty, whether directly or indirectly by reducing the barriers to accessing (environmentally friendlier) mobility solutions.

[204] https://www.virgen.at/energie-umwelt/virgen-mobil/das-virger-mobil/.
[205] On "thick" and "thin" values, see the relate entry in the Stanford Encyclopedia of Philosophy.

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- **Integrating people in society**. Accessing and using the mobility solutions available is a necessity to get integrated into a new society. This driver is linked mainly to the target group of migrants and refugees, but also to other groups like people without employment, who need access to jobs.

Barriers:

- **Accessing the target groups**. Many BUIs provide solutions that, although adapted to the needs of vulnerable people, are addressing a wider audience and face difficulties in reaching the more vulnerable groups.
- **Attitudinal barriers** arising from a culture and a design of the city that prioritises cars and driving over alternative 'soft' modes of transport like cycling and/or walking, or public transport.
- **Physical barriers.** It is not only a matter of mentality. Sometimes behavioural changes are limited and blocked (especially for some human groups like disabled people, elderly, etc.) by the "physical" and architectural structures of the places (too little space for strollers on the sidewalks, barriers for people with wheelchairs, cars limiting pedestrians, also they deal with public spaces and the risk of harassment, making queer people invisible)

3.7.7. Selected inspiring cases

Three cases have been selected as inspiring and are described below. They represent three different types of intervention logics. The Bike Hub is a typical example of an initiative where bicycles are repaired to be donated but combined with other related initiatives like learning to repair. It also addresses the needs of specific target groups at risk of mobility poverty like women, children, and the elderly. Dorpspunt, or 'Village Point', is an example of a completely different type of intervention addressing mobility poverty in rural areas. This BUI brings back services to villages where all services have disappeared. The third example, Mitfahrbank ('Carpooling Bench'), is a socially inclusive and non-stigmatising solution to significantly increase ridesharing in a rural context where public transport is underdeveloped.

Table 15 – Inspiring cases of RL7 table

Country Name / Website	Description
IRELAND *The Bike Hub* https://www.thebikehub.ie/	**The bottom-up initiative** The Bike Hub is a social enterprise running community bike shops in Dun Laoghaire and Dublin City in partnership with several partners. They aim to help make cycling accessible to as many people as possible in the local communities. The Bike Hub fosters social and business activities by engaging with the local community through bike-related projects. **Transport poverty and behavioural changes** • Workshops for schools: introduces students to new dimensions of cycling, such as learning how to fix their bikes, understanding the

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	rules of the road (safe cycling), as well as the physics and maths of cycling (STEM). • Accessible bikes: they offer free rentals on a fleet of accessible bikes for people who are unable to use regular bikes. • Bike workshops for women. • Bike repair and bike maintenance training courses • 'Upcyclers' program, focusing on restoring previously loved bikes to donate them to people with low incomes, refugees, and other vulnerable groups.
BELGIUM *Dorpspunt ('Village Point')* https://www.duurzame-mobiliteit.be	**The bottom-up initiative** A village point is typically started in small villages where all shops have disappeared. It combines roles in three domains: services, social, and mobility. For services, this means bringing back some services that have disappeared like a neighbourhood shop, but also services from trade unions, health insurance, or the municipality. Social role: as a place to go to socialise, but also to get some help and participate in activities. **Transport poverty and behavioural changes** • Bridge the 'last miles' between the village and public transport. • Share resources and solutions among the citizens. Village points typically propose e.g., bike sharing (cargo bike) and bike repair services. It is also a safe place for children to assemble before going to school or leisure activities together. • Increased market share of soft modes of transport. • Improved identification of persons in need of support (early warning system, strengthened social networks).
GERMANY *Mittfahrbank ('Carpooling bench')* https://www.bobenop.de/	**The bottom-up initiative** The ride-sharing bench is centrally located on the village street and invites people to sit down comfortably and indicate their desire for a ride. Destination signs in five directional alternatives in the area show where people want to go. Drivers willing to give someone a ride can thus identify the direction and destination of each bench's occupant(s). The initiative is characterised by a positive feedback loop: the more benches are installed in different localities, the shorter the waiting time will be for people sitting on the benches and the larger the network of possible destinations becomes. **Transport poverty and behavioural changes** The carpooling/ride-sharing bench is a simple and easy-to-implement solution for: • More climate protection: resource-saving mobility, sharing cars relieves traffic and reduces pollution. • Social participation: Mobility is sometimes limited for young people, seniors, and migrants. For them, shopping facilities, pharmacies, doctors, local government offices, and schools are difficult to reach. • Meeting space: Conversations with interesting people. Strangers become friends. • Upgrading local public transport: In many communities and municipalities, especially in rural areas, there is often a lack of public transport, especially in the evenings, on holidays, and weekends.

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3.8. Research Line 8: Post-lockdown transport choices

3.8.1. Mapping analysis of the BUIs

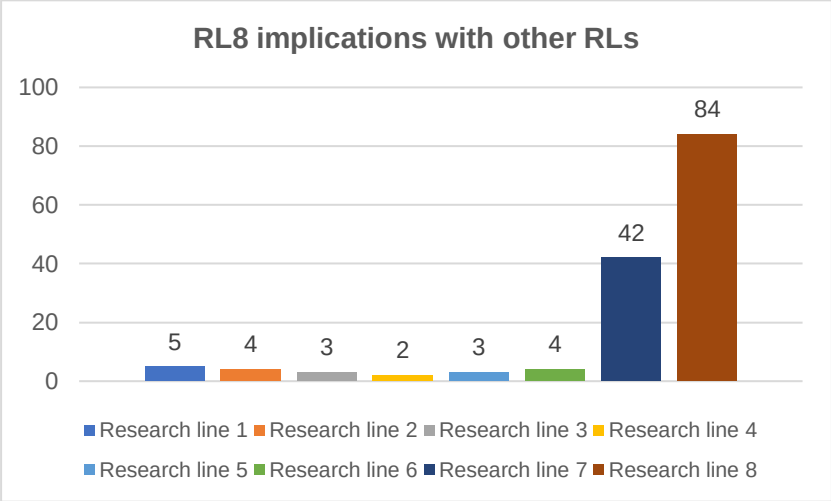

Figure 30 - Implications of RL8 with other RLs

The total number of BUIs analysed in RL8 is **84**. From the researchers' responses, as shown in Figure 30, these BUIs overlap especially with **RL7**. This is due to the interconnections between the two research lines (RL7: *Transport poverty and sustainable travel*). There is very little overlap with the other research lines, but in a few cases, mobility features do seem to be part of a handful of BUIs in those research lines.

3.8.2. Degree of involvement of actors

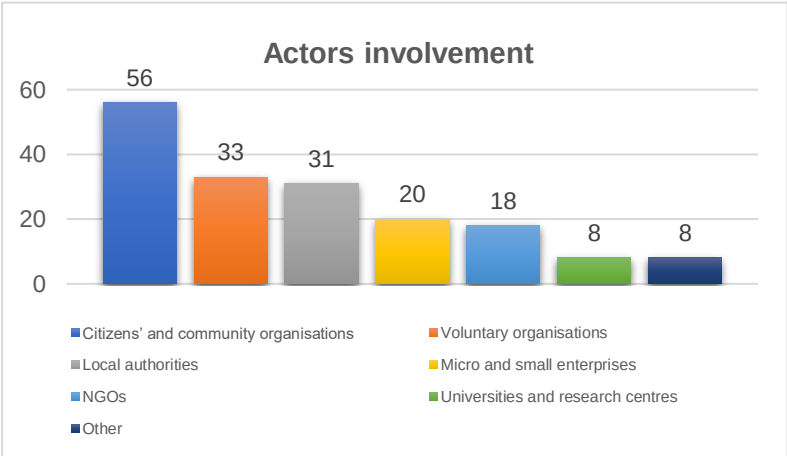

Figure 31 - Actors involvement in RL8

The main involved actors in the 84 BUIs of RL8 are **citizens` and community organisations,** followed by **voluntary organisations** and, to a lesser extent, **local authorities**. Following these, there are **micro and small enterprises** and **NGOs**.

This data seems to suggest a lively interest of the civil societies around the topic of the RL8 BUIs, in many cases without the involvement and support of local authorities.

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Among community organisations, the association “Veloevolution” (BG) is remarkable, its purpose is **to represent cyclists before society and the state** and protect their interests and rights[206]. Interesting is also the case of the AutoMat association promoting a better environment for quality life in the city of Prague (CZ). They take inspiration from other European capitals and engage people in positively transforming streets and public spaces, **monitoring policies and the effective use of public money in sustainable mobilities[207]**.

However, the **local authorities’** role cannot be downplayed; in some circumstances, they become key actors in supporting with **resources** sustainable mobility initiatives. For example, this is the case of Zilveren Linten (‘Silver Ribbons’)[208], an initiative commissioned by the District of Antwerp (B) to provide short and safe walking routes adapted to the specific needs of the elderly. Particular attention was paid to improving seniors’ movements in the vicinity of important and relevant locations, like care homes, service providers, and places with a high likelihood of attracting elderly people.

Another interesting case is the “Coastal Mobility Route” in Dublin (IE), an innovative cycling and public project delivered by the local authority (Dún Laoghaire-Rathdown County Council) in less than eight weeks in 2020. It stretches for 4.5km along the Dún Laoghaire coastline and includes a 3.6km fully segregated cycleway. More than two million cycling and walking trips were recorded in its first year[209]. The project reconfigured local infrastructure to respond to COVID-19 risks, creating safer and improved walking and cycling facilities and enhancing the public space to provide safe and inviting places that the public can visit, spend time in, and enjoy while supporting local businesses as they reopen.

Equally important is the role of **universities and research centres** as a driving force to improve the **capacity of transformations** necessary to tackle climate change in terms of sustainable mobilities. This is the case of the Living Lab (AT) experiment that engages local stakeholders in the ‘smart’ redesign of Griesplatz[210], an important square in the urban centre of Graz that is especially important for its function as a traffic hub. Living Lab was facilitated by the EU project (Urban Europe) and the University of Graz. With its very diverse stakeholders, this BUI has been able to redesign a traffic hub for motorised vehicles into a more pedestrian- and cycling-friendly hub which improved the well-being of the users of the hub as well as all the residents of the Griesplatz area. The accident risk and air pollution have also been lowered.

Also interesting is the involvement of **big companies,** as in the case of De Fietsschool (BE), which provides cycling lessons for people in transport poverty. The initiative has been started by the non-profit organisation Mobiel 21 and receives support from Decathlon[211]. Or the case of Bike Parada Não Rola (BR), collecting forgotten bikes throughout the city so that they can be used by poor people who do not have them in the cities of Sao Paulo. The BUI is well established and is supported by Itaú, one of Brazil`s biggest banks[212].

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206 https://www.facebook.com/groups/56389563751/user/1557491515/
207 https://auto-mat.cz/
208 https://www.voetgangersbeweging.be/portfolio/zilveren-linten
209 www.dlrcoco.ie/en/transportation-infrastructure/coastal-mobility-interventions
210 https://smarterlabs.uni-graz.at/en/project-overview/living-lab-experiment-graz/
211 https://www.defietsschool.be
212 https://www.aromeiazero.org.br

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3.8.3. Initiatives' effects on vulnerabilities

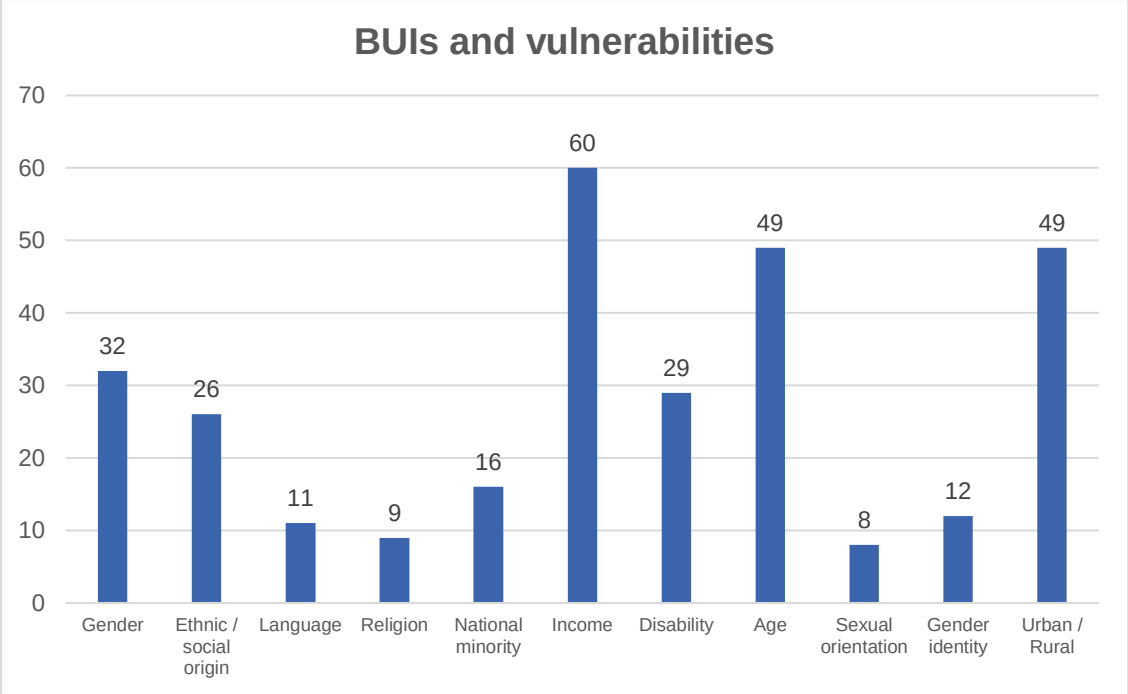

Figure 32 – BUIs and vulnerabilities in RL8

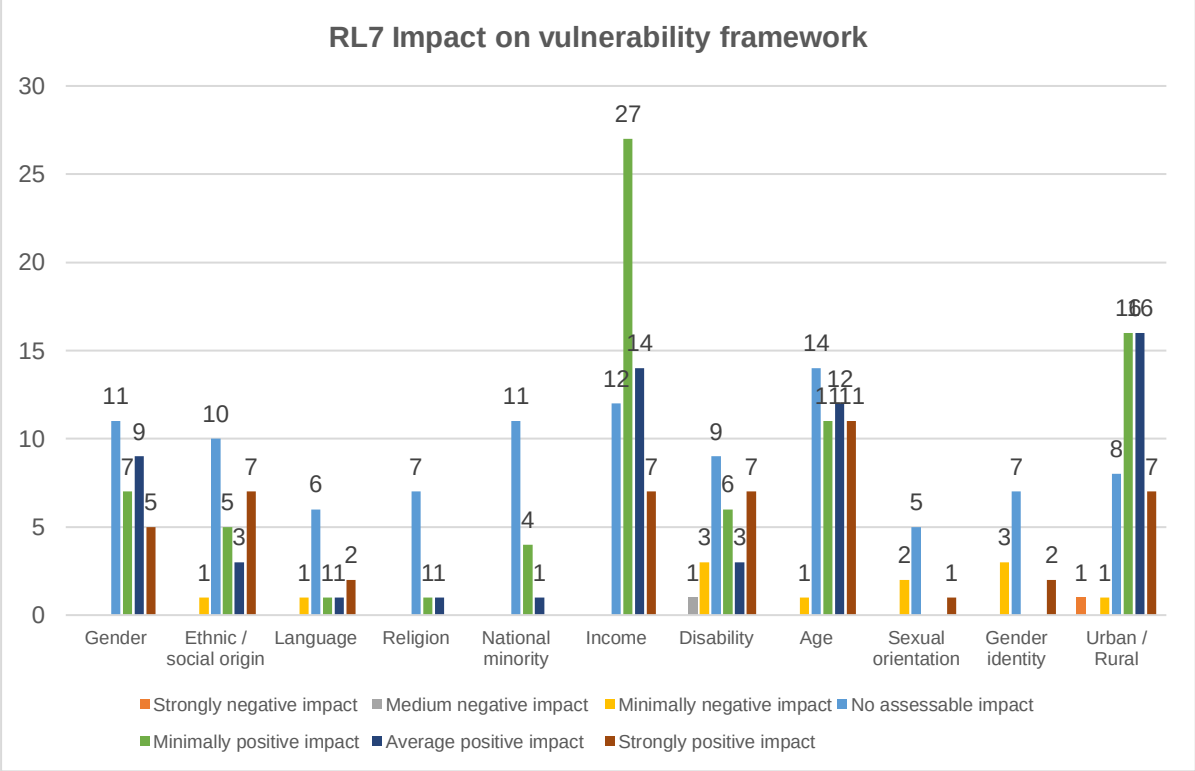

Figure 33 – Impacts of BUIs on vulnerabilities in RL8

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The Figures 32 and 33 show that the positive impacts far outweigh the negative impacts and that the vulnerabilities that the BUIs of RL8 mostly tackle are: **Income**, **Age**, **Urban/Rural**, and to a lesser extent **Gender** and **Disability**.

The fact that the vulnerabilities tackled by the BUIs of income, age and urban/rural far outweigh the remaining ones should not surprise too much. For a start, this is the same case in RL7, thereby confirming that in the mobility sector, these vulnerabilities are those that attract the most initiatives. Secondly, mobility is essentially granting users access to places and people. In that, users might face as prominent barriers disadvantaged economic and physical conditions. Thereby income, the physical health challenges of old age and the relatively remote location of rural dwellings stand out as barriers many vulnerable individuals might face. In this perspective, it is more concerning that disability doesn't obtain more attention in the mapped BUIs, even if the consistency in this RL is higher than in several other RLs. The low rise of disability in the vulnerability framework can be explained perhaps by the circumstances that a minority of individuals are affected by physical disabilities and arguably in smaller numbers than those affected by the vulnerabilities of low income, old age and rural location. Further, there might have been an unconscious selection bias by desk researchers, who might have selected the most visible BUIs, which might happen to be those that target the largest vulnerable groups in the national population.

3.8.4. Implementation dynamics

The most compelling concern of the initiatives seems to be the necessity to implement cycling and walking as sustainable activities which, however, must be promoted within an urban context of **safety** and **protection** of **cyclists** and **pedestrians**. Some interesting cases in this context are:

- Galway Cycling Campaign (IE)[213], a voluntary group that represents cyclists in Galway. It promotes cycling as a common and accessible form of transport to create a more liveable Galway for everyone. It is an independent, membership-driven organisation made up of volunteers. It advocates for all road users, including pedestrians, families, people with disabilities, and public transport users. Galway Cycling Campaign has been "the voice of cycling in Galway since 1998.
- Salvaciclisti (IT)[214] aims to protect the vulnerability of urban cyclists, understood as a lack of safety within the city traffic of Rome. Salvaciclisti has as its target all citizens, but it could be considered to particularly affect those who cannot afford other means of private transportation (and thus mobility, given the malfunctioning public mobility in Rome).
- Cyklokoalícia (SK)[215]. The purpose of the BUI is to support city cycling in Bratislava. City cycling in Bratislava faces many challenges. Compared to other European cities, Bratislava does not have a sufficiently built cycling infrastructure; the cycle

[213] https://www.galwaycycling.org
[214] https://www.salvaiciclistiroma.it
[215] https://cyklokoalicia.sk

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paths are almost non-existent, and due to the large presence of car transport, cycling cannot be an easy and safe option.

Beyond “road safety” and “personal safety”, sustainable mobility appears to regard the implementation and strengthening of **well-being** experiences, such as **returning to open spaces**, far from situations of closure and isolation characterizing the pandemic lockdowns. As an example, we mention the case of Ms Marina Tomac Rojčević (HR), a professional dance instructor and fitness trainer, who in the lockdown period of 2020, organised small groups of walkers focused on outdoor exercise and lockdown mobility training, but also on the discovery of secret urban nooks in the small town of Koprivnica (approx. 30 000 residents)[216].

A second implementation dynamic, more common in diverse initiatives, is learning **cycling** as an **inclusive** means of transport, promoting occasions of integration and socialization for those social groups that are already marginalised in society for some condition of vulnerability, inequality, or injustice. Many initiatives specifically address this implementation dynamic, especially targeting **migrants**, particularly **migrant women and children**. Some interesting cases are:

- Living Lab experiment, Graz (AT)[217]. In certain countries of origin, cycling is not common for women. This free course aims to reduce the insecurities and fears of migrant women and adolescents who have never ridden a bike or done so for a long time. This BUI has not only refreshed and provided new skills to migrant women and adolescents but also risen awareness of climate-friendly means of transport.
- De Fietsschool (BE)[218] - Learning to ride a bike and, afterwards, consistently using bikes helps people in their daily lives in various ways, from improving their health and sense of self-worth to helping people integrate into a new environment and making their commute simpler/faster. The BUI not only teaches people how to ride a bike but also how to own and maintain one. It also provides educational training to the would-be teachers who, in turn, teach people who have never used a bicycle before. Approximately 200.000 people in Flanders are dealing with transport poverty, with the bicycle being an ideal tool to counter this situation. However, more than one in seven Belgian adults has never learned how to ride a bicycle, and over 326.000 Flemish households don’t own a bike (one in three Belgians, according to Decathlon). Proportionally, the biggest group among these are migrants, who have often never learned how to ride a bicycle in their countries of origin. About 90% of people who come to De Fietsschool are in this situation, especially migrant women and girls.
- Pyöräliitto’s (Cycling Union, FI)[219] Immigrants on Bikes project offers elementary and basic courses that aim to teach people with an immigrant background who have no cycling skills to cycle and learn the benefits of cycling and the joy it brings.
  Many immigrants living in Finland have no previous experience with cycling. Due to culture, religion, or country of origin due to living conditions, cycling skills are poor or non-existent. This is especially true for girls and women. As an adult, learning to

[216] https://www.facebook.com/Animador-117936353317706/about
[217] https://smarterlabs.uni-graz.at/de/projektuebersicht/living-lab-experiment-graz/
[218] https://www.defietsschool.be
[219] https://pyoraliitto.fi

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cycle is difficult, and that is why the Cycling Union has launched a project to develop cycling skills, especially for adult immigrants. Pyöräliitto (Bicycle Union) promotes cycling as a mode of transport and is a national advocate for cycling, aiming to increase the share of cycling citizens.

A final emerging dynamic could be associated with an urban consideration. Sustainable mobility seems to be not only an inclusive practice but rather – in some initiatives – it performs as a connector that can **redesign entire urban geographies** with their related **social and economic dynamics**. In this regard, the case of the Favela Brazil Express (BR)[220] is interesting. This original initiative helps to solve a decades-long problem: people in favelas could not have products delivered to them since services such as the post office or delivery companies considered those no-go areas. Partnering with local dwellers has helped residents to receive those products and become more connected to the city's economy.

3.8.5. Justice

From the descriptions of the BUIs, some tentative **dynamics of justice** would seem to emerge. A first transversal trend in many BUIs is a dynamic of **distributive justice** aimed at offering sustainable mobility to those who cannot afford it. This is the case, for example, of Fietsambassade (BE) ("The Bicycle Embassy"), which is an external independent agency of the City of Ghent that facilitates and promotes bicycle use across the city as an alternative and more sustainable mode of transport. For local students, it provides bikes that can be rented at an advantageous price, costing €70 per year for bikes without gears and €80 per year for bikes with gears. For people with disabilities or special needs, the initiative offers a variety of adapted bikes that can be used by people who usually experience mobility issues with standard bicycles, including rickshaws, tricycles, tandem bikes, and parent-child bicycles[221].

Further justice issues addressed by the mapped BUIs regard **recognition and gender justice**; this appears to be the case of the initiatives earlier described focusing on teaching and promoting cycling, targeting specifically migrants and migrant women.

Nevertheless, the **dynamics of justice are not always so evident**. Distributive instances often fade towards a **democratic and intersectional model of justice**, which does not focus on fighting against single inequalities or injustices but on **promoting behavioural change**. They often aim to support urban cycling, develop a sustainable way of life, and transport and strengthen people's bicycle repair and manual work competencies. In addition, they cook vegan meals, share bikes and tools, and make decisions about their activities in a non-hierarchical way with monthly open meetings. We want to mention here the case of Bike Kitchen Brno (CZ), an open community bike workshop and voluntary

[220] https://www.favelabrasilxpress.com
[221] https://fietsambassade.gent.be/en

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organisation[222]. They collect old bikes, learn to repair them together, donate them or sell them for affordable prices, create friendships and cook food together.

3.8.6. Drivers and barriers of BUIs

Without claiming to be exhaustive, some barriers and drivers emerge from the analysis of the BUIs.

Table 16 – RL8 drivers and barriers table

Drivers: Attitudinal, i.e., goals and motivations that move and engage actors: • **Concerns with road safety**. Poor road safety is a symptom of transport dysfunction. Improving road safety is necessary to allow citizens to move freely without concerns for their safety. • **Concerns with personal well-being**. Bicycle and walking are simple, affordable, reliable, and environmentally friendly means of transport that helps people to a healthy lifestyle. • **Pro-environmental attitudes**. Cycling promotes respect for the environment and positively impacts the climate. • **Prosocial attitudes**. Cycling and walking, when they become social practices, can redesign entire urban contexts, strengthening community bonds and transforming neighbourhoods into socially inclusive environments.
Barriers: • Architectural barriers to promote the sustainable mobility of vulnerable people or people with special needs (too little space for strollers on the sidewalks, barriers for people with wheelchairs, cars limiting pedestrians, also they deal with public spaces and the risk of harassment, making queer people invisible) • The lack of suitable cycleways and cycling infrastructure deters people from cycling**.** • Attitudinal barriers arising from a culture that prioritises cars and driving • The lack of a large dataset to evaluate the frequency of use of individual routes, analyse existing physical barriers, and propose solutions to improve the cycling infrastructure

3.8.7. Selected inspiring cases

Many remarkable RL8 cases have already been mentioned in this chapter. However, the following cases were selected because, in our opinion, they are examples of bottom-up initiatives that potentially have the characteristics of presenting replicable policies for the promotion of pro-environmental behavioural change and the inclusion of vulnerable groups.

[222] https://bikekitchenbrno.cz

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Table 17 – Inspiring cases of RL8 table

Country	Name / Website	Description
Bulgaria	Veloevolution http://velobg.org/bike-library	**The bottom-up initiative** Veloevolution is a discussion platform and a grass-roots organisation that promotes environmentally friendly means of transport, especially bicycle riding. It also takes an active role in open discussions concerning establishing relevant infrastructure for cycling. **Sustainable mobilities and behavioural changes** The initiative operates to • create legal and infrastructural facilities for safe cycling conditions • create prerequisites for effective dialogue and cooperation between interested citizens and civil groups, businesses, media, and institutions to optimise the existing transport networks • increase the safety of cycling on the streets • promote bicycle transport as a more accessible, healthy and ecological alternative mode of transportation • stimulate the establishment of a culture of equality and tolerance among all road traffic participants • support cyclists and cycling associations from different settlements and unite them in various events, including resilience to pandemic restriction • carry out activities related to the sustainable development of transport
Germany	#BIKEYGEES https://bikeygees.org/	**The bottom-up initiative** #BIKEYGEES offers free (practical) cycle training to (refugee) women and girls. The initiative also teaches German traffic rules and how to carry out basic bike repairs in different languages. They also give out bikes, helmets, maintenance tools, and locks to participating girls and women after passing a small theoretical exam, so they can leave the training being self-sufficient. **Sustainable mobilities and behavioural changes** #BIKEYGEES believes that cycling is a fundamental building block of the reclaiming of individual mobility of refugees or newcomers who have come to Berlin. Women in particular need support in this regard. Many paths are made on foot. They feel isolated in their accommodations. Cycling offers an obvious solution to exploring a new living environment. Therefore, beyond the intercultural aspect, it is important for #BIKEYGEES to see the possibility of cycling as a sustainable approach to ensuring mobility and independence.

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4. Discussion

Figure 34 - Word frequency query result

4.1. BUIs distribution per Research Lines

Figure 35 shows the distribution of the 693 BUIs on the lines of research. The percentage data would seem to indicate a prevalence of initiatives especially connected with two main topics: the **Food** cluster (Farm to fork: food security, RL5: 23%, and Farm to fork: food values, RL6: 24%) and the **Land** cluster (Climate action: Valorising local knowledge on natural hazards, RL1: 21%, and Biodiversity: land use restrictions, RL2: 20%). It must be remembered that the percentages do not amount to 100 because several BUIs address several RLs topic areas at once; nevertheless, they refer to the percentage of BUIs that regard a specific research line on the total of 693 mapped BUIs.

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Therefore, it is interesting to notice that a primary need as nutrition and ensuring its provision, safety and sustainability is addressed by the relative majority of the BUIs mapped just, followed by the initiatives regarding sustainable land use and preventing natural hazards. This might suggest that food and land, vital elements in all societies, are priorities here. Still, no definite conclusions could be drawn, considering that an unconscious selection bias might have affected the selection of the BUIs.

Answer	Number of	Percentage
1. Climate Action: Valorising local knowledge on natural hazards	145	20.9%
2. Biodiversity: Land use restrictions	140	20.2%
3. Clean energy: Energy poverty	114	16.5%
4. Clean energy: EEMs/SMEs	87	12.6%
5. Farm to fork: Food security	165	23.8%
6. Farm to fork: Food values	165	23.8%
7. Sustainable mobility: Transport poverty	104	15%
8. Sustainable mobility: Post-lockdown transport choices	84	12.1%

Figure 35 – BUIs distribution per RLs

4.2. Framework of involved actors

From figure 36 it is possible to argue the consistent participation of citizens in the initiatives, demonstrating the effective bottom-up origin of the social experiences that the researchers have identified and mapped. More than half of the initiatives are participated by **citizens' and community organisations** (**56%**), while **voluntary organisations** and **NGOs** are involved in just over a third of the initiatives (respectively **38** and **37%**) and **micro and small enterprises** (**33%**) in about a third. While proportions vary to some extent across research lines, it is generally the case that the category of citizens and community organisations is by far the type of actor that is most engaged in each of the research lines with the exception of RL4, where the most involved type of actor is Micro and Small enterprises, but this should not be considered a striking difference because RL4 was deliberately focusing on micro and small enterprises' BUIs. Perhaps it is more interesting to note that in RL 7 and 8 the third most involved actor, after citizens' and community organisations and voluntary organisations is local authorities. This might be explained with the fact that sustainable mobility often requires public transport and road infrastructure, which cannot prescind from the inclusion of local authorities.

The percentages regarding these types of actors outnumber, to an extent, the number of initiatives participated by the **local authorities** (**26%**). This might highlight a certain vitality of civil societies in defending the cause of more fair and equitable green transition policies and is, to some extent, going beyond our expectations of finding a higher level of involvement of local authorities. Nevertheless, this data should be taken with caution; in fact, local authorities might not be part of the set of actors involved in a given BUI, but they might still have an important role in creating an institutional environment that is suitable for the generation and implementation of the BUI.

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The relatively high number of involved small businesses and enterprises allows us to argue about a possible integration and coexistence of citizens' pursuits in environmental sustainability and justice with the micro-entrepreneurial interests of some businesses.

Answer	Number of	Percentage
Citizens' and community organisations (including community groups)	388	56%
Voluntary organisations	262	37.8%
Local authorities	181	26.1%
Micro and small enterprises (including social enterprises and cooperatives) and their networks	230	33.2%
NGOs	257	37.1%
Universities and research centres	96	13.9%
Other	73	10.5%

Figure 36 – General framework of the main involved actors

4.3. Framework of vulnerability

In the evaluation of the researchers (see Figure 37), the aspects of vulnerability most impacted (with scores over 50%) by the initiatives are three: **Income (68%**), **Urban/Rural** (**64%**), **Age** (**50%**), not too far behind is **ethnic (42%)** vulnerability.

The same figure describes how strongly the issues of **poverty** and **distributive and social justice** are still perceived as significant by citizens. The economic resources necessary to be effectively eco-friendly seem to play an important and predominant role in societal contexts. In other words, shrewd policies are not enough to define more eco-sustainable behavioural changes, and social justice is also needed.

Answer	Number of	Percentage
Sex and/or gender	221	31.9%
Ethnic and/or social origin	293	42.3%
Language	125	18%
Religion or belief	102	14.7%
Membership of a national minority	167	24.1%
Income	470	67.8%
Disability	188	27.1%
Age	351	50.6%
Sexual orientation	96	13.9%
Gender identity	104	15%
Urban / Rural	448	64.6%
Other	52	7.5%

Figure 37 – General framework of the main impacted vulnerabilities

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Another impacting aspect of vulnerability seems to be the nexus between urban and rural contexts. As confirmed by the analysis of the BUIs, environmental change in rural areas seems to have immediate and direct impacts on the health and well-being of persons and communities. These impacts become more relevant the more the people depend on natural resources for their basic livelihoods. Climate change can diminish the availability of these local natural resources, limiting the options for rural households that depend on natural resources for consumption or trade.

Further, Figure 37 describes how much **generational issues** represent a vulnerability aspect of green transition policies. **Advancing age** and the prevalence of special needs increase the vulnerability of these individuals to environmental stressors and risks. Sometimes older people are also persons in poor health, and this mix tends to be more sensitive to the vulnerable effects of environmental impacts. But the environmental crisis also affects **young people** for several reasons. "Firstly, young people tend to start out with little capital, on relatively low incomes, with minimal work experience and few contacts. This makes it difficult to find work and improve economic security especially given the lack of decent work available. […] Secondly, young people should outlive today's older adults, thus surviving to observe the more extreme features of climate change. […] Thirdly, although young people from developing countries play a minor role in causing anthropogenic climate change, they may hold some solutions to this problem. Young people are not (alone) responsible for solving the global issues we collectively face, yet they offer knowledge, ideas, dynamism, and political activism to contribute to solutions, and to hold those in formal positions of power to account" (Barford et al. 2021, pp. 4-5).

But besides the environmental effects of the green transition or the environmental crisis on the aforementioned vulnerabilities, the fact that they are targeted more than others could mean that in generating pro-environmental initiatives, the leading actors wish to take care of those subjects that they perceive to be the most vulnerable or the at least of those vulnerabilities that include the largest groups of vulnerable individuals in our societies.

Across research lines, we can see some variations in terms of proportions of vulnerabilities addressed, with the Urban/Rural category standing out as the one most addressed in RL1 and RL2 instead of Income, which nevertheless comes second either at the same level of the Age category (RL1) or slightly above this (RL2). The prominence of the Urban/Rural category in what has been termed here the 'Land' cluster does not come as a surprise because it is in these two research lines that we find many projects addressing the needs and challenges of rural communities. Another difference that can be observed regards RL5, where the Ethnic/social origin category comes third in the number of addressed BUIs after Income and Urban/rural vulnerabilities but before Age. Again, this difference appears coherent with the aim of the research line of investigating food securities and addressing inequalities, which can tie, as appears to be in this case, with the marginalised and disadvantaged condition of some ethnic groups, particularly those belonging to migrant communities.

Some vulnerabilities like Gender and Disability were expected to stand out more in the proportion of vulnerabilities addressed across all research lines. In all research lines but one (RL8) Gender appears as the fifth most addressed vulnerability (4th in RL8) after Income, Urban/Rural, Age and Ethnic/ Social origin. While Disability is either the 6th or 7th most addressed vulnerability across the different research lines, even in those regarding mobility where a larger proportion could have been expected. There might be several reasons for these results, one is that these vulnerabilities might count smaller numbers of individuals in comparisons with others like e.g., Income. Another explanation might regard

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an unconscious bias of national researchers, who might have been more acquainted with initiatives addressing other types of vulnerabilities. A third reason might regard a choice of design of the vulnerability framework, which distinguished between Gender and Gender Identity vulnerabilities, a type of distinction that might have been poorly understood by national researchers and might have induced flagging either of the two categories, thereby splitting the cases across categories. This happened to an extent, in fact, checking the data, it was found that 100 BUIs were flagged as addressing both vulnerabilities (and possibly other vulnerabilities) while 121 were flagged as regarding gender and 4 for gender identity; therefore, if the two categories were joined, they would count up to a total of 225 cases and would have stood out as a vulnerability proportionally more addressed. Further looking at figure 38, it is noticeable that gender and gender identity are part of the second largest group of BUIs identified of 56 BUIs that simultaneously address all the vulnerabilities that were part of the vulnerability framework. Finally, in Figures 39 and 40, it is shown that 32% and 27% of all the mapped BUIs address respectively Gender and Disability vulnerabilities (nevertheless it should be kept always in mind that most BUIs cover simultaneously several vulnerabilities including those included in the figures).

Vulnerabilities												N of BUIs	% on Total
					Income					Urban / Rural		57	8.2
Sex and/or gender	Ethnic and/or social origin	Language	Religion or belief	Membership of a national minority	Income	Disability	Age	Sexual orientation	Gender identity	Urban / Rural		56	8.1
										Urban / Rural		49	7.1
					Income							39	5.6
	Ethnic and/or social origin				Income					Urban / Rural		27	3.9
					Income		Age			Urban / Rural		24	3.5
							Age					23	3.3
							Age			Urban / Rural		22	3.2
											Other	15	2.2
					Income		Age					15	2.2
	Ethnic and/or social origin				Income		Age			Urban / Rural		15	2.2
												14	2.0
					Income	Disability	Age			Urban / Rural		12	1.7
Percentage covered on the total of 693 BUIs mapped													53.1

Figure 38 – Prevalent groups of BUIs by type of Vulnerabilities addressed

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Vulnerabilities		Number of BUIs	% on Total
All other vulnerabilities		468	67.5
Gender		121	17.5
Gender	Gender identity	100	14.4
	Gender identity	4	0.6
Total		693	100

Figure 39 – BUIs addressing Gender vulnerabilities on total of mapped BUIs

Vulnerability	Number of BUIs	% on Total
All other vurnerabilities	505	72.9
Disability	188	27.1
Total	693	100

Figure 40 – BUIs addressing the Disability vulnerability on total of mapped BUIs

Another final consideration seems relevant to us. In their mappings, researchers have not always been able to assess the "weight" of the impact. For some types of vulnerabilities, the percentage of initiatives whose impact could not be assessed exceeds the percentage of those assessed. This happened for the vulnerabilities of **Religion or belief**, **Sexual orientation**, and **Gender identity**, as shown in the following Figure:

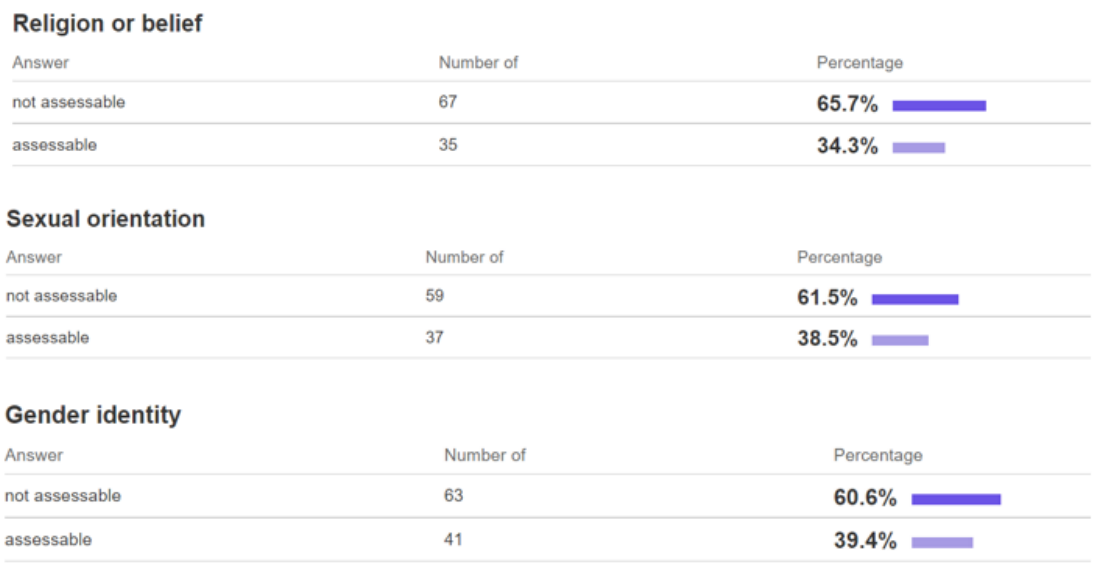

Figure 41 – Impacts of BUIs not always assessable

4.4. Framework of proximity

The consideration that seems relevant to us is that **more than half (56%) of the initiatives are supported by local authorities** in both a material (economic resources, means) and immaterial (sharing of knowledge) way. Only a quarter of the initiatives (**26%**) shape, together with local authorities, processes of decision-making and generates bilateral consensus building, while less than half of the initiatives (**42%**) seem to move within a framework of multilateral identification of responsibilities, sharing leadership and accountability with other social actors on the field, such as institutions but also citizens' associations, businesses, trade unions, etc.

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Institutional proximity (between the BUI and the local authorities)

Answer	Number of	Percentage
The BUI's activity shapes formal decision processes of the local authorities and leads to consensus building instead of unilateral decision-making	182	26.3%
The BUI receives support from local authorities (e.g., funding, resources, sharing of knowledge)	389	56.1%
The BUI's area of influence overlaps with role of local authorities	251	36.2%
The roles and responsibilities of the BUI are defined in relation to the roles of other collective actors (e.g. other initiatives, local authorities, institutions or groups and associations).	295	42.6%

Figure 42 – Institutional proximity

Relational proximity describes how deeply a "BUI is embedded in its home community […]. Relational proximity also reflects social capital as well as language, experiences and worldviews shared with other citizens" (Seebauer et al. 2019).

The general consideration that appears to emerge is that most initiatives present an excellent picture of relationships and social capital likely coming from the interactions and the exchanges they have with the other collective actors that play a social role in the communities. Indeed, BUIs are assessed by NRs to score above 50% on all the indicators. Particularly relevant seems to be the percentage of **73%** describing how much **BUIs share coherent aims with the other collective actors**. Another noteworthy score regards the capacity of **BUIs** to **have access to material and non-material support from local networks (62%)**, which points to the fact that BUIs have a high level of embeddedness in their social environments capable of providing them with vital resources for their development.

Relational proximity (between the BUI and its local community or adjacent regions)

Answer	Number of	Percentage
The BUI has access to material and non-material support from local networks	430	62%
The BUI shares coherent aims with other collective actors (e.g. other initiatives, local authorities, institutions or groups and associations)	507	73.2%
The BUI coordinates with and complements other initiatives in the community	364	52.5%
The BUI exchanges developments, objectives and concepts with other actors (social learning)	432	62.3%

Figure 43 – Relational proximity

Social proximity relates to the size and quality of the network among BUI members. Citizens who engage in a BUI form interpersonal linkages based on friendship and trust.

The general consideration we can make is that, despite the friendship and trust (**46%**), the interactions between members (**45%**), the levels of inclusion (**53%**), and transparency and accountability (**50%**) are not very high scores for of the initiatives; nevertheless the degree of coherence and sharing of goals between members is consistently high (**76%**). These scores need to be taken with caution, as the others above reported and even more: the reason being that it is quite difficult from a desk research process, such as the one undertaken by National researchers, to assess characteristics of the BUIs that would require a deeper research process using primary data collection methods to be thoroughly assessed.

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Social proximity (among BUI members)

Answer	Number of	Percentage
The BUI members share coherent aims	526	75.9%
The BUI members trust each other	319	46%
High interaction between BUI members	316	45.6%
The BUI includes everyone who is affected and wishes to participate	366	52.8%
Key personnel hold defined roles and act in a transparent and accountable way	350	50.5%

Figure 44 – Social proximity

4.5. Common drivers and barriers across bottom-up initiatives

The following table summarises the barriers and drivers that stand out as shared elements that influence many BUIs across all the research lines. Inevitably synthesising the information has required choosing those barriers and drivers that appeared the most in each research line's barriers and drivers' tables. Therefore, the following list does not have the ambition of being exhaustive of all the barriers and drivers involved. Further, the decision to present each element in a single column of barriers and drivers is because most elements can be a driver or a barrier, not only depending on whether these elements are present or not sometimes, even in their presence, they can act both as barriers and divers, for example, a supportive role of local authorities, while in many cases can enable a project, in some, it might lead to circumstances where its bottom-up features are threatened.

Barrier and driver	Description
Role of local authorities	Local authorities can play a pivotal role in stimulating sustainable behaviours in small-scale communities where the representative bodies of local authorities often include many active citizens. Furthermore, local authorities can provide the BUIs with the provision of financial resources for the success of the actions in contexts that are socio-economically depressed or geographically isolated. Beyond finances, local authorities can also share different kinds of resources with the bottom-up initiatives, like know-how, decision-making processes, technology, providing a physical location for BUI-activities etc. Nevertheless, the excessive role of local authorities could deprive the initiative of its feature of being "bottom-up", decreasing the quality of citizen participation. This might become a barrier identifiable as a top-down role of local authorities, which does not create real patterns of behavioural change in the community. In those top-down

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	approach cases, local authorities and societal organisations (universities, NGOs, etc.) can risk developing patronising approaches towards vulnerable groups.
Public policies, national legislation, and public support schemes	International (e.g., Natura 2000), national legislation, local and regional regulations, policies and related support schemes for community projects can all influence BUIs significantly. Their influence can play a role at different levels. On the one hand, for some BUIs (e.g., community energy), regulatory matters can be complicated. Simply not being aware and informed about them is a barrier; also, knowing how to act efficiently to comply with laws and regulations could be a barrier. On the other hand, policies can be deliberately shaped to provide support. They can translate into support schemes promoted among the general public or at least targeted organisations. Such schemes can provide seed funding for initiatives or provide human resources capable of supporting BUIs' actors.
Access to financial resources	Financial resources can be vital for many initiatives to kickstart and/or grow, but they can also create too much reliance on outside providers. Financial resources generally have a positive and necessary role in many BUIs. Still, if providing financially supported goods and services is the only focus, there can be missed opportunities for delivering co-benefits, such as education or participation, to the extreme of dulling the bottom-up character of the initiative.
Opportunities for income generation or cost saving	A BUI might produce income generation or cost-saving opportunities, which might be an important contribution to lifting vulnerable individuals participating in the BUI. This opportunity acts as a driver motivating actors and individuals to implement and participate in the BUI. This is the case, e.g., of RL6, RL4 and RL3, among others. Nevertheless, this same opportunity might generate controversies within the BUI and reduce the BUI to pursue only this objective. In this case, this opportunity would clearly become a barrier.
Awareness, Information, Knowledge and Education (AIKE)	Awareness, Information, Knowledge and Education are critical elements in addressing the green transition. They can shape attitudes and empower citizens to change their behaviour. Regarding BUIs, the importance of AIKE is evident in several RLs, which often include activities to raise

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	awareness and provide information and targeted education. But in terms of generating BUIs, the presence of AIKE is determinant to allow activists to see opportunities for interventions and for designing effective solutions while navigating the contextual regulations and relations with institutional subjects. This issue can also be termed in terms of the availability of suitable human resources to implement BUIs, something highlighted, for example, in RL4 and RL1.
Visibility of the topic in the media and on social media	Visibility of a topic in traditional or social media can raise awareness and provide information. This element can impact various levels; certainly, it can be a driver to make actors sensitive about a topic and strengthen their wish to act. Similarly, it will affect the participation of citizens. This can be seen, e.g., in RLs 3 and 4: community energy schemes are not well known yet, and equally sustainable energy topics are not widely discussed (although perhaps this is now changing due to the fossil fuel supply crisis generated by the war in Ukraine).
Cultures of Sustainability	It can be a driver if pro-environmental attitudes are present, but some citizens or economic actors might see sustainability as an unnecessary cost. Pro-environmental attitudes are certainly a driver for all the actors involved in the BUIs. In some instances, concerns related to the economic impact of initiatives might translate into adverse attitudes not only towards a specific project but the whole sustainability movement. These issues play a role in all the research lines and certainly more in those like RL2, where conflicts about resource use might be an issue.
The participatory and democratic structure of the decision-making process	In general, democratic features of the BUIs' decision-making process are drivers that motivate the initiatives and create cohesion among members. However, suppose the cultural and social plurality of the groups is not considered. In that case, the risk is that democratic participation becomes a value imposed by a hegemonic culture over a subordinate. A further complication might be that high levels of participation require significant time-consuming and complex processes of decision-making that are resource-intense (time, human resources), which inevitably might be a challenge or even a barrier for some BUIs. Nevertheless, more generally, participatory processes, co-creation, and co-design

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	initiatives allow for a method of inclusion that can motivate participation and make sure that BUIs fit the needs of targeted participants better. This is the case of all RLs, but particularly of those where the complexity of interventions might be higher such as, e.g., RL3 and RL4, the energy cluster.
Prosocial attitudes and environment	Prosocial attitudes and environment are a significant factor in building a BUI. Prosocial attitudes are intended here as those conducive to behaviours that benefit others and collective goods, thereby reducing inequalities in a broad sense at socioeconomic, environmental and gender levels. Its functioning is important in different directions: (a) as background for a good organisation among the volunteers, (b) in creating new social spaces, (c) in transforming local culture, and (d) in building a community. Furthermore, the strength of existing social bonds in each area facilitates the support of collaborative projects, ensuring that the initiatives are truly bottom-up and led by vulnerable groups. However, when the prosocial environment is focused exclusively on a specific social group, these benefits risk becoming an obstacle. The prosocial environment can reinforce the group's strong and exclusive (non-inclusive) identity, thereby preventing wider participation.
Strong leadership of individuals from vulnerable communities	Strong leaders among members of vulnerable groups certainly help initiatives have greater potential for external impact and achievement of the intended goals. Furthermore, such charismatic personalities also act internally as a factor of motivation and cohesion among the group members, reinforcing ranks and supporting the demonstrative action of the initiative. However, it can happen that these leaders, in turn, become an additional cause of further vulnerability for their group, resulting in being too divisive, preventing dynamic change or simply threatening the project's long-term sustainability in case they withdraw.
Focusing on a specific aspect of vulnerability versus intersectionality	Marking and identifying the factors of vulnerability and the elements worsening the social conditions of individuals helps to understand the scales of injustice present in each social context. It can act as a driver to mobilise community energies to act and reduce or eliminate such vulnerabilities. However, often, citizens do not realise their condition of

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	vulnerability, and even if they realise it, they might reject it since recognising it means admitting a disadvantage that might incur a social stigma. This circumstance might act as a barrier, limiting the participation of vulnerable individuals in a BUI. For example, poor citizens might refrain from seeking help due to shame. This could be, e.g., the case of low-income citizens in energy poverty in RL3. Further, focusing on a single vulnerability might be a barrier to having an intersectional approach, as emerged in RL1. Intersectionality instead appears as a driver that allows comprehensively meeting the needs of target groups. Yet, it might act as a barrier because it requires a higher level of complexity and organisation, as highlighted in RL5.
Market conditions	A growing number of corporates, financial institutions, and investors are also making increasing efforts to assess transition risks and to create plans and services to achieve net-zero emissions. In turn, market conditions are beginning to integrate climate transition risks and opportunities into business decision-making. Obviously, such a trend also affects the goals of the bottom-up initiatives and their opportunities for success or failure. In the field of energy, new green market conditions can work to decrease the cost of energy and technology, augment competitiveness, and foster the openness of the market. In the food field, big industries emerge as new actors in sustainable food production and sale. This can effectively transform local cultures and increase public awareness and interest in sustainability; but it can also pave the way for greenwashing and create difficult competition with local, small-scale initiatives often resulting in market dominance and crowding out.
Pressure to be innovative	When the BUI has resources and infrastructure, this pressure can provide a good incentive to find solutions to complex problems they face. However, often, the industry expands into the spaces BUIs cover, with more affordable alternatives, and causes the grassroots organisations and methods to weaken or dissolve. Low-tech operations cannot compete with the innovative solutions in the market
Accessibility of infrastructure	Accessibility of infrastructure can be a driver to promote sustainable behaviours. This can be evident in relation to the possibility of accessing

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	natural areas, sustainable means of transport, or the electricity grid for locally distributed generation. Accessibility for citizens can be of physical, technological or of financial nature. Those BUIs that can develop in an environment that grants accessibility to their target vulnerable groups have more chances to develop patterns of behavioural change. For example, cities that are made suitable for cycling and walking provide the chance to use simple, affordable, and environmentally friendly means of transport for limited distances that help people behave environmentally. Equally, cities with robust and affordable public transport would facilitate behavioural change. Finally, accessibility is culturally sensitive, and this should be kept in mind when dealing with ethnically diverse communities that might have distinct requirements for accessibility.
Data-driven technology	Some bottom-up initiatives highlight the intervention of digital technologies to encourage behavioural changes. Indeed, they could help to evaluate individual and social behaviours, mitigate the existing physical and cultural barriers, and propose solutions to improve pro-environmental behavioural changes. However, it often happens that the amount of data is insufficient, or the technologies are not “educated” and trained through quality data to allow interoperability between different technological sources and systems. When all this happens, the expectations of the “green” benefits of the technologies are reduced, and the technologies are perceived as of little use. A further barrier generated by these technologies might regard the digital divide (in fact, a knowledge gap, see above the category ‘AIKE) that would make it difficult for some citizens to engage in projects that rely heavily on these technologies.

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5. Final remarks

A relatively high number (693) and a wide range of different BUIs have been surveyed in this analysis across different research lines, which we could consider as clustered around four major topics: sustainable **land use** (RL1 and 2), sustainable **energy** (RL3 and 4), sustainable **food** culture and practices (RL5 and &) and finally sustainable **transport** (RL7 and 8).

The characteristics of the BUIs have been presented in each research line chapter, along with the prevalent implementation and justice dynamics that emerged.

Some characteristics of the BUIs surfaced from the assessment carried out by the national researchers have been highlighted in chapter four and are worth to be recalled here. The relative majority of BUIs focus on the food and the land themes; this might signal that **food and land appear to be** still **priorities** and key aspects of a green transition in our societies. The third theme receiving consideration by the BUIs is the **energy** theme, a central issue in the climate crisis and certainly even more in a historical phase such as the current one, which confronts societies with the necessity of transitioning from fossil fuels and ensuring security of supply.

Another interesting characteristic is that BUIs principally focus on the vulnerabilities of **Income**, the **gap between Rural and Urban areas, Age and Ethnicity**, which among the whole set of vulnerabilities considered might be those that affect most of the vulnerable individuals in our society. Yet, this might also suggest that our societies still face a wide problem of **distributive justice** (Income, Age, Rural vulnerabilities) and **recognition justice** (Ethnicity, Age groups) that civil society actors consider a priority in promoting the green transition. Despite ACCTING's research approach taking into account among its core elements a gender+ approach, the mapped BUIs appeared to focus primarily on the vulnerabilities just mentioned; nevertheless, BUIs that address gender vulnerabilities account for a non-negligible amount of 30% of all mapped BUIs. The second cycle of our research will give us a chance to delve deeper into the possible reasons behind this relative under-representation of BUIs addressing gender vulnerabilities, including those experienced by LGBTQI+.

Remarkably the mapped BUIs appear to be led by a variety of actors, with the majority of them participated by **citizens' and community organisations** and in considerable numbers also by voluntary organisations, NGOs and Micro and small enterprises, thereby suggesting a vitality of the civil society, which appears capable in the majority of the surveyed cases to generate and sustain BUIs without the direct involvement of local authorities, which are still present as actors in about a fourth of the considered BUIs.

Nevertheless, local authorities and, more generally speaking, the public sector appear to have an important influence on barriers and drivers for many BUIs. They appear to create an **institutional environment** which is capable of supporting or hindering BUIs through the level of provision of material (e.g., finances, infrastructure, human resources) and

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immaterial resources (e.g., information, knowledge) and the characteristics of the regulatory framework they create (legislation, local regulations, policies of intervention).

Along with the institutional environment, the BUIs are confronted with other vital barriers and drivers, particularly those concerning their **finances**, which, outside of support schemes of the public sector, might well be recruited through their base of activists, networks and, in certain instances, successfully regenerated and increased through the provision of services on the market.

However, perhaps even more importantly, drivers that propel many of the BUIs considered are **internally held immaterial resources** such as Awareness, Information, Knowledge and Education (AIKE), which are necessary to identify problems, generate solutions, plan and implement initiatives and not least, arising interest in citizens and partner groups and organisations. And further, along with these, equally important are pro-environmental and prosocial attitudes often intertwined in what could be termed 'cultures of sustainability', which mobilise and motivate many actors and participants.

Contextual drivers and barriers also play a role beyond the institutional environment earlier described. A prosocial culture widespread in the community appears to provide social capital and thereby favour collective actions, particularly at the neighbourhood level, where social bonds might be active and strong, and they are a resource favouring the search for local solutions (e.g., community gardens or community energy schemes). Prosocial culture can also play a role at further levels, as communities are not only local, particularly concerning issues such as gender justice, disabilities or the rights of ethnic minorities (recognition justice). Then the strength and vitality of regional or national networks of advocacy for these vulnerable groups can be fertile soil for generating successful BUIs. Lastly, contextual barriers and drivers cannot avoid including those national and international global processes that influence our societies. Among these, market conditions, processes of innovation and particularly data-driven technology advances and the role of traditional and new media were considered relevant for the surveyed BUIs. BUIs face drivers or barriers in the form of needs, opportunities and constraints created by these contextual variables. Examples are the prices of energy, food, and sustainable energy solutions but also the growing opportunities and challenges of data-driven technologies, such as smartphones and their applications, and finally, the ever-important role of traditional and new media in creating awareness and spreading information (or not) regarding issues at the core of the green transition or shedding light on the existence and magnitude of vulnerabilities.

Finally, it is worth pointing out that this deliverable, based on desk research, whose limitations as a single instrument of social research are evident, is just a step in a larger research process comprising several research stages within the H2020 ACCTING project, as such, cannot be considered conclusive but only as a step towards a better understanding of the phenomena of Bottom-Up Initiatives, their role and their potential in the green transition. Further, the findings will support our action research development stages promoting a gender+ approach based on the better stories emerged through the mapping analysed in the current report and the qualitative studies conducted in other WPs.

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Acknowledgment

We take this opportunity to thank all the researchers for their excellent work on the mapping, without which this report would not have been possible, just as the continuation of the ACCTING project would have been more difficult. Indeed, the mapped initiatives will *provide examples of potential behaviour change stories that are sure to be considered in the next research steps of our project, starting from their use in the Open Studios as WP4.*

Table 18 - National researchers of mapping activity

No.	Country	National researchers
1	Austria	Martin Felix Gajdusek; Gabor Szüdi
2	Belgium	Aart Kerremans
3	Bulgaria	Martin Felix Gajdusek
4	Croatia	Mladen Domazet
5	Cyprus	Vasiliki Miliadi; Nikos Zaharis; Dilay Celebi Gonidis
6	Czechia	Veronika Fajmonova
7	Denmark	Lucia di Paola; Daniel Botha
8	Estonia	Ulle Must
9	Finland	Maria Ehrnstrom-Fuentes
10	France	Thomas le Gallic
11	Germany	Claudia Fabó Cartas
12	Greece	Vasiliki Miliadi; Nikos Zaharis; Dilay Celebi Gonidis
13	Hungary	Gabor Szudi
14	Ireland	Jane Feeney
15	Italy	Marina Cacace; Gabriele Olivati; Francesca Pugliese
16	Latvia	Marita Zitmane
17	Lithuania	Mykolas Simas Poskus
18	Luxemburg	Benedetto Rugani
19	Malta	Aitana Radu
20	Netherlands	Sanne Akerboom
21	Poland	T. Bartosz Kalinowski
22	Portugal	Maria Lucinda Fonseca; Jennifer McGarrigle; Daniela Ferreira; Alina Esteves; Nuno Marques da Costa; Patrícia Abrantes; Luís Moreno; Marcelo Fragoso; João Vasconcelos
23	Romania	Andrei Holman, Simona Popusoi
24	Slovakia	Zuzana Polačková
25	Slovenia	Elena Buzan
26	Spain	Blanca Callen Moreu
27	Sweden	Carolin Zorell
28	Norway	Antonio Carnevale
29	Serbia	Suzana Ignjatovic
30	Turkey	Burcu Borhan Türeli; Esin Düzel; Ayşe Gül Altınay
31	UK	Eleanor Ratcliffe

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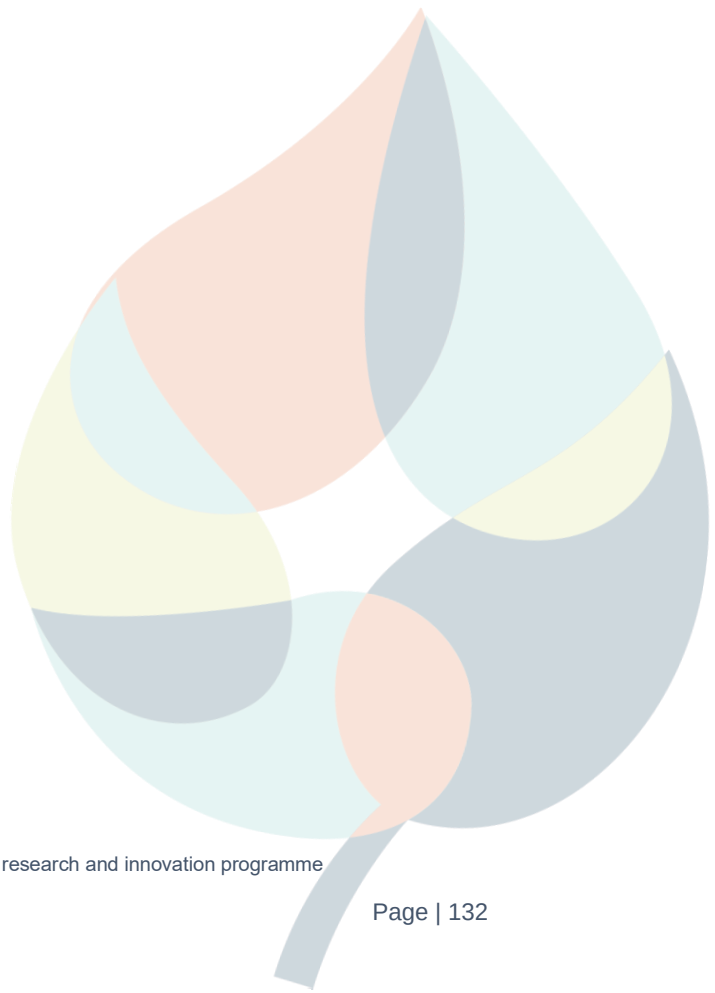
32	USA	Don Lee
33	Japan	Mika Shimizu
34	Brazil	Flavio Augusto Lira Nascimento



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