



GRANULAR

PRACTICE ABSTRACTS

BATCH 2

D6.4

AUGUST 2026



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D6.4 Practice Abstracts – Batch 2

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Authors	A. Pawłowska, P. Chmieliński, B. Wieliczko (ERDN); F. Stortini, B. Marovelli, M. Moretti (UNIPi); T. Berchoux, A. Kirsch (IAMM); M. Hofer, I. McCallum (IIASA); D. Miller, J. Hopkins (HUT); A. Gregis, G. Martino (Ecorys); B. Martins, T. Lago Miguez, M.I. Doval (UVIGO); L. Chasset (PPM); M. Ricci, I. Lusini (VdC); A. Kurdys-Kujawska (KUT); H. Diverde (VAS); K. Wevers (P10); M. Kull, A. Vanttinen (LUKE, SavonLuotsi); Ž. Gedminaitė-Raudonė, M. Belhaj (EKVI); A. Kokkinaki, E. Stamataki (MAICh); M. Tudor, M. Chitea, S. Bruma (Romanian Academy, Iași Branch); M. Mita (GVV Pro Përmet); D. Roganović (IDA Golija); A. Adlers (Sea Land); E. Tulicii, G. Soster, M. Matavulj (PREPARE); P. Lorieri (DBTA)
Work Package Leader	University of Pisa (UNIPi)
Project coordinator	Mediterranean Agronomic Institute of Montpellier (IAMM)

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List of acronyms

EIP-AGRI – European Innovation Partnership for Agricultural Productivity and Sustainability

ERDN – European Rural Development Network

GIS – geographic information system

LAG – Local Action Group

LEADER – EU method for community-led local development

LL – Living Lab

LTVRA – EU Long-Term Vision for Rural Areas

MAL – Multi-Actor Lab

OSM – OpenStreetMap

PA – Practice Abstract

RL – Replication Lab

SFSC – Short Food Supply Chain

SME – Small and Medium-sized Enterprise

UD – Universal Design

WP – Work Package

Country codes follow ISO 3166: AL Albania, ES Spain, FI Finland, FR France, GR Greece, IT Italy, LT Lithuania, NL Netherlands, PL Poland, RO Romania, RS Serbia, SE Sweden, UK United Kingdom.

1. Executive summary

This deliverable presents the second batch of GRANULAR Practice Abstracts. It contains sixteen abstracts prepared in the EIP-AGRI common format. Together with the seven abstracts in Deliverable [D6.3](#), it completes the project target of twenty-three Practice Abstracts.

Batch 2 brings together work from the seven Living Labs, nine Replication Labs and project partners. It is organised by content rather than by individual Lab. The eight thematic abstracts trace how challenges shared across rural Europe play out differently from place to place. They cover wellbeing, the green transition, natural resources, climate change, demographic change, tourism, agri-food systems and rural attractiveness. The eight methodological abstracts present tools and approaches developed or tested in GRANULAR. These include novel data collection, coordination, data capacity building, integrating data into decision-making, rural proofing, cross-visits, and reflection on the experience of the Living Labs and Replication Labs.

Across the abstracts, one main lesson is that rural diversity becomes more visible when evidence is produced at a scale relevant to local decision-making. Municipal averages and national indicators can hide important differences between villages, municipalities, coastal and inland areas, or groups of residents. To identify these differences and support more targeted action, the Labs drew on many sources at once: official statistics, administrative records, geospatial and mobility data, online platforms, surveys, interviews and the knowledge of local actors.

The abstracts also show that useful evidence can often be produced from sources that already exist. However, data alone is not enough. It needs to be interpreted with local actors and linked to the institutions responsible for planning and policy. The methods can be used in other rural areas, but they should be adapted to local data availability, technical capacity, governance arrangements and community priorities.

The abstracts provide practical findings, tools and recommendations for rural communities, practitioners and policy-makers. They support the wider GRANULAR objective of giving rural actors reusable data and approaches for place-based public action, including action linked to ecological, digital and social transitions. Each one-page summary will reach practitioners across Europe through the EIP-AGRI database of the EU CAP Network.

2. Introduction

Practice Abstracts are short, practice-oriented summaries prepared in the EIP-AGRI common format, through which Horizon Europe multi-actor projects share their results with farmers, foresters, advisors, rural communities and policy makers. Each abstract presents, in plain language, a result or method and the practical recommendations that follow from it, and is published in the EIP-AGRI database on the EU CAP Network platform.

GRANULAR committed to twenty-three Practice Abstracts. The first batch ([D6.3](#), 2024) summarised the initial ambitions and activities of the seven Living Labs. The second batch, presented in this deliverable, incorporates the lessons learned from both Living Labs and Replication Labs in sixteen new abstracts.

The Batch 2 introduces two types of abstract:

- **Eight thematic abstracts** focusing on the themes the Multi-Actor Labs (Living Labs and Replication Labs) worked on: wellbeing, the impact of the green transition, natural resources, climate change, demographic change, tourism, agri-food systems and rural attractiveness;
- **Eight methodological abstracts** documenting methods, tools and approaches developed and tested in the project: novel tools for data collection, coordination across engagement, local knowledge and data, data capacity building, the integration of data into decision-making, local rural proofing, cross-visits, and two reflexive abstracts on the experience of the Living Labs and the Replication Labs.

Both types serve the same purpose: to turn what the project learned about rural diversity into knowledge that supports the ecological, digital and social transitions of rural areas.

Batch 2 was organised by content rather than by individual Lab. This made it possible to bring together evidence from different rural contexts around shared challenges and to show how methods, data and tools can be adapted rather than simply copied. The thematic abstracts show how rural challenges differ across territories. The methodological abstracts show how rural actors can use data, local knowledge and participatory processes to support public action. Together, they reflect the main GRANULAR objective of producing multi-dimensional evidence for tailored rural policies and for ecological, digital and social transitions.

The report is organised in two parts, presenting first the eight thematic abstracts, each combining contributions from several Living and Replication Labs, and then the eight methodological ones. Each abstract consists of a one-page summary for EIP-AGRI and an extended part for knowledge transfer, with links to underlying reports, datasets and tools where available. After submission, each summary will be uploaded to the EIP-AGRI platform, where it can also be updated as further results become available, as was done for Batch 1.

3. Methodology

Practice Abstracts synthesise practical solutions developed under the project and communicate them to rural communities, practitioners, policy makers, researchers, businesses and NGOs. A total of 23 Practice Abstracts is foreseen for GRANULAR. The first batch of seven, based on the work of the Living Labs, was delivered in February 2024 as Deliverable 6.3. This second batch of sixteen draws on results from both the Living Labs and the Replication Labs, and completes the target. All abstracts are submitted to the EIP-AGRI database via the EU CAP Network platform, as part of the project's obligations under Horizon Europe.

Where Batch 1 was organised by Lab, with each Living Lab producing its own abstract, Batch 2 was organised by content. This approach was chosen because rural challenges such as access to services, demographic change, tourism, natural resources and the green transition are shared across Europe but take different forms in different places. It allows the abstracts to compare evidence across territories while retaining the specific conditions that shape local action. Two types of abstract were prepared: eight thematic ones, each synthesising what several Labs learned about one theme, and eight methodological ones, each documenting a method, tool or approach developed and tested in the project. Each abstract consists of two parts: a one-page summary for the EIP-AGRI database, and an extended part for knowledge transfer. This structure is central to GRANULAR's objective: it makes rural diversity comparable around common challenges and shows how methods, data and tools developed in one territory can be adapted in another, in support of place-based public action.

Overall, GRANULAR Practice Abstracts synthesise smart, innovative solutions developed under the project and disseminate them to practitioners in rural areas (rural communities, practitioners, policy makers, researchers, businesses, NGOs, etc.).

More in depth, the Batch 2 introduces two types of practice abstracts:

- **8 Thematic Practice Abstracts** – focusing on key themes explored across the project
- **8 Methodological Practice Abstracts** – focusing on innovative methods, tools, and approaches developed and tested in the project

The structure differs between thematic and methodological abstracts, reflecting their purposes: thematic abstracts synthesise findings on a shared theme, so their sections move from context to findings and implications, while methodological abstracts are written to enable replication, so their sections follow the method itself, its testing, lessons and scalability. The two structures are shown in Table 1: Across both types, each abstract keeps the same thread: what data or knowledge was used, what it revealed about the specific rural context, and what local actors or policy-makers can do differently as a result.

Thematic Practice Abstract	Methodological Practice Abstract
Thematic context and relevance for rural areas	Methodological context and rationale
Living Lab / Replication Lab perspective	Description of the method, tool, or approach
Key findings and data insights	Testing and application in LLs / RLs
Practical implications and recommendations	Lessons learned and practical recommendations
Transferability and broader relevance	Scalability and replicability
Further information	Further information

Table 1: Structure of the extended part of thematic and methodological Practice Abstracts. Source: ERDN.

3.1. Thematic Practice Abstracts

For each of the eight themes identified during the project development, a shared template was placed on the project cloud, and each Lab contributed to the theme or themes closest to its work in a designated section of the template.

Labs were not obliged to contribute to more than one theme, and no coordination between Labs was required: the contributions were compiled and harmonised during editing, coherence was ensured within each abstract, and the cross-references to the EU Long-Term Vision for Rural Areas and the GRANULAR Rural Compass were added at that stage, so that individual Labs did not need to address these frameworks themselves. A training session held in May 2026 supported the Labs in working with the templates, and the first drafts arrived in June 2026.

Each thematic abstract presents findings on its theme drawn from the GRANULAR experience, explains why the theme matters for rural communities, highlights the role of data and evidence, and closes with practical recommendations. The table 2 lists the themes and the Labs that contributed to each.

No.	Theme	Living and Replication Labs interested in the topic
1	Wellbeing	NL, GR, LT
2	The impact of green transition	SE, UK
3	Natural resources	FR, RS
4	Climate change	UK
5	Demographic change	ES, FI
6	Tourism	AL, FR, ES, FI, IT (LL), RS
7	Agri-food	FR, IT (LL), PL, IT (RL), RO
8	Rural attractiveness	ES, NL

Table 2: Thematic Practice Abstracts and contributing Labs. Source: ERDN.

In concrete, each thematic PA:

- Present findings on the chosen theme drawing from the GRANULAR experience, data collected and tools developed;
- Explain why this theme matters for rural communities and what the key challenges and opportunities are in the Lab's rural context;
- Highlight the role of data and evidence in understanding the theme;
- Provide practical recommendations relevant to rural communities, policy makers, and other stakeholders;
- Consider what lessons can be useful for other rural areas in Europe.

3.2. Methodological Practice Abstracts

Each methodological abstract documents an innovative method, tool or approach developed or tested in GRANULAR, presented so that others can understand and potentially replicate it: how the method works, how it was tested in the Living Labs and Replication Labs, what was learned, and under what conditions it can be transferred to other rural contexts.

The methodological abstracts (Table 3) are intended as reusable practice resources. They explain what was tested, what data or capacities are needed, what limits were found and how the approach can be adapted by other rural actors.

No.	Methodological topic	Lead partner
9	Novel tools for data collection	IIASA
10	Coordination across real engagement, local knowledge and data	UNIFI
11	Data capacity building: exchanges between data producers and users	IAMM with French LL
12	Integrating data into the decision-making process	IAMM
13	Local rural proofing	Ecorys and James Hutton Institute
14	Cross-visits: building reflection on rural diversity and identifying common opportunities	UVIGO
15	Reflexive cluster on Living Labs experience and LLs perspective on data	UNIFI
16	Reflexive cluster on Replication Labs experience and perspective on data	ERDN

Table 3: Methodological Practice Abstracts and their lead partners. Source: ERDN.

Each methodological Practice Abstract:

- Presents the methodology, tool, or approach in an accessible way that enables others to understand and potentially replicate it;
- Explains how the method was tested in Living Labs and/or Replication Labs, and what was learned from the testing process;
- Provides practical guidance: What are the steps needed to apply this method? What resources are needed? What challenges should be anticipated?
- Addresses scalability and replicability: Can this method work in different rural contexts? Under what conditions?
- Links to GRANULAR outputs: Digital Platform, datasets, deliverables, etc.

4. Thematic Practice Abstracts

The thematic abstracts use different types of evidence, including official statistics, administrative records, spatial data, mobility data, surveys, interviews and local knowledge. Their purpose is to show what becomes visible when evidence is produced at a scale relevant to rural territories and discussed with local actors. The findings should be read as place-based examples that can inform, but not be automatically generalised to, other rural areas.

4.1. Wellbeing

Seeing where rural services actually fail: fine-grained data and inclusive design for rural wellbeing

Contributing Labs: Netherlands (LL), Greece (RL), Lithuania (RL)

Summary for EIP-AGRI

Rural wellbeing depends on whether people can actually reach the services they need. Official statistics rarely show this, because they are not fine-grained enough to guide decisions in a single village. Three GRANULAR Labs tested practical ways to close that gap.

The Dutch P10 network, covering 34 rural municipalities, mapped access to basic services by combining formal data, such as distances to the nearest supermarket, hospital or school, with interviews with local stakeholders. It found no shortage of indicators, but too little granularity to guide decisions below municipal level, and concluded that matching formal with informal sources is what makes evidence usable.

In Greece, the Rural Chania Lab mapped services village by village: monthly bus frequency at the smallest administrative level, schools and pupil numbers for 2020 to 2026, healthcare, internet speed and visitor flows. Combined with GRANULAR data on accessibility by bicycle and car, this showed that public transport follows tourist demand more than residents' needs.

In Lithuania, the Ignalina Lab works in a region that lost over 30% of its population between 2001 and 2021 and has the country's highest ageing index. Working with residents and institutions, it identified everyday barriers and tested low-cost fixes: portable ramps, tactile signage, accessible websites, shuttle services and volunteer support, and produced a Universal Design checklist and toolkit.

◆ **Recommendations:** measure access at village level, not as municipal averages; check official data against what residents report; and treat inclusive design as a governance choice built into planning and procurement, not as a later repair.

🌀 Thematic context and relevance for rural areas

This theme addresses the stronger and connected pillars of the EU Long-Term Vision for Rural Areas, and the residential dimension of the GRANULAR Rural Compass: wellbeing here is treated as a function of whether people can reach the services that make a place liveable.

P10 network, Netherlands (LL)

Rural municipalities in the Dutch P10 network face a combination of structural challenges linked to their low population density and large geographic areas. These include declining local facilities such as shops, schools, and healthcare, limited public transport and accessibility, and demographic trends like ageing and youth outmigration. At the same time, they experience economic vulnerability, financial pressure due to relatively high service costs and lower tax revenues, and difficulties in providing sufficient and suitable housing. In addition, these regions play a major role in national transitions such as energy and agriculture, which puts extra pressure on space and local support. Digital connectivity is not always optimal, and national policies are often designed with urban contexts in mind, creating a mismatch that requires tailored approaches for rural areas.

The Dutch LL focused on the importance for rural wellbeing and that access to basic services and housing is crucial for wellbeing at the individual and collective level

Two reports, on wider rural wellbeing were prepared:

- The first report focused more on basic services and the access to them for the rural areas. This report combines 'hard/formal' data (distances for inhabitants to get to the local supermarket, the hospital or access to schools) and combines this with interviews with local stakeholders. Lots of data and indicators, but often with insufficient granularity and explanatory power for (sub-) municipal policy making;
- The second report examined the rural proofing of housing policies, asking whether national and provincial policy helps or hinders rural municipalities. For this theme, its relevance lies in housing as a precondition for wellbeing and liveability in small communities. Both reports are distributed through the P10 network channels.

Combining and matching formal with informal data sourcing turns out to be key in municipal policy making processes. The practical output is a set of territorial indicators measured below municipal level, distances to a supermarket, a hospital or a school, read alongside what local stakeholders report. Indicators at this scale expose differences between neighbouring places that municipal averages conceal, which is precisely what rural proofing of a national policy requires.

Rural Chania, Greece (RL)

Rural areas in the Regional Unit of Chania (hereafter "Rural Chania"), Crete, Greece, are characterised by territorial disparities and differentiated development processes across coastal and inland systems and face multiple and interrelated challenges. These include depopulation and socio-economic decline in increasingly marginalised mountainous areas, alongside strong and often unregulated tourism growth in coastal zones.

Natural, human, and cultural resources are under pressure. The dominance of tourism affects land use, local communities, and landscape integrity, while climate change impacts (including flood risks, wildfires, and water scarcity) further intensify vulnerabilities. At the same time, rural inland areas face limited access to essential services such as healthcare, education, and public administration, as well as infrequent public transport and constrained economic opportunities. Conversely, coastal areas are characterised by rapid tourism-driven development, which generates both economic opportunities and sustainability challenges.

These dynamics increase exposure of residents to risks affecting wellbeing and the long-term sustainability of rural communities. The overarching vision is to support the development of rural areas in Crete as attractive and resilient places to live and work, while preserving their environmental and cultural identity and supporting balanced economic development. A key priority is improving quality of life, particularly in remote areas, through better access to essential services. The Lab therefore measures accessibility as a territorial indicator: monthly bus frequency at the smallest administrative levels, school and pupil numbers per commune, healthcare coverage and internet speed, combined with GRANULAR accessibility data. This makes the coastal to inland divide visible as evidence rather than impression, and allows support to be targeted at the communes that need it.

The Rural Chania Replication Lab (RL) addresses these challenges under the long-term objective of improved local services and infrastructure. In particular, the RL focuses on enhancing local mobility and digital connectivity in remote areas to support accessibility and territorial cohesion and to ensure rural villages remain liveable with access to essential services.

The following research questions guide the work:

- How accessible are basic services from rural villages in terms of travel time and public transport availability?
- What factors hinder or support the continuation of agricultural activities and the development of employment and business opportunities in rural areas, and how can these be addressed?
- How do rural areas perform in terms of the digital divide, economic opportunities, housing availability, demographic structure, farm size, economic viability, and infrastructure?

Ignalina, Lithuania (RL)

With Lithuania's rapidly ageing population and persistent social exclusion of various marginalized groups, ensuring accessible and inclusive (public and basic) services and infrastructure has become a core priority for sustainable regional development. Additionally, in line with the Rural Development Program, there is a focus on expanding services through new project initiatives led by rural communities and Local Action Groups.

The Replication Lab, thus, adopted a universal design (UD) approach to ensure that all public services and infrastructure are accessible to everyone across Lithuania's regions. The Lab's long-term goals focus on making Ignalina region, the pilot region, and other Lithuanian areas more convenient and attractive for both residents and tourists by promoting inclusive services that leave no one behind.

📍 Living Lab / Replication Lab perspective

P10 network, Netherlands (LL)

The P10 is a network of large rural municipalities in the Netherlands that work together to represent and strengthen the interests of the countryside. It brings together 34 municipalities with relatively large land areas and low population densities, which face similar challenges such as maintaining livability, providing services, and managing space for agriculture, nature, housing, and energy. By collaborating, the P10 aims to ensure that national policies better reflect the realities of rural areas and that these regions receive fair attention, funding, and tailored solutions. In short, the P10 acts as a collective voice for the Dutch countryside in discussions with the national government and other stakeholders.

Rural Chania, Greece (RL)

The Chania Regional Unit (Area: 2376 km² 156,706 inhabitants, census 2021) is administratively divided into 7 Municipalities with several hundreds of villages scattered along the coast and inland. The Rural Chania area exhibits a remarkable geomorphology dominated by the mountain massif of Lefka Ori, incredible gorges and cliffs, agricultural and pastoral lands, and unique coastal areas and small islands. The entire island of Crete is an exceptionally rich area for plant diversity in the Mediterranean while the Chania area accommodates more than 70% of the rare, endemic and endangered plants of the island, as well as several NATURA 2000 sites.

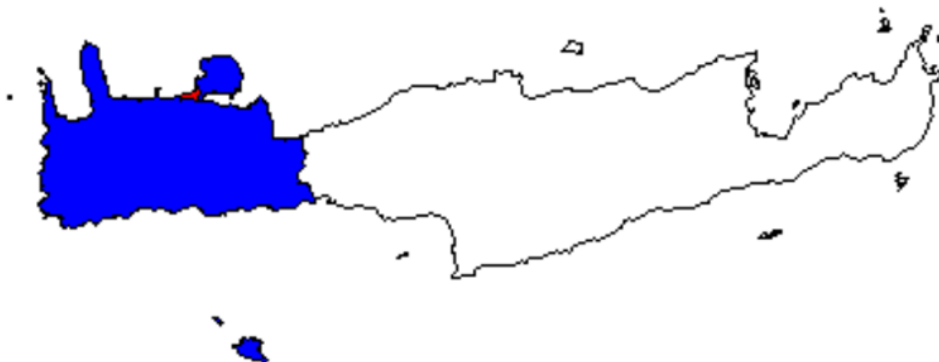


Figure 1: Map of Crete, with the Rural Chania area marked in blue. Source: Rural Chania Replication Lab.



Figure 2: Two contrasting faces of Rural Chania: inland mountainous settlements and the tourism-oriented northern coast. Source: Rural Chania Replication Lab.

Several actors representing different institutions/organisations and the general public participate in the Replication Lab to both strengthen the “local voice” and set the framework for collecting data/knowledge that will support the formulation of policies aligned with the RL's short and long-term goals.

The contribution of these actors is of utmost importance for understanding the key characteristics and dynamics of the area and identifying the role each one can play in achieving the RL's main objectives.

These actors include:

- **National/Regional/Local Authorities.** These entities are crucial for identifying existing data gaps, and understanding the policy formulation process and the dynamics of the area. They also help prioritise policy-making and resource allocation. Relevant authorities include the Directorate of Agricultural Economy and Veterinary Services and the Forestry Directorate.
- **Producer organisations/Agricultural Cooperatives/Women's Cooperatives/Producer Groups.** These groups play a significant role in promoting sustainable practices and ensuring the economic viability of local farmers.
- **Tourism Stakeholders.** As tourism is a key economic driver, engaging local businesses, tourism boards, and associations will help create attractive rural tourism offerings.
- **Academic and Research Institutions – innovation actors.** Apart from MAICh, other institutions such as the Technical University of Crete, the Greek Mediterranean University, the University of Crete and the Hellenic Agricultural Organisation “DEMETER” contribute to research, capacity building, innovation transfer and networking in fields such as sustainable practices, bio-circular economy, digitalisation and accessibility.
- **Community Organisations.** Local NGOs and other groups will be engaged to ensure community voices are heard and incorporated into development plans.
- **Farmer and rural entrepreneurs.** Local farmers and other producers are essential for the success of the RL and will provide valuable insights into the area's agricultural dynamics.
- **General Public and local communities:** Engaging the wider community ensures that the initiatives are relevant and beneficial to all.

The involvement of these actors is through collaborative workshops, participatory planning sessions, and ongoing dialogue to ensure that all perspectives are considered and that activities are aligned with community needs.



Figure 3: Rural Chania Replication Lab stakeholder meeting, December 2024, and local press coverage. Source: Rural Chania Replication Lab.

Ignalina, Lithuania (RL)

The Ignalina LAG territory is a peripheral region of Lithuania, located in the country's easternmost area. It borders the Republic of Belarus to the east, the Zarasai region to the north, the Švenčionys region to the south, and the Utena region to the west. In 2024, the Ignalina municipality had 13,817 permanent residents, of whom 5501 (39.8%) lived in urban areas and 8316 (60.2%) in rural areas. The region stands out for its exceptional combination of valuable recreational resources, including numerous water bodies, pine forests, a diverse landscape, and the absence of industrial activity. The Ignalina region falls into the category of sparsely populated areas, characterised by an exceptionally low population density. It has the highest ageing index in Lithuania, a rapidly declining population – nearly 3,5 times the national average – and the highest number of social benefit recipients per 1000 inhabitants.

Between 2001 and 2021, its population declined by more than 30%, one of the steepest drops in Lithuania, and it now has one of the oldest population structures in the country. These dynamics place pressure on public services, as shrinking budgets and reduced staffing coincide with increased demand for age- and ability-friendly environments.

Initial applications of UD in Ignalina emerged in the early 2000s, particularly within tourism services. Since then, UD principles have gradually expanded into education, culture, transport, and public administration. By 2025, Ignalina had become a testing ground for rural application of UD, offering insights relevant to wider European debates on inclusive regional development.

In this context, UD offers a framework that moves beyond compliance with minimum accessibility standards. Rather than providing separate solutions for specific groups, UD promotes the design of environments, services, and infrastructure that are inherently usable by all individuals, regardless of age, ability, or status.

The development and implementation of this Replication Lab involved a diverse group of actors, including researchers from the Lithuanian Centre for Social Sciences and stakeholders from Ignalina region. Key stakeholders included representatives from the Local Action Group, local communities, public organisations such as a museum, library, tourism organisations, sports centre, bus station, local authorities, and entrepreneurs, all working together to identify key challenges when creating and delivering the accessible and inclusive environment to all in the region.

🔍 Key findings and data insights

P10 network, Netherlands (LL)

The main findings of the two P10 reports are summarised in the thematic context section above: indicators of access exist in abundance, but below municipal level they lack the granularity and explanatory power that local decisions require.

Rural Chania, Greece (RL)

The Lab drew on existing available datasets:

- Frequency of the public transport service (buses) for Rural Chania on a monthly basis and at LAU (Local Administrative Unit) of Municipal Commune (Level 7) and Local Commune (Level 8). *Source: bus public transport timetables and routes* <https://www.e-ktel.com/en/services/dromologia>
- Road map and bus stations:

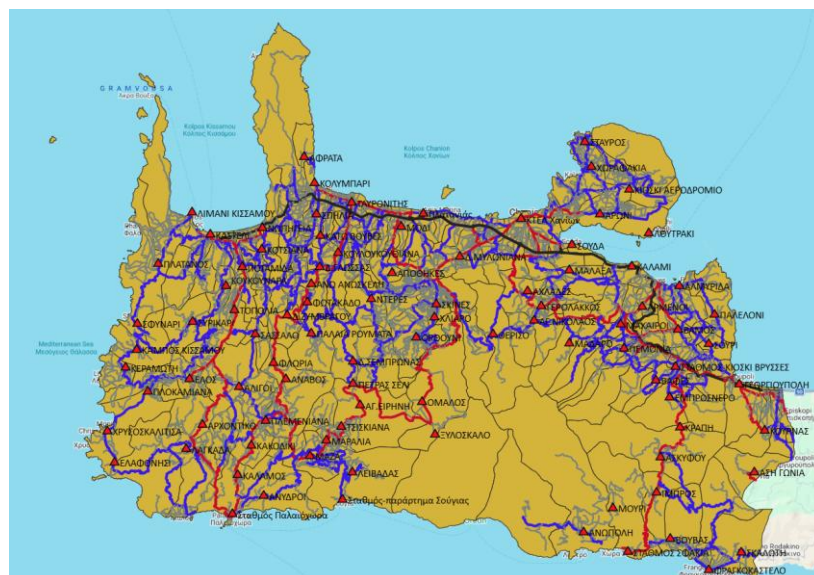


Figure 4: Road network and bus stations in Rural Chania. Source: Rural Chania Replication Lab, based on public bus timetables.

2025 visitor flows from Platanias to Crete venues

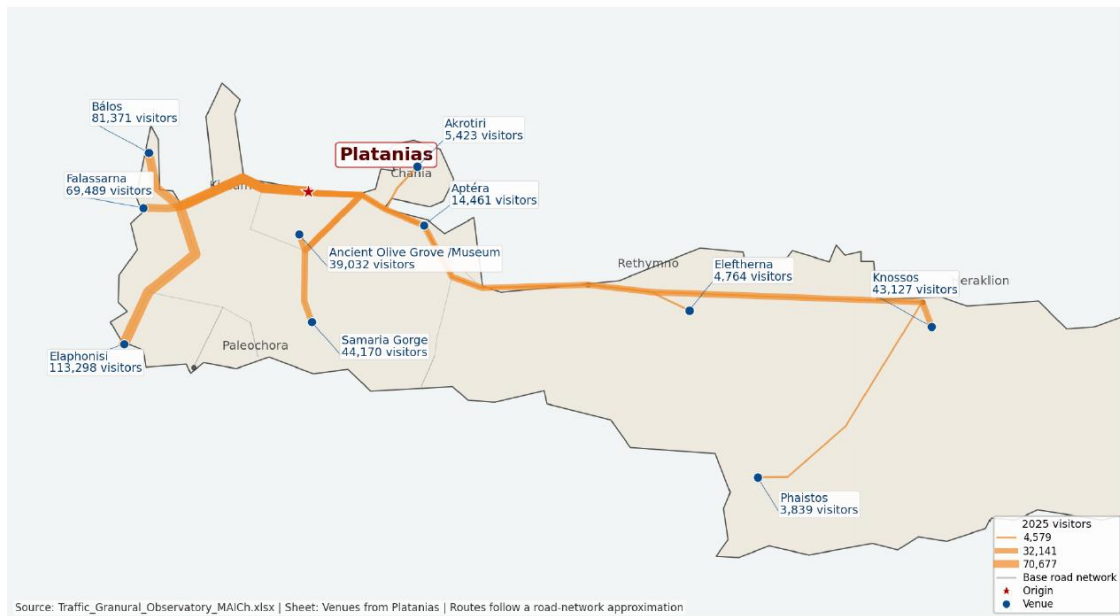


Figure 5: Visitor flows from places of stay to the most visited venues, 2025. Source: MAICh Tourism Observatory, annual survey co-financed by the Region of Crete.

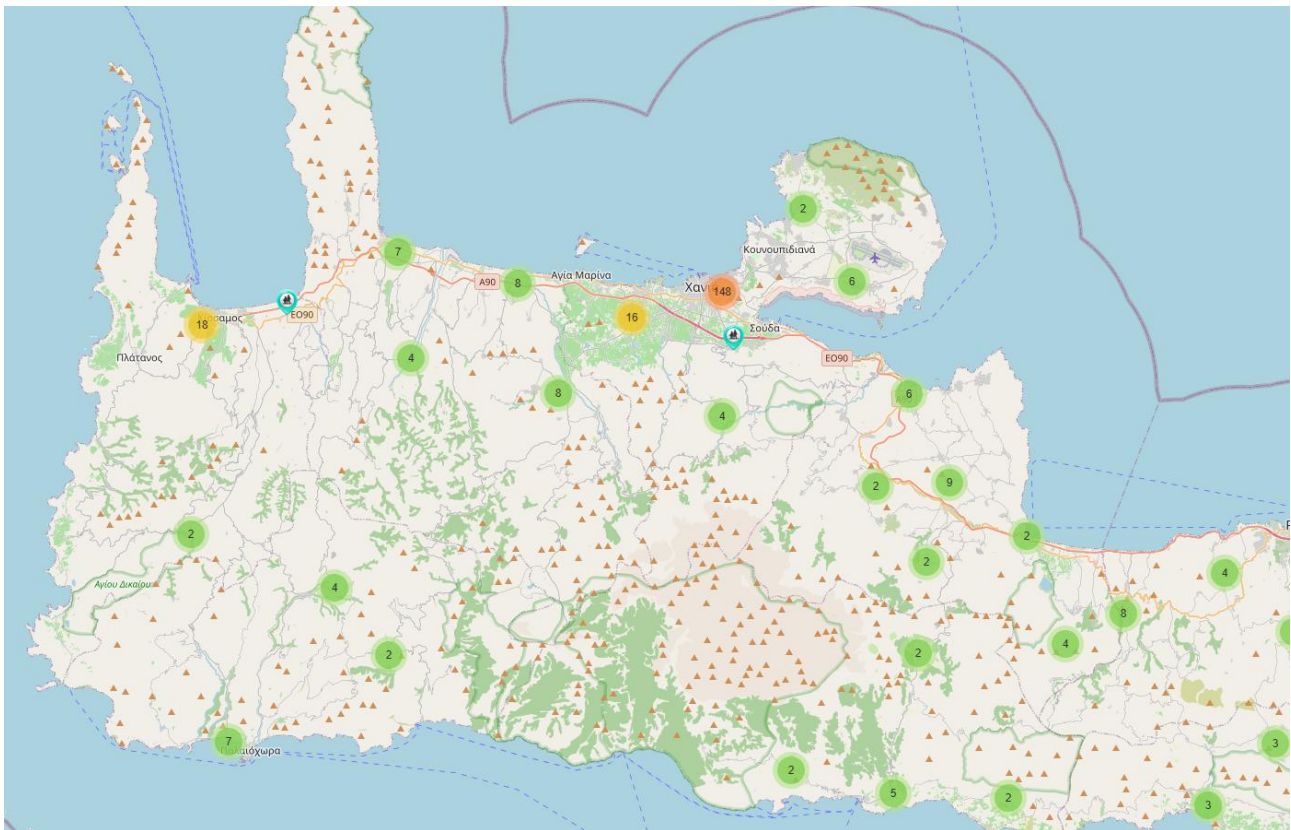


Figure 6: Schools in Rural Chania. Source: Rural Chania Replication Lab, based on data from the Directorates of Primary and Secondary Education.

In addition, the Lab drew on GRANULAR datasets: the accessibility notebook 'Accessibility by bicycle and car to secondary schools' and Facebook User Mobility data.

Preliminary assessment of the available data on public transport reveals that increasing tourism flows are linked to the availability or not and the frequency of public transport (buses) in Rural Chania.

As visitor numbers continue to rise, a growing share of economic activity in villages and countryside communities is linked, either directly or indirectly, to tourism-related services such as accommodation, food and hospitality, transportation, local products, and recreational activities.

Ignalina, Lithuania (RL)

The study's findings highlight the opportunities and limitations of embedding UD in rural governance:

- **Empathisation:** Through interviews, surveys, and observations, institutions and residents identified the everyday barriers to accessibility. These included poor road conditions, a lack of public or adapted transport options, and physical obstacles such as steep inclines or the absence of ramps in public buildings. Importantly, the process also highlighted expectations: residents wanted not only technical fixes but a broader cultural shift toward inclusivity.
- **Definition:** Institutions recognized that systemic barriers limited progress. Outdated infrastructure, especially in older public buildings, was a major obstacle, as was the absence of clear guidelines on how to apply UD and the shortage of financial and human resources. A lack of coordinated municipal assessments also made it difficult to plan improvements strategically.
- **Ideation:** Despite these constraints, stakeholders generated creative and context-sensitive solutions. Suggestions included mobile shuttle services to ensure older residents could attend cultural and sports events, micro-grants for low-cost but high-impact adaptations like tactile signage, and the inclusive revalorization of cultural heritage sites through virtual tours, tactile exhibits, or sign language interpretation. These ideas reflected both the needs of vulnerable groups and the region's ambition to strengthen tourism and community engagement.
- **Prototyping:** Institutions began to test concrete measures. Portable ramps, updated signage, and accessible websites were introduced in selected facilities. Volunteer groups – including both youth and seniors – were mobilised to assist with accessibility at local events, demonstrating the value of community participation. A Universal Design checklist and toolkit were also drafted to guide future planning and procurement.
- **Testing:** Feedback from residents confirmed that these measures improved usability, especially in public libraries, cultural venues, and tourism sites. However, significant gaps remained. Wheelchair users still faced challenges due to steep slopes and narrow doorways, while many public spaces lacked sufficient room for mobility devices. Past building renovations had often overlooked accessibility, making retrofitting costly and technically complex.

Practical implications and recommendations

P10 network, Netherlands (LL)

For municipal policy making, the practical lesson is to keep both channels open: formal indicators to compare places, and informal local knowledge to explain what lies behind them.

Rural Chania, Greece (RL)

Tourism dependence has generated significant economic benefits for rural communities in Chania, but it has also contributed to structural changes such as the decline of traditional agricultural activities, occupational shifts, and demographic ageing. At the same time, rural systems are increasingly exposed to external shocks, including public health crises, geopolitical instability, and climate-related events such as heatwaves, floods, and droughts, which can strongly affect tourism flows.

Rising tourism activity also places pressure on environmental resources, including increased water consumption, waste generation, land-use change, ecosystem degradation, and higher energy demand. These pressures may undermine the environmental quality and natural assets that constitute the region's primary tourism capital.

In this context, sustainable development in Rural Chania requires a balanced approach that combines tourism management with economic diversification and the protection of natural and cultural resources.

Ignalina, Lithuania (RL)

Drawing on the insights from the activities of the Ignalina Replication Lab, several key actions have been identified to enhance service delivery and embed Universal Design principles into public service development and governance:

- **Strengthening Institutional Capacity and Professional Competence:** The research revealed a fundamental gap in stakeholders' understanding of Universal Design (UD) – many lack not only awareness of its core principles but also clarity on how and when to apply them in practice. This deficiency undermines the consistent and effective integration of UD across public sectors and highlights the need for systematic institutional strengthening through structured capacity-building programs and targeted professional training. A shared and operational understanding of UD principles can be fostered through the Quadruple Helix model, engaging government bodies, academia and research institutions, the private sector, and civil society organisations. Such collaboration is essential to align expectations, exchange best practices, and build a unified vision for UD at both strategic and implementation levels. Establishing cross-sectoral UD task forces or national competence centres would further consolidate expertise, enhance policy coherence, and ensure that Universal Design becomes an embedded, measurable, and accountable element of service development and delivery.
- **Institutionalizing UD in Early-Stage Planning and Design Processes:** While some institutions have begun integrating accessibility and Universal Design principles into their strategic documents and internal plans, progress remains uneven across the country, with scattered initiatives and a lack of a unified national system for coherent implementation. Political commitment should therefore focus on embedding UD principles from the earliest stages of planning, procurement, and infrastructure design, ensuring that inclusivity becomes a structural component of governance. UD must serve as an integral criterion in feasibility studies, tender requirements, and stakeholder consultations to promote consistency and accountability. To operationalize this vision, stakeholders can mandate or encourage the use of a UD Checklist and Design Protocol Toolkit, providing practical, standardised guidance for planners, architects, and developers. By institutionalising these instruments, political and administrative actors can ensure that accessibility and inclusivity are systematically addressed rather than treated as afterthoughts in public investments and spatial planning.
- **Strengthening Financial Mechanisms and EU Project Participation:** The research findings revealed that certain public institutions have made notable progress in implementing Universal Design principles primarily through their participation in international projects and access to external funding, such as EU-supported initiatives. However, such progress remains project-dependent and unsustainable without dedicated national mechanisms. Therefore, a key political priority should be the establishment of stable financial schemes to support UD initiatives systematically. Governments and implementing bodies should actively engage in EU-funded programs (e.g., Horizon Europe, Interreg, or Erasmus+) to leverage European resources and expertise while ensuring that outcomes are mainstreamed into national and local practices. Simultaneously, introducing micro-grant schemes at local or regional levels could facilitate rapid, high-impact UD interventions – particularly in pilot projects, municipal services, and community-led design improvements. Clear and consistent funding frameworks will empower institutions to innovate, build capacity, and demonstrate the tangible benefits of UD for inclusive and sustainable development.

Transferability and broader relevance

Rural Chania, Greece (RL)

A key transferable lesson from the Rural Chania experience is the need to balance tourism-driven development with economic diversification and the protection of environmental and cultural assets. Key transferable insights include the importance of:

- strengthening multi-sectoral rural economies
- improving service accessibility and territorial connectivity
- managing tourism within environmental carrying capacity limits

- reinforcing place-based development strategies aligned with socio-ecological resilience principles

These all are particularly relevant for rural areas in Europe experiencing similar tourism pressures demographic decline and structural transformation.

Ignalina, Lithuania (RL)

While progress is possible, lasting change requires more than isolated interventions. Clearer legislation, stable funding, and coordinated strategies are essential. At the same time, small-scale, community-driven initiatives already demonstrate that Universal Design is more than a technical fix – it is a governance approach that fosters participation, equity, and resilience. Despite structural barriers, Ignalina illustrates how rural regions can act as laboratories for inclusive innovation, embedding UD into everyday services to meet diverse needs and strengthen long-term socio-economic sustainability. Across the three Labs the analytical angle is the same: convert access into an indicator that can be measured at village level, whether as bus frequency, distance to a school or a Universal Design checklist score. Built this way, the evidence captures rural diversity by design and feeds directly into place-based decisions about where to act first.

Further information

- Universal Design in the Ignalina region, peer-reviewed article (Sustainability, 2025): <https://www.mdpi.com/2071-1050/17/18/8311>
- Universal Design for inclusive rural development in Ignalina: <https://www.ruralgranular.eu/news/universal-design-for-inclusive-rural-development-granular-in-ignalina-region-lithuania/>
- Observatory for Social Inclusion of the Region of Crete: <https://socialobservatory.crete.gov.gr/index.php>
- GRANULAR project website: www.ruralgranular.eu

4.2. The impact of green transition

Who benefits from the green transition? Local ownership, capacity and the value that stays

Contributing Labs: Sweden (LL), Scotland (LL)

Summary for EIP-AGRI

Rural areas host much of what the green transition needs, but hosting it does not automatically mean benefiting from it. Two GRANULAR Labs looked at what decides whether local communities capture the value.

In Northern Sweden, covering four counties and about half of the country's land area, interviews with regional and municipal actors described a consistently double picture. Green investment brings jobs and capital, but also pressure on housing, services and planning, and conflicts over land where industry, wind power, forestry, tourism and Sami reindeer herding meet. The recurring worry is that rural areas supply the electricity, land, minerals and timber while the skilled jobs and the long-term value settle elsewhere.

Capacity decides the outcome. Grids, power supply, transport, housing, planning staff and labour are all bottlenecks, and small municipalities and firms are expected to adapt fastest with the least means.

The Scottish Lab reached the same conclusion from the ownership side. Community ownership of renewable energy brings real local benefit, but communities with higher deprivation are the least likely to start and complete such projects, and how much nearby residents gain from larger installations often depends on who owns the land.

◆ **Recommendations:** negotiate local benefit explicitly, through housing, skills, energy access and local supplier participation; make community benefit packages transparent and de-risk community ownership with grants, guarantees and model agreements; support lower-capacity communities proactively; require local jobs and green-skills pathways from large developments; and check grid, planning and housing capacity before scaling investment up.

Thematic context and relevance for rural areas

This theme addresses the prosperous and resilient pillars of the EU Long-Term Vision for Rural Areas, and the productive and environmental dimensions of the GRANULAR Rural Compass: the question is whether rural areas that host the transition also capture its value.

Northern Sweden, Sweden (LL)

The Northern Sweden Living Lab examines how the green transition affects rural areas across the four northern counties of Sweden. In this context, the green transition means investments and societal change linked to fossil-free solutions, resource efficiency and reduced environmental impact, while also aiming to create jobs and strengthen competitiveness. The theme is highly relevant for rural areas because many of the key resources linked to the transition are located here: forests, hydropower, wind power, land for industrial expansion, and minerals needed for electrification and European supply security.

At the same time, the transition creates major tensions in rural areas.

The evidence base for this theme is a set of five qualitative interviews with regional development bodies, municipalities and analytical cooperation partners. They show that the green transition is often presented as an opportunity for jobs, investment and innovation, but also as a source of pressure on housing, infrastructure, public services and local planning. Competing land uses are a central issue, especially where industrial expansion, wind power, forestry, tourism and Sámi reindeer herding meet. A recurring concern is that rural areas may host the production, extraction and environmental impacts, while the benefits do not always stay locally. For local decision-making this is the operative question: whether a municipality can convert an incoming investment into housing, skills, energy access and local supply contracts, or whether it absorbs the land-use pressure while the value settles elsewhere.

Rural Scotland, United Kingdom (LL)

More broadly, the Scottish and UK Governments are committed to achieving net zero by 2045 and 2050, respectively. The Scottish Government have aimed to achieve this through a just transition where the impacts of this policy shift are fairly and evenly distributed. The implications of the moves towards net zero are likely to be considerable in regions such as the North East of Scotland which have considerable employment in extractive industries (oil and gas), and in areas where livestock farming (which is particularly carbon-intensive) is a key sector. Conversely, some rural areas in Scotland have seen an expansion of schemes for renewable energy generation, in particular windfarms, and some communities and farms have pursued smaller-scale renewable diversification and community energy projects. In the case of larger installations, the extent to which nearby residents will benefit may be related to the nature of landownership and whether community benefit funding arrangements are present.

Living Lab / Replication Lab perspective

Northern Sweden, Sweden (LL)

The Northern Sweden Living Lab covers the four northern counties of Sweden: Norrbotten, Västerbotten, Jämtland Härjedalen and Västernorrland. Together, this geography covers about half of Sweden's land area. The Living Lab focuses on how the green transition affects rural development in a large, sparsely populated area where forests, rivers, hydropower, wind power, mineral resources and long distances shape both opportunities and constraints. The context also includes strong place-based sectors such as forestry, bioeconomy, reindeer herding, tourism and energy production.

The Lab brings together several types of actors and perspectives. In the presentation of the Living Lab, the relevant arenas include Northern Sweden Europe Forum (EFNS), Analysis cooperation, Northern Sweden, VIGO and other available platforms and project groups. For this thematic input, the evidence base consists mainly of five qualitative interviews carried out with actors linked to these arenas, covering regional development, municipal perspectives, analytical cooperation and project-based collaboration. This means the contribution is based primarily on stakeholder perceptions, observed patterns and practical experience rather than on one single statistical dataset. The interviews were used as a diagnostic instrument: they identify which conditions decide whether a green investment produces local development, and those conditions, grid and power capacity, housing stock, planning staff and labour supply, can then be checked municipality by municipality against existing administrative data.

Rural Scotland, United Kingdom (LL)

The Rural Scotland Living Lab works across rural Scotland, from accessible countryside to remote and island areas. For this theme, its focus is on who hosts, and who benefits from, the infrastructure of the transition to net zero: onshore wind, community energy, woodland creation and peatland restoration.

Key findings and data insights

Northern Sweden, Sweden (LL)

The main finding is that the green transition is not automatically experienced as rural development. Across the interviews, respondents consistently describe a dual picture: the transition can create jobs, investment and new business opportunities, but it can also intensify uneven development, pressure local systems and deepen conflicts over land and resources. A central issue is local benefit. Many respondents ask whether rural areas will mainly provide electricity, land, minerals and forest resources, while value creation, skilled jobs and long-term gains are concentrated elsewhere.

A second key finding is that local capacity is a major limiting factor. Respondents highlight bottlenecks in electricity grids, power capacity, transport systems, housing, planning capacity and labour supply. Smaller municipalities and firms are seen as particularly vulnerable: they are expected to adapt quickly, but often lack the staff, capital or infrastructure to do so. The interviews also show that the transition creates clear competing interests, especially between industrial expansion and other land-based values such as biodiversity, tourism, local living environments and Sámi reindeer herding. In this thematic work, the main “data” are therefore qualitative, drawn from interviews rather than from new quantitative indicators. What they produce is nonetheless usable as a set of diagnostic criteria: grid and power capacity, housing availability, planning capacity, labour supply and the presence or absence of local benefit arrangements. These differentiate sharply between rural areas, since a well-resourced municipality and a small one facing the same investment are in entirely different positions.

Rural Scotland, United Kingdom (LL)

Community energy analysis suggests that ownership can bring major benefits, but communities with higher deprivation may be less likely to start and complete projects. How much nearby residents gain from larger installations often depends on the nature of landownership and on whether community benefit funding arrangements are in place.

Practical implications and recommendations

Northern Sweden, Sweden (LL)

The findings suggest that rural stakeholders should pay close attention to how local value is created from green transition investments. For municipalities and regional actors, this means working not only to attract investment, but also to secure local benefits through housing, skills, energy access, local business participation and stronger links between production and local value creation. For policymakers, the results point to the need for better support for small municipalities, stronger grid and infrastructure investments, and governance models that recognise that rural areas often carry a disproportionate share of pressure and land-use impacts.

For practitioners, advisory actors and development agencies, the results underline the importance of place-based approaches. Rural development efforts should combine industrial opportunities with everyday community needs such as public services, local legitimacy and social sustainability. Practical action should therefore include earlier dialogue on conflicting land uses, stronger support to small and medium-sized enterprises, and more systematic attention to local capacity before major investments are scaled up. In practice this can be turned into a short check applied before consent: who hosts the impact, who receives the benefit, and whether the host municipality has the grid, housing and planning capacity to absorb the development. The findings are also relevant for national and EU-level decision-makers, because they show that broad green transition goals need to be matched by territorial fairness, local legitimacy and implementation capacity.

Rural Scotland, United Kingdom (LL)

Practical recommendations are: make community benefit packages more transparent and better aligned with current costs; de-risk community ownership and revenue-sharing models through grants, guarantees, technical advice and model agreements; provide proactive support to communities with lower capacity rather than waiting for them to request help; require large developments to create local jobs, apprenticeships and green-skills pathways; and

connect renewable energy benefits to local resilience priorities such as energy security, transport disruption, flood response and emergency facilities.

► Transferability and broader relevance

Northern Sweden, Sweden (LL)

The Northern Sweden experience is relevant for other rural areas in Europe where the green transition depends on land, energy, forests, water or mineral resources located outside major metropolitan regions. A key lesson is that large-scale green investments should not be assumed to generate local development automatically. Rural benefit depends on whether local communities are able to access jobs, infrastructure, services, energy capacity and decision-making influence. The interviews also suggest that “one-size-fits-all” transition narratives are insufficient, because effects vary strongly between places and between different types of rural context. The same conclusion is reached from a different direction by the Scottish Lab, using spatial data rather than interviews, which strengthens the case that this is a structural pattern rather than a Swedish peculiarity.

A broader lesson is that the green transition should be understood not only as industrial change, but also as a governance and territorial development challenge. Other rural areas in Europe may recognise similar patterns: local support is stronger when benefits are visible, local capacity is taken seriously, and competing interests are acknowledged rather than ignored.

Rural Scotland, United Kingdom (LL)

Fair climate action requires more than infrastructure delivery. It requires benefit-sharing, local ownership routes where feasible, skills and jobs for residents, and targeted support for communities and farms that have opportunities but lack finance or technical capacity.

🔗 Further information

- GRANULAR Living Lab Sweden, Regions of North Sweden: https://www.ruralgranular.eu/living_lab/living-lab-sweden-regions-of-north-sweden-sweden/
- Scotland's Rural and Island Futures, James Hutton Institute: <https://ruralfutures.hutton.ac.uk/projects>
- Scottish Index of Multiple Deprivation 2020: <https://www.gov.scot/collections/scottish-index-of-multiple-deprivation-2020/>
- GRANULAR project website: www.ruralgranular.eu

4.3. Natural resources

Seeing what official data misses: satellite imagery and local surveys for rural natural resources

Contributing Labs: France (LL), Serbia (RL)

Summary for EIP-AGRI

Rural economies depend on forests, water and protected landscapes, yet local data on their condition is usually missing. Two GRANULAR Labs closed that gap in very different settings.

In France, the Pays Pyrénées Méditerranée Lab, where forest covers more than 60% of the territory, built a tool to map forest decline from space. It combines Copernicus Sentinel-2 imagery with the French National Forest Inventory, processed in open-source QGIS and trained on fifteen field plots in a valley under severe drought since 2022. The result classifies the chestnut groves as 36% in low decline, 37% moderate and 27% severe, with field-checked accuracy of about 75%. Attempts to explain the pattern by site conditions were inconclusive.

In Serbia, the Golija Lab works inside a nature park of some 75,800 hectares, part of it a UNESCO Biosphere Reserve since 2001. Here the problem was that statistics do not exist at this scale, so the Lab combined official data with a survey of 175 visitors and 21 tourism providers, then validated the results in a workshop with local actors. Visitors named natural capital and local knowledge as the area's main asset, while weak waste and sewage services and heavy car use emerged as the pressures on it.

◆ **Recommendations:** use free satellite data and open GIS software to check the state of local ecosystems where no survey exists; where official statistics stop, run a small survey and validate it with local stakeholders; and hand the results to an existing local body, because in both Labs the findings led to action only once a forest charter in France and the park management structure in Serbia took ownership of them.

🎯 Thematic context and relevance for rural areas

This theme addresses the resilient pillar of the EU Long-Term Vision for Rural Areas and the environmental dimension of the GRANULAR Rural Compass: it concerns the condition of the natural assets on which rural livelihoods depend, and the evidence needed to manage them.

Pays Pyrénées Méditerranée, France (LL)

European forests cover 160 million hectares (EUROSTAT, 2020) and are a key feature of many rural areas across the EU. Abrupt climate change is leading to rapid changes in forests, their adaptation, and in some cases the decline of specific tree species. Observed and experienced by local residents and those who exploit the forest, this rapid evolution of the forest is a cause for concern due to its wide-ranging implications (outdoor activities, fire risk, wood industry, landscape, biodiversity, etc.).

Faced with this decline, the local stakeholders have expressed a need to measure the impact of climate change and drought, understand the causes of the decline, and anticipate the consequences for the future of the forest. Indeed, broad-scale projections help to understand the global climate trajectory, but detailed, territory-specific data is scarce: a question of granularity!

Golija, Serbia (RL)

The Replication Lab is active in Golija Nature Park, the largest and most wooded protected area in southwestern Serbia, covering about 75,800 ha across the mountains of Golija, Radočelo and Čemerno, near the towns of Ivanjica, Raška, Novi Pazar, Kraljevo and Sjenica. In 2001, a part of the nature park received the status of Biosphere Reserve "Golija-Studenica" within the UNESCO programme "Man and Biosphere". The area of the protected area is 53,804 ha. The relief consists of deep gorges, plateaus and numerous watercourses (Moravica, Studenica). The climatic area belongs to the temperate-continental climate zone with characteristics conditioned by the microclimatic influences of the valley-hill, transition and mountain zones.

📍 Living Lab / Replication Lab perspective

Pays Pyrénées Méditerranée, France (LL)

More than 60% of the region is covered by extensive forest, consisting mainly of deciduous species such as chestnut, beech and holm oak. This forest plays a vital role in local biodiversity (providing specific habitats), the economy (outdoor activities and timber harvesting), the mitigation of natural risks (such as wildfires), and cultural and heritage services (landscapes characteristic of the region). However, drought is directly affecting forest health, and ecosystems are struggling to adapt. Since 2022, the Vallespir region in France has been experiencing severe drought, which are damageing local biodiversity.

Local forestry stakeholders, brought together under the Regional Forest Charter, have observed the decline of specific tree species, particularly chestnut trees, a heritage species whose vulnerability is increasingly evident. Identifying and assessing the decline of the Vallespir chestnut grove is therefore a shared priority. This work helps improve understanding of climate change impacts on biodiversity, supports more adaptive forest management, and strengthens fire prevention strategies.



Figure 7: The Vallespir chestnut grove and field data collection. Source: Pays Pyrenees Mediterranee Living Lab.

Golija, Serbia (RL)

The Replication Lab operates in the Golija area, covering the territory of five local governments, with the largest part covering the territory of the municipalities of Ivanjica and Kraljevo, and that part of the nature park is protected as a Biosphere Reserve by UNESCO. Each of the municipalities brings its own development plans for its territory, and for the territory of the nature park itself, Srbijašume as the manager of the area brings a 10-year management plan that comprehensively deals with the issue of protection and sustainable development of the area. The area is distinctly rural, with a very low population density, as well as a trend of pronounced depopulation and an ageing trend of the population living in the area. The area is characterised by highly valuable natural resources and the existence of a significant cultural heritage that is part of the world and national cultural heritage. Agricultural production is based on organic animal husbandry, the production of potatoes and raspberries, as well as the production of cereals that can be grown in the mountainous area (wheat, oats, buckwheat). Forestry is one of the important activities that the local population engages in, either as a supplemental activity or as a primary activity. RL Golija works with a broad range of partners, all relevant for local and regional development in the region of Golija, including local self-government representatives, tourist organisations, local associations, local inhabitants and business sector representatives. National actors are also involved according to their responsibility and impact on the socio-economic development of the area. A significant social asset relevant for the work of RL Golija is the non-official local partnership for rural development, built through the activities of IDA while implementing the principles of LEADER in the local partnership over almost 15 years.

🔍 Key findings and data insights

Pays Pyrénées Méditerranée, France (LL)

The modelling tool was developed using Copernicus satellite imagery (Sentinel-2) and data from the French National Forest Inventory (IGN), processed through the QGIS geographic information system. The model combines several remote sensing indices related to vegetation, chlorophyll, moisture and pigments. It was trained using field data from fifteen plots across the Vallespir region.

Results classify the chestnut grove into areas of low decline (36% of the total area), moderate decline (37%) and severe decline (27%) using a supervised statistical approach. Areas with mild to moderate decline are mainly located in Haut-Vallespir and around Saint-Laurent-de-Cerdans, one of the earliest chestnut planting areas. The most severe decline is observed around Reynès and above Amélie-les-Bains, further down the valley.

Field validation indicates an accuracy of approximately 75%. Initial statistical analyses attempting to link decline levels to environmental and stand conditions were inconclusive. The analytical value lies in the spatial resolution: broad climate projections describe a trajectory, whereas this classification identifies which stands are declining and where, which is the level at which forest management decisions are actually taken.

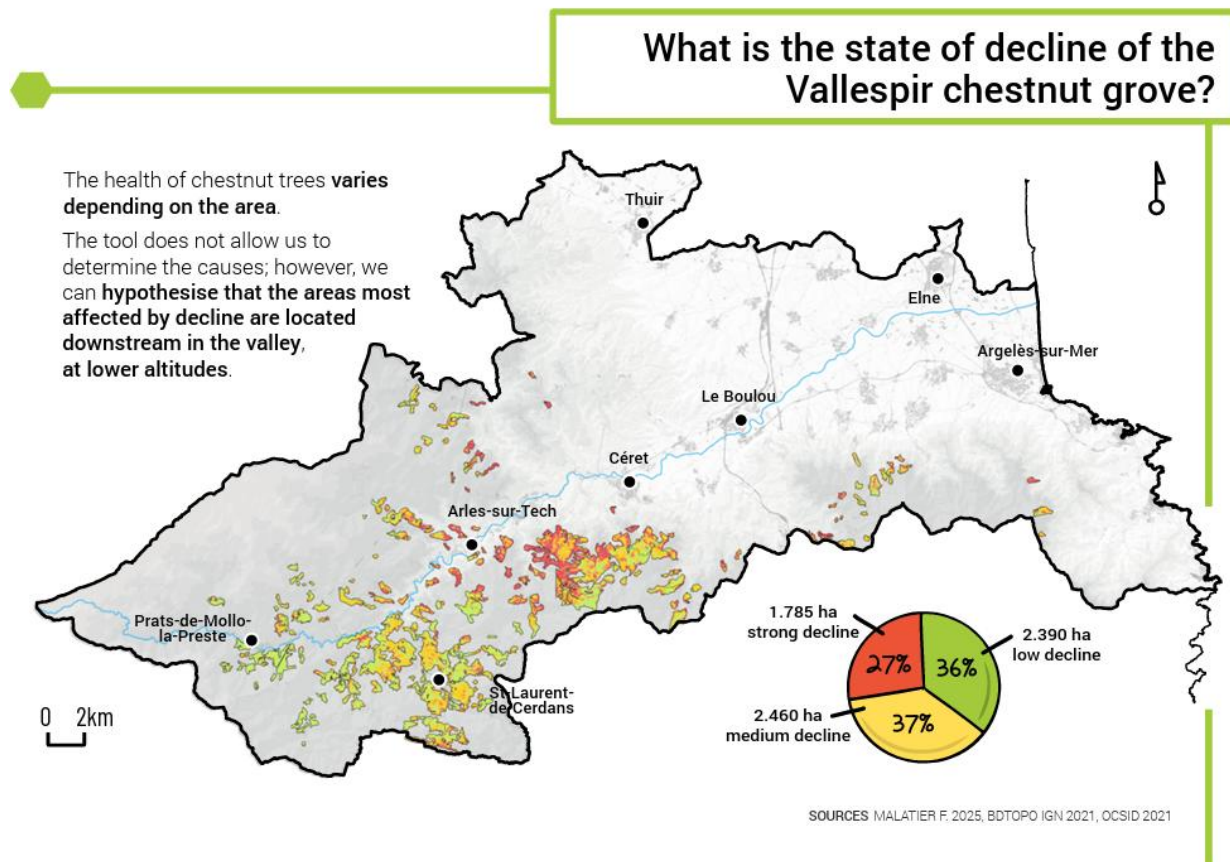


Figure 8: State of decline of the Vallespir chestnut grove. Source: Pays Pyrenees Mediterranee Living Lab (Malatier F., 2025; BDTOP0 IGN 2021; OCSol 2021).

Golija, Serbia (RL)

To build an evidence base where micro-level statistics do not exist, the Lab combined official data from the Republic Institute of Statistics and the tourist organisations of the five municipalities with its own field research among visitors and rural tourism providers, and checked the results with local actors in a workshop.

For this theme the key results concern the state of the natural capital itself. Visitors identified the park's natural assets, together with human capital and local knowledge such as gastronomy and the gathering of forest fruits, as the area's principal value. The same research documented the pressures on that capital: underdeveloped waste collection, the absence of a sewage network and dominant car use place a direct burden on the protected environment, and the expansion of tourism infrastructure, including the ski centre under development at Odvračenica, carries an environmental impact that is not yet clear.

Practical implications and recommendations

Pays Pyrénées Méditerranée, France (LL)

The results are collated and shared with local decision-makers, notably through a summary accessible to those new to the subject. Several meetings have also been held between the partners of the Local Forest Charter on the question of adapting to climate change.

Local stakeholders collectively reviewed the methodology, discussed the results and explored possible responses, particularly in terms of forest management. For example, the local guide for chestnut grove owners is to be updated, with the impact of and adaptation to climate change as its central theme.

Partners of the Territorial Forest Charter also aim to test in-situ adaptive forest management practices suited to the future climate. The final recommendation is to continue and improve the collective monitoring of the chestnut groves (including investigating the causes of decline).

The tool provides valuable large-scale insights into forest health in an area where data has so far been limited. It also complex remote sensing methods accessible to local stakeholders familiar with Geographic Information Systems, supporting more informed decision-making.



Figure 9: Partners of the Territorial Forest Charter during a field visit to the chestnut groves. Source: Pays Pyrénées Méditerranée Living Lab.

Golija, Serbia (RL)

For the management of a protected area, the process showed how to plan where micro-level statistics are missing: interviews, targeted analyses and projections from existing data produced assessments robust enough to plan with, and cross-sectoral consultation kept the different users of the park's resources in one conversation.

It also showed how the experience of other Labs and the methodology and tools developed in GRANULAR can be used to reconcile development with protection regimes, bringing risk planning for municipal waste, forest fires and pressure on plant and animal habitats into the area's development decisions.

► Transferability and broader relevance

Pays Pyrénées Méditerranée, France (LL)

The issue of the impact of climate change on European forests is a cross-cutting concern for many rural areas across Europe, including those affected by drought in Mediterranean forests. Enabling rural local stakeholders (forestry experts, but also elected representatives, landowners, outdoor activity associations, etc.) to carry out detailed monitoring and develop a joint local project for climate change adaptation is likely to be of interest to other regions across the EU.

For multi-stakeholder forestry contexts, the decisive asset is the monitoring evidence itself: an existing forum such as the Regional Forest Charter is what turns it into discussion on the findings and their implications for forest management, addressing a range of issues, for example: when faced with a stand of dead trees, is it appropriate to intervene to support the establishment of other tree species better suited to high temperatures, or is leaving the dead wood in situ more beneficial because it promotes the development of a habitat for biodiversity? The wider point is that the whole chain, free satellite imagery, a national inventory and open GIS software, is available to any rural territory, and that its usefulness comes from pairing the monitoring data with a local body, here the Regional Forest Charter, able to take the results and act on them.

Golija, Serbia (RL)

The experience of RL Golija represents an example for other areas to implement, based on existing experience combining participatory planning and analysis of existing data, their own approach to creating policies that enable the development of an offer based on the natural and cultural heritage of the area, as well as principles of balanced development defined by the UNESCO programme "Man and Biosphere".

An additional possibility for replication relates to the fact that the Lab is located in a candidate country rather than a full member of the EU. This brings the challenge that certain rural development policies are not related to frameworks agreed at EU level, and that the country is not part of the existing statistical systems such as Eurostat. The experience can therefore serve areas and communities located in European countries that are not members of the EU, as well as those that are part of the EU but need comparative solutions for their territory based on existing experience.

Further information

- GRANULAR Living Lab France, Pays Pyrénées Méditerranée: https://www.ruralgranular.eu/living_lab/living-lab-france-ppm/
- Golija-Studenica Biosphere Reserve, UNESCO Man and the Biosphere programme: <https://www.unesco.org/en/mab/golija-studenica>
- Copernicus Sentinel-2 land monitoring data: <https://www.copernicus.eu/en/copernicus-services/land>
- QGIS open-source GIS software: <https://qgis.org/>
- GRANULAR project website: www.ruralgranular.eu

4.4. Climate change

Climate change hits rural areas twice: from extreme weather and from climate policy itself

Contributing Lab: Scotland (LL)

Summary for EIP-AGRI

Climate change hits rural areas twice: through the weather itself, and through the policies designed to respond to it. The GRANULAR Living Lab in rural Scotland examined both, and built spatial evidence showing where each one lands.

The direct impacts are already visible. Floods, storms, dry spells and wildfires affect community resilience and land-based industries, and in upland and remote areas households that rely on private water supplies have found them vulnerable during dry, warm periods.

The policy impacts are just as uneven. Scotland targets net zero by 2045 and the UK by 2050, and delivering this depends heavily on rural land. Mapping wind turbines against the national urban-rural classification, the Scottish Index of Multiple Deprivation and agricultural land capability showed that 44% of turbines stand in accessible rural areas and 37% in very remote rural areas, against 0.9% across all urban classes. Around 21% are on islands. Only 4% are on prime farmland. Community ownership delivers real local benefit, but the more deprived communities are the least likely to start and complete such projects.

◆ **Recommendations:** bring spatial evidence into planning early, mapping infrastructure, land capability, deprivation and grid constraints together; where development goes on productive land, minimise soil disturbance and require restoration plans; support realistic agri-renewable diversification on farms with advice on planning, grid connection and business models; and link climate infrastructure to local resilience needs such as energy security, transport disruption, flood response and emergency facilities.

Thematic context and relevance for rural areas

This theme addresses the resilient and connected pillars of the EU Long-Term Vision for Rural Areas and the environmental dimension of the GRANULAR Rural Compass: it examines both the physical impacts of climate change on rural areas and the territorial effects of the policies designed to address them.

Climate change is having significant impacts across rural Scotland, with an increase in extreme events (floods and storms, dry periods and wildfires) having implications for the resilience of communities and the land-based industries and agriculture. As an example, some residents in upland and remote rural areas often rely on private water supplies which have proven vulnerable during dry and warm spells. Scotland's net zero commitment for 2045, a more ambitious target than the UK-wide 2050, adds a further layer of land use change on top of these direct impacts. Woodland expansion and peatland restoration are also increasingly taking place in agricultural and mountainous areas, while other land use changes - natural flood management schemes - represent both responses to flood risk and offer potential for recreation and support for ecosystem services.

Living Lab / Replication Lab perspective

The Rural Scotland Living Lab covers Scotland outside of urban areas (settlements with a population of 10,000 residents or more), capturing small towns and rural settlements across a very diverse territory, from accessible rural areas to remote and island regions. The National Islands Plan and the Population Strategy reflect the growing policy attention to these differences.

Over the course of GRANULAR, the Lab team worked with stakeholders from the public, private and civil society sectors on the climate-related strands of this work: a rural proofing assessment focused on the Environment Strategy for Scotland, and interviews on rural resilience indicators.

Key findings and data insights

The analysis combines spatial data on renewable energy capacity, wind turbine locations, the Scottish Government Rural-Urban Classification, the Scottish Index of Multiple Deprivation and Land Capability for Agriculture. This evidence shows that renewable infrastructure is highly uneven across space, and the three datasets are what make that visible: the classification distinguishes accessible from remote rural areas, the deprivation index identifies which communities can act on an opportunity, and land capability shows what is being given up. A major finding is that wind turbines are overwhelmingly rural: 44% are in accessible rural areas and 37% in very remote rural areas, while only 0.9% are in the first five urban-rural classes, from large urban areas to very remote small towns. Around 21% of turbines are on islands, despite their small land area and population.

The Living Lab also identified differences in the type of rural exposure. Accessible rural areas contain many individual turbines and some large wind farms, while very remote rural areas tend to host larger clustered commercial developments. Land capability analysis indicates that prime agricultural land is largely protected, with only 4% of turbines located there, while land classes 3.2-5.3 may offer practical opportunities for agri-renewable diversification, especially where farm incomes are under pressure.

Practical implications and recommendations

Rural communities and policy makers should use spatial evidence early in planning renewable energy development. Mapping turbines, land capability, deprivation, grid constraints and rural-urban context can show where infrastructure burdens are concentrated and where benefit-sharing should be strengthened.

Practical recommendations are: treat adaptation and mitigation together in rural planning, pairing flood response, water security and emergency facilities with the roll-out of renewables, woodland expansion and peatland restoration; rural-proof national net zero policy so that its costs and disruptions, from changing land use to pressure on land-based industries, are assessed for rural and island communities before decisions are taken; and use spatial evidence of where climate impacts and climate infrastructure fall to target support at the most exposed communities.

For farms, support should focus on realistic agri-renewable diversification, including advice on planning, grid connection, business models and soil protection. Development on productive land should minimise soil disturbance and include restoration plans.

These recommendations can help ensure that rural areas are not only sites of climate infrastructure, but active beneficiaries of the climate transition.

► Transferability and broader relevance

The Scottish experience is transferable to other European rural areas where climate policy depends on land-intensive renewable energy, bioenergy, grids or storage infrastructure. A common lesson is that national climate targets can create local rural impacts, so rural proofing and place-based evidence are needed before decisions are made.

Other rural areas can adapt the approach by combining infrastructure datasets with rural classifications, socio-economic indicators and land-use data. This helps identify who hosts infrastructure, who benefits, and where additional support is needed. The approach is especially relevant for islands, remote rural regions, farming areas and communities with lower institutional capacity.

The method is itself the transferable output: joining infrastructure locations with rural classifications, deprivation and land capability produces a rural proofing of climate policy that can be repeated from national datasets in any Member State, and it shows where a measure will land before the decision is taken rather than after.

🔗 Further information

- Scottish Index of Multiple Deprivation 2020: <https://www.gov.scot/collections/scottish-index-of-multiple-deprivation-2020/>
- Scottish Government policy on reducing emissions: <https://www.gov.scot/policies/climate-change/reducing-emissions/>
- Scottish Government policy on climate change adaptation: <https://www.gov.scot/policies/climate-change/climate-change-adaptation/>
- GRANULAR project website: www.ruralgranular.eu

4.5. Demographic change

Rural ageing is a symptom of out-migration: what fine-grained data reveals and what it changes

Contributing Labs: Spain (LL), Finland (RL)

Summary for EIP-AGRI

Rural depopulation and ageing are well known, but the figures that matter usually sit below the level at which statistics are published. Two GRANULAR Labs worked at that finer scale and found what aggregate data hides.

The Spanish Lab in Ourense examined the population aged 100 and over, an age band Eurostat does not publish. Centenarians cluster in inland rural provinces rather than coastal or metropolitan ones. Their share in Ourense and Lugo is close to double that of urban A Coruña, and only 16.5% of the province's centenarians live in the city of Ourense itself. The Lab's reading matters: this is not mainly greater longevity but a structural effect, in which the very old form a growing share of populations that keep shrinking.

The Finnish Lab measured the same process in motion. In the SavonLuotsi LEADER area the population fell from 34,488 in 2010 to 27,938 in 2024, a 19% decline with no sign of slowing, while the old-age dependency ratio rose from 42 to 75 and internal migration stayed negative every year. The same data also shows renewal: the share of foreign-language speakers rose in every municipality, reaching 7.7% in Joroinen by 2025.

◆ **Recommendations:** measure below the level national statistics publish, because municipal averages hide sharp differences between neighbouring places; read ageing indicators as a symptom of out-migration rather than of longevity alone; and treat immigration, return migration, retirement migration and seasonal residents as measurable sources of renewal, adjusting services and municipal funding to where people actually live.

Thematic context and relevance for rural areas

This theme addresses the stronger pillar of the EU Long-Term Vision for Rural Areas and the residential dimension of the GRANULAR Rural Compass: it concerns who lives in rural areas, who leaves, who arrives, and what that means for the services they depend on.

Ourense, Spain (LL)

Demographic change is one of the most significant challenges facing rural areas across Europe. Many rural territories are experiencing population decline, ageing populations, low birth rates and the outmigration of young people, with important consequences for economic development, service provision and social cohesion.

In the Spanish context, these trends are particularly visible in many inland rural areas. Demographic change affects the availability of labour, the sustainability of public services and the long-term vitality of local communities. At the same time, demographic challenges also create opportunities to rethink rural development strategies, improve quality of life, attract new residents and strengthen local resilience.

Understanding demographic dynamics is therefore essential for designing effective policies that respond to the diverse realities of rural territories and support their long-term sustainability.

South Savo, Finland (RL)

The Replication Lab (RL) South Savo is located in the South Savo region of Eastern Finland. The area is characterised by extensive forest resources, a unique lake landscape and archipelago, and a high concentration of second homes and seasonal residents. At the same time, the region faces significant demographic challenges. The population is both shrinking and ageing, while many rural communities struggle with maintaining services, creating employment opportunities, improving accessibility, and ensuring long-term regional vitality. The absence of universities in the region further contributes to the out-migration of younger age groups.

Demographic change is therefore a highly relevant theme for rural development in the area. Population decline and ageing affect, for instance, the availability of labour, and the sustainability of public services. At the same time, seasonal residents, return migrants, and immigrants represent potential sources of demographic renewal and local development. In this case, understanding these demographic trends is essential for developing effective policies and strategies that support resilient and attractive rural areas.

Living Lab / Replication Lab perspective

Ourense, Spain (LL)

The Spanish Living Lab focuses on the province of Ourense, a predominantly rural territory characterised by dispersed settlements, an ageing population and long-standing demographic challenges. The area combines small and medium-sized municipalities with different demographic trajectories, levels of accessibility and economic structures.

The Living Lab brings together local authorities, rural development organisations, researchers, civil society organisations and other territorial stakeholders interested in addressing demographic change and its implications for rural development.

The demographic focus emerged as a priority due to concerns regarding population decline, ageing, service accessibility and the future sustainability of rural communities. Through a participatory process, stakeholders explored both the challenges and opportunities associated with demographic change in the province.

The study was based on data from the entire province, with specific participatory activities carried out in the province, focusing primarily on the city of Ourense (due to its importance for understanding the surrounding rural dynamics), Ribadavia and Allariz (as intermediate points for analysing rural centres with economic dynamism and specific high-value-added industries), and San Xoan de Rio (as an isolated rural area facing the most severe problems of an ageing population and a lack of economic dynamism). During the activity the Lab involved key stakeholders from all these areas (mayors, GDR leaders, entrepreneurs, etc.) in ongoing processes to develop participatory methodologies, such as workshops, interviews, and seminars.

It also integrated these leaders into the international Cross-Visits to foster their involvement and the replication of successful experiences within the LL territory.

Regarding data and analysis at the provincial level, the process began with a participatory analysis involving public and private administrations until potential data sources for analysis were identified.

South Savo, Finland (RL)

The activities of the Rural Lab focused mainly on the area covered by the LEADER Local Action Group SavonLuotsi. SavonLuotsi was established in 2023 through a merger of two LEADER organisations, yet the LEADER approach has been present in the area since 1996. The LAG encompasses the municipalities of Juva, Joroinen, Rantasalmi, Sulkava, Enonkoski, and the rural areas of Savonlinna. The SavonLuotsi local development strategy seeks to strengthen the attractiveness and vitality of the region through four strategic priorities:

- Sustainable, smart, and participatory communities
- A vital and sustainable economic sector
- Prosperous nature, environment, and climate
- Youth as drivers of future development

Demographic change is directly linked to all these strategic priorities, and also emerged as a central theme within the RL. On this regard, there are growing concerns among municipalities, LEADER actors, local associations, and regional development organisations regarding population decline, ageing, labour shortages, and the future viability of rural communities.

Key findings and data insights

Ourense, Spain (LL)

The analyses carried out within the Living Lab confirmed the existence of significant demographic challenges affecting many rural municipalities in the province. The results highlighted patterns of population ageing, declining population density and uneven demographic dynamics across the territory.

The data also showed important differences between municipalities, suggesting that demographic change does not affect all rural areas in the same way. Factors such as accessibility, economic opportunities, service availability and proximity to urban centres influence local demographic trends.

The combination of statistical information, territorial indicators and stakeholder knowledge provided a more comprehensive understanding of demographic processes and their impacts on local communities. The findings highlighted the importance of considering demographic change as a multidimensional phenomenon linked to economic, social and territorial factors.

More in depth, there is a preponderance of longevity in Spain compared to Europe as a whole. The data on ageing in Spain again shows a relationship between hyperlongevity and rurality. In this regard, it is very useful to analyse the ratio of people over 100 years of age by province, as this age range is not provided by Eurostat. The following figure (Figure 10) shows a very clear territorial pattern in the distribution of the population aged 100 and over in Spain. The highest values are concentrated in inland and mainly rural provinces, especially in Castile and León, Aragon and Galicia (such as Soria, Ourense, Teruel, Zamora and Salamanca). In contrast, coastal provinces and large metropolitan areas (Murcia, Cadiz, Almeria, Barcelona, Malaga and Madrid) have lower percentages of centenarians. Overall, the pattern is consistent with demographic ageing, depopulation and the exodus of young people from rural inland areas. Rather than simply indicating greater longevity, these high percentages largely reflect a population structure effect, where very advanced age groups represent a larger proportion of increasingly smaller total populations.

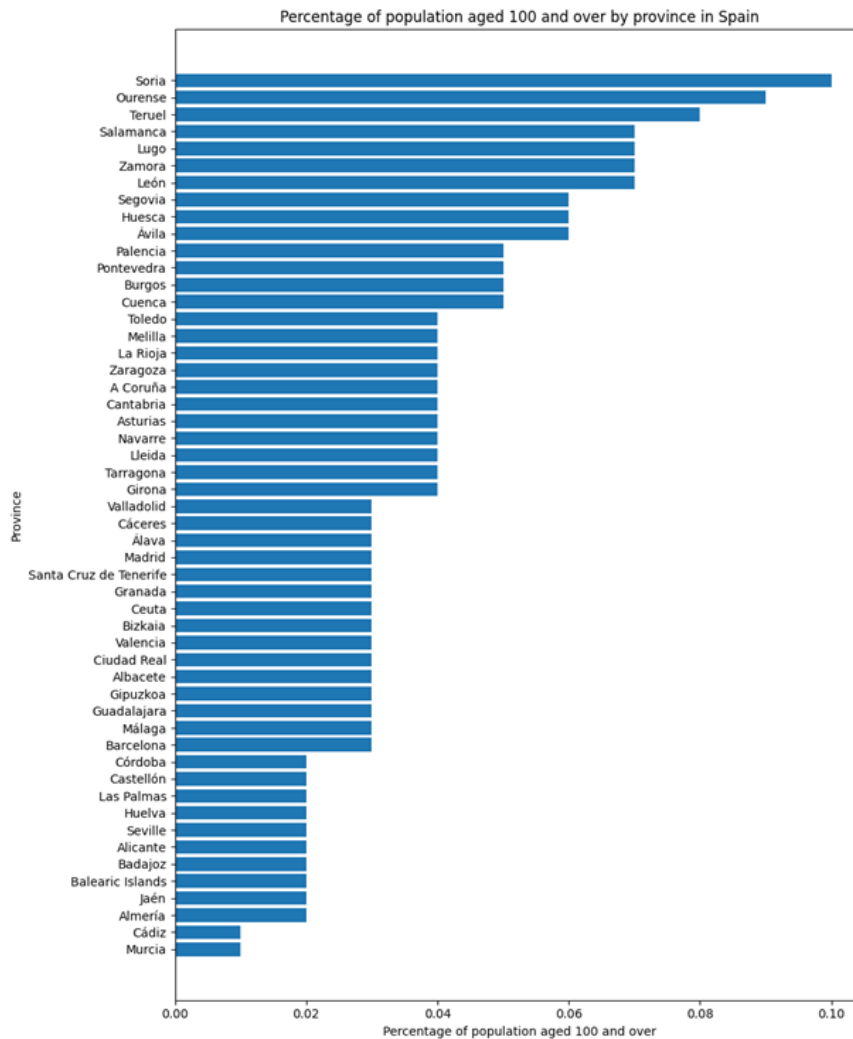


Figure 10: Population aged 100 and over by Spanish province, as a share of total population. Source: own elaboration by the Ourense Living Lab, based on INE data.

Moving further down the scale, in Galicia, where two of the most aged provinces (Lugo and Ourense) are concentrated, according to IGE data, in 2022, the province of Ourense had a total of 387 people over 100 years of age, compared to 313 in Lugo, 646 in A Coruña and 693 in Pontevedra. Although Lugo and Ourense (more rural provinces) have fewer people in this age range than the provinces of Pontevedra and A Coruña (more urban provinces), the relative number of hyper-longevous people in the provinces of Ourense and Lugo is clearly higher than in the western urban provinces of Galicia. The following figure (Figure 11) shows that the percentage of this population sector in Ourense and Lugo is almost double that of A Coruña in relative terms. Finally, looking only at the distribution of people over 100 years of age in the province of Ourense itself (the most hyper-long-lived of the above), it can be seen that, according to data from the Galician Geographical Institute (IGE), only 64 people over 100 years of age live in the city of Ourense itself. Therefore, only 16.5% of the hyper-longevous in the province of Ourense live in urban environments. The analytical point is methodological as much as demographic: because Eurostat does not publish the 100 and over age band, the pattern only becomes visible when national and regional statistics are used, which is a concrete illustration of what finer-grained rural data adds to the European picture.

	Total population by province	Population over 100 years of age by province	Percentage of people over 100 years old out of the total
A Coruña	1,119,180	646	0.058%
Lugo	323,989	313	0.097%
Ourense	304,280	387	0.127%
Pontevedra	943,015	693	0.073

Figure 11: Population aged 100 and over as a share of the total, Galician provinces, 2022. Source: own elaboration by the Ourense Living Lab, based on IGE data.

Other data show that the proportion of people aged 100 or over within the population aged 65 or over in the province of Ourense remained broadly stable between 2021 and 2025. Among men, the percentage was constant at 0.1% throughout the period, whereas among women it stood at 0.4% in every year except 2022, when it fell to 0.3%. Consequently, the total percentage was 0.3% in 2021 and from 2023 to 2025, with a temporary decline to 0.2% in 2022. The consistently higher values recorded for women indicate a marked gender difference in extreme longevity, with the proportion of female centenarians being approximately four times that of men in most years.

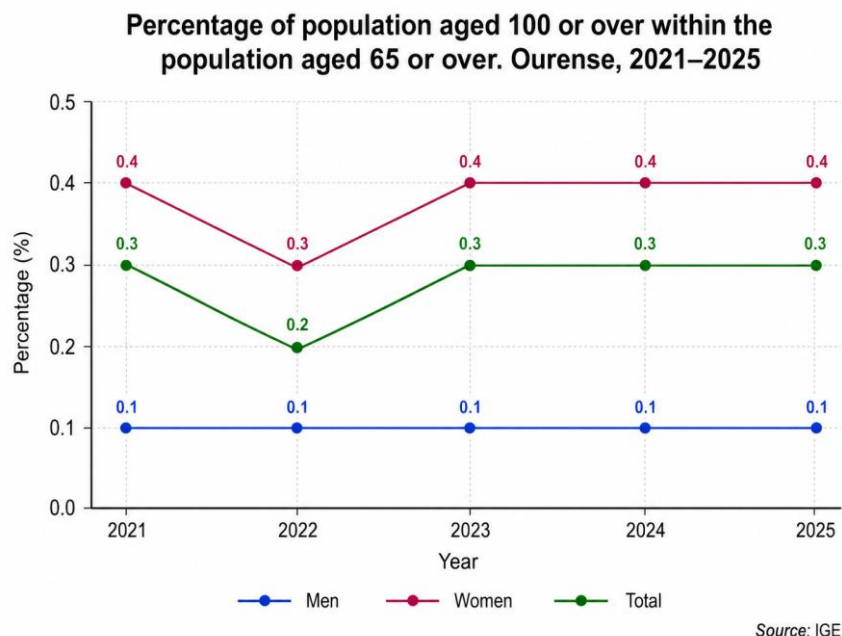


Figure 12: Share of people aged 100 or over within the population aged 65 or over, Ourense, 2021-2025. Source: own elaboration by the Ourense Living Lab, based on IGE data.

South Savo, Finland (RL)

The analysis reveals a sustained process of population decline in the SavonLuotsi LEADER area. The population decreased from 34,488 inhabitants in 2010 to 27,938 in 2024, representing a total decline of approximately 6,550 inhabitants or 19%. The decrease was continuous throughout the entire period, with no clear signs of slowing.

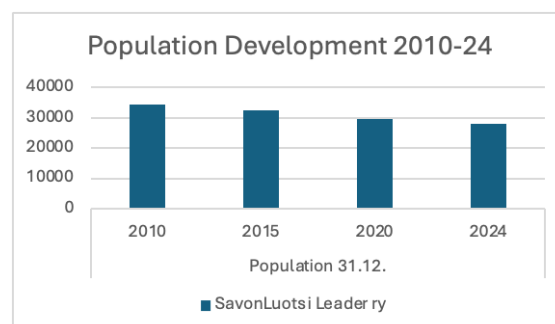


Figure 13: Population development in the SavonLuotsi LEADER area, 2010-2024. Source: Statistics Finland, Rural Indicators geospatial data.

Net internal migration has contributed significantly to this trend. Net internal migration remained negative in 2010-2024, indicating a persistent net outflow of population from the SavonLuotsi LEADER area to other parts of Finland. The migration balance declined from -169 persons in 2010 to -262 in 2020 and remained strongly negative in 2024 (-203).

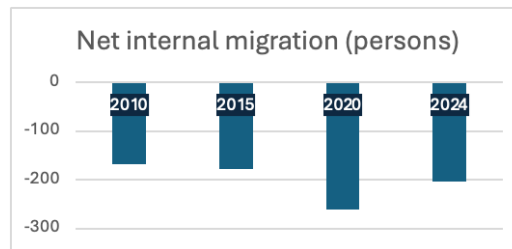


Figure 14: Net internal migration, SavonLuotsi LEADER area. Source: Statistics Finland, migration statistics.

At the same time, the area experienced also substantial population ageing. The old-age dependency ratio increased from approximately 42 in 2010 to 75 in 2024.

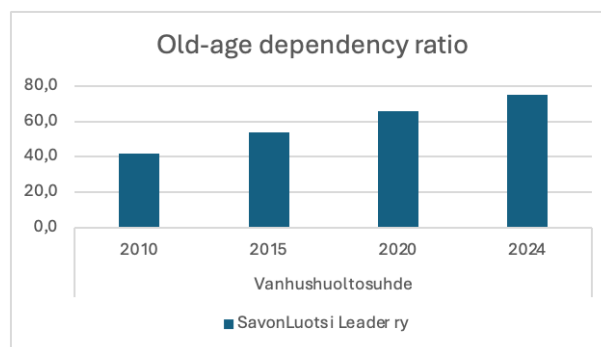


Figure 15: Old-age dependency ratio, SavonLuotsi LEADER area. Source: Statistics Finland, Rural Indicators geospatial data.

This indicates that the number of older people relative to the working-age population has increased considerably, creating growing pressure on local labour markets and public services.

Changes in the population structure further reinforce this trend. Younger age groups have declined markedly over the study period, particularly among those aged 0–14 and 15–24. The working-age population (15–64 years) has also contracted significantly.

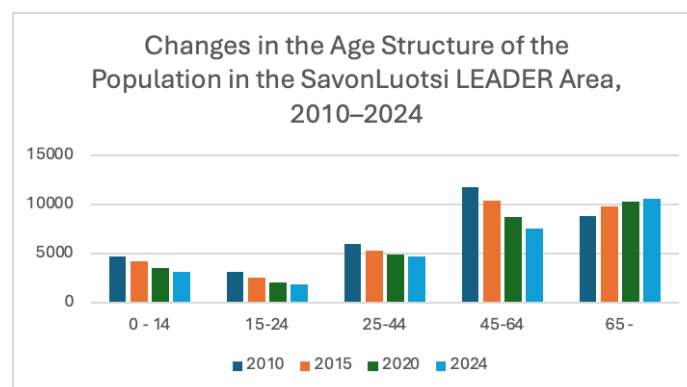


Figure 16: Changes in the age structure of the population, SavonLuotsi LEADER area, 2010-2024. Source: Statistics Finland, Rural Indicators geospatial data.

The youngest working-age groups (15–24 and 25–34) have experienced substantial declines, suggesting a shrinking population of young adults and continued out-migration. While some age groups between 30 and 44 years have stabilised in recent years, a pronounced decline is visible among those aged 45–64 as the large post-war cohorts transition into retirement.

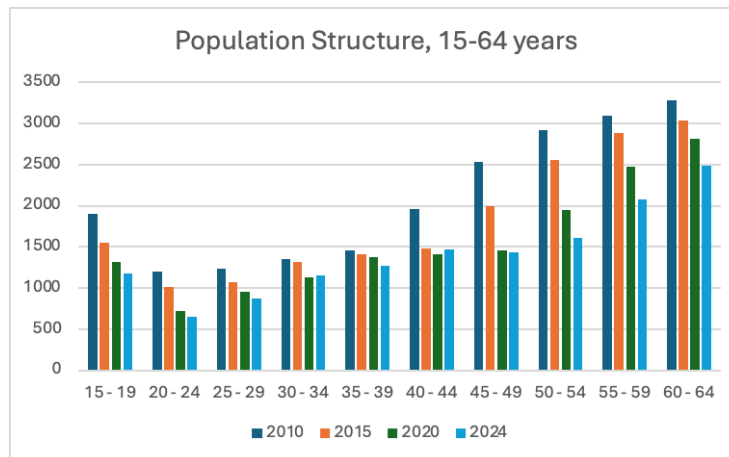


Figure 17: Population structure aged 15-64, SavonLuotsi LEADER area. Source: Statistics Finland, Rural Indicators geospatial data.

Within the older population, ageing is becoming increasingly concentrated in the oldest age groups. While the younger retirement-age groups (65–69 and 70–74) have recently stabilised or declined slightly, the numbers of people aged 75–79 and particularly those aged 85 and over continue to grow.

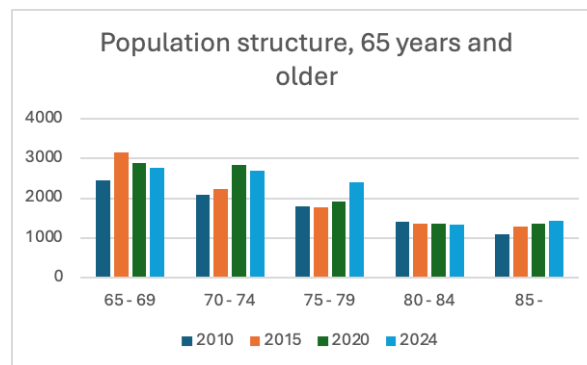


Figure 18: Population structure aged 65 and over, SavonLuotsi LEADER area. Source: Statistics Finland, Rural Indicators geospatial data.

This development points to increasing demand for healthcare, long-term care, and age-related support services in the coming years.

Despite overall population decline, immigration has become an increasingly important source of demographic renewal. The proportion of foreign-language speakers increased substantially across all municipalities between 1995 and 2025. Growth was relatively modest during the early years but accelerated notably after 2010. While Savonlinna historically had the highest share of foreign-language speakers in the area, municipalities such as Joroinen and Rantasalmi have recently experienced particularly rapid growth. In 2025, for example, the share of foreign-language speakers reached 7.7% in Joroinen. Although starting from low baseline levels, the proportion of foreign-language speakers has multiplied in all municipalities, highlighting the growing importance of immigration even in predominantly rural areas.

Table 4: Share of foreign-language speakers (%) in the SavonLuotsi LEADER area municipalities and the Savonlinna sub-region, 1995-2025. Source: Statistics Finland, population structure statistics (Väestörakenne).

Year	Enonkoski	Joroinen	Juva	Rantasalmi	Savonlinna	Sulkava	Savonlinna sub-region
1995	0.3	0.4	0.3	0.3	0.9	0.2	0.7
2000	0.5	0.5	0.6	0.6	1.1	0.5	1.0
2010	2.0	1.4	1.6	1.4	2.3	1.4	2.1
2015	2.2	2.1	2.6	1.9	3.3	2.2	3.0

2020	3.1	3.6	2.2	3.3	3.9	3.0	3.7
2025	3.7	7.7	4.6	6.8	6.2	5.4	6.1

Taken together, the findings point to a demographic transition characterised by simultaneous population decline, ageing, and increasing diversity. While out-migration and ageing continue to weaken the demographic and labour-force base of the region, immigration is becoming an increasingly important factor contributing to demographic renewal. These developments create challenges for service provision and economic vitality but also open opportunities for attracting new residents and strengthening rural resilience.

Practical implications and recommendations

Ourense, Spain (LL)

The findings underline the need for integrated policies that address demographic challenges from multiple perspectives. Improving access to services, supporting local employment and entrepreneurship, strengthening connectivity and promoting quality of life are key elements for enhancing the resilience of rural communities.

The results also highlight the importance of adapting public policies to local realities, recognising the diversity of demographic situations across rural territories. Greater coordination between different levels of governance and stronger stakeholder participation can contribute to more effective responses.

Data and evidence should play a central role in monitoring demographic trends and supporting informed decision-making at local and regional levels.

South Savo, Finland (RL)

The findings suggest several practical implications for rural development policy and local stakeholders.

First, the growing importance of seasonal and multi-local living should be better recognised in regional and national policy. South Savo has a particularly high number of free time residences and seasonal residents whose contribution is not fully reflected in current administrative and funding arrangements. Introducing forms of dual municipal residency and associated taxation arrangements could help municipalities capture a greater share of the economic benefits generated by seasonal residents while strengthening local service provision.

Second, seasonal residents represent another resource for rural communities. Beyond their economic contribution, they bring skills, networks, entrepreneurial initiatives, and new perspectives that can support local innovation and community development. Municipalities and local organisations should therefore develop more systematic approaches to involving seasonal residents in local planning and development activities.

Third, stronger policy attention should be given to the specific challenges faced by Eastern Finland. Current infrastructure investments are often perceived to favour other parts of Finland. Further and balanced investments in transport infrastructure, digital connectivity, and public services would improve the attractiveness, accessibility, and resilience of peripheral rural regions.

Fourth, the future of the LEADER approach should be secured. LEADER funding remains one of the few accessible sources of support for micro-enterprises, community-led initiatives, and local innovation in rural areas. Long-term continuity of LEADER funding is essential for maintaining local development capacity and supporting bottom-up solutions to demographic challenges.

Fifth, demographic renewal strategies should place greater emphasis on immigration and integration. The increasing share of foreign-language speakers demonstrates that immigration is becoming an important source of population growth and labour supply even in rural municipalities. Local and regional actors should therefore strengthen measures that support the attraction, integration, and long-term retention of immigrants.

Finally, greater attention should be paid to return migration and retirement migration. Many people who were born in the area maintain strong emotional and social ties to the region. Policies and local initiatives that encourage retirees and other former residents to return could help stabilise population levels, support local services, and strengthen community life in shrinking rural areas.

► Transferability and broader relevance

Ourense, Spain (LL)

The experience of the Spanish Living Lab demonstrates that demographic change is a shared challenge across many rural regions in Europe, particularly in areas affected by ageing populations, population decline and territorial imbalances.

The combination of data analysis and stakeholder engagement proved valuable for understanding local demographic dynamics and identifying potential responses. This approach can be transferred to other rural contexts seeking to better understand demographic challenges and design evidence-based development strategies. The lessons learned highlight the importance of place-based policies, long-term planning and community involvement in addressing demographic change and strengthening the sustainability of rural territories.

South Savo, Finland (RL)

The demographic developments observed in South Savo, including population decline, ageing and youth out-migration, are common to many rural and peripheral regions in Europe, which makes the findings relevant well beyond the Finnish context. Demographic change should not, however, be read only as a challenge: immigration, return migration, retirement migration and multi-local living can all contribute to demographic renewal and local resilience.

Seasonal and multi-local residents remain an often underused resource for rural development, and it is their systematic engagement that turns their presence into local benefit. Immigration, in turn, is becoming increasingly visible even in remote rural areas, and the successful attraction, integration and retention of newcomers requires sound policies and inclusive, multi-level territorial governance.

🔗 Further information

- Galician Institute of Statistics (IGE): <https://www.ige.gal/>
- Spanish National Statistics Institute (INE): <https://www.ine.es/>
- Statistics Finland: <https://stat.fi/en>
- SavonLuotsi LEADER Local Action Group: <https://www.savonluotsi.fi/en/>
- GRANULAR project website: www.ruralgranular.eu

4.6. Tourism

Small surveys, shared indicators: a low-cost way for rural areas to understand and manage their own tourism

Contributing Labs: France (LL), Italy (LL), Spain (LL), Albania (RL), Finland (RL), Serbia (RL)

Summary for EIP-AGRI

Official statistics are usually too coarse to manage tourism in a rural area. GRANULAR tested a low-cost alternative in six rural territories: combine the statistics you already have with a small survey of visitors and local businesses, then track a few shared indicators, namely when visitors come, where they cluster, how long they stay and how much they buy locally.

In Albania, one Lab ran three short surveys (150 visitors, 22 accommodation providers, 35 producers) and built the first shared picture of its tourism: satisfaction 4.4 out of 5, nature the main motive (68%), but stays of only 1.8 nights and visitors packed into a few hotspots while many villages stayed invisible. That was enough to show municipalities and businesses where to act.

The approach worked elsewhere too. In Serbia, 175 tourists and 21 providers filled the gap left by missing local statistics. In Finland, 271 visitors and second-home data revealed a population swinging from about 2,000 to 25,000 people a month. In France, mobile phone and app data showed Argelès-sur-Mer tripling in summer, with most visitors staying in one municipality and driving. In Italy, mobility data exposed links between coastal and inland municipalities that arrival and overnight figures alone had hidden. In Spain, thermal springs across 15 rural municipalities draw visitors all year.

◆ **Recommendations:** start small, as one season of surveying is enough; agree a few indicators with neighbouring municipalities, because visitor flows cross borders; and use the results to spread visitors beyond the hotspots and link them to local producers.

🌀 Thematic context and relevance for rural areas

This theme addresses the prosperous pillar of the EU Long-Term Vision for Rural Areas and the recreational and environmental dimensions of the GRANULAR Rural Compass: it concerns tourism as a source of rural income and as a pressure on the assets that generate it.

Pays Pyrénées Méditerranée, France (LL)

Tourism is a key source of income and attractiveness for rural areas in Europe: in some regions, often coastal ones, this means seasonal organisation. This has an impact on the entire local ecosystem, particularly on transport arrangements. As one of the leading sectors for greenhouse gas emissions, travel – including that of tourists – is therefore a key issue not only for controlling greenhouse gas emissions but also for the quality of the tourist experience, particularly during the peak summer season. However, little is generally known about the travel patterns of ‘those who live within the area for a few weeks’, making it difficult to manage the organisation of transport and information services.

South Savo, Finland (RL)

The Replication Lab (RL) South Savo is located in the region of South Savo in Eastern Finland. The area and its development can be characterised as follows:

- Finland’s most forested region
- Rich in lakes and a unique lake archipelago centred around Lake Saimaa
- An ageing and shrinking population
- Strong seasonality, with a high number of second homes and free-time residences
- Ongoing challenges related to service provision, employment opportunities, accessibility, lack of educational possibilities (i.e. no universities in the area), and thus regional vitality

In South Savo, tourism is closely linked to the region’s natural resources, cultural landscapes, and local identity. The area’s forests, lakes, biodiversity, and flagship nature destinations, including Linnansaari and Kolovesi National Parks, create important opportunities for developing sustainable tourism models that support local livelihoods while maintaining environmental and social sustainability.

This theme is highly relevant for rural communities because tourism represents an important sector with growth potential in an area facing demographic decline and economic restructuring. Sustainable tourism can contribute to local employment, entrepreneurship, diversification of rural economies, and the maintenance of services and infrastructure. At the same time, tourism can strengthen place-based identity, support cultural heritage, and increase the attractiveness of rural areas for both visitors and residents.

However, the region also faces several interconnected challenges. These include strong seasonal fluctuations in tourism demand, labour shortages, limited transport accessibility, demographic ageing, and difficulties in maintaining public and private services especially in the more sparsely populated areas. At the same time, important opportunities exist through increasing demand for sustainable and nature-based tourism, growing interest in wellbeing and slow tourism, digitalisation, multi-local living linked to second homes.

Val di Cecina, Italy (LL)

Tourism is one of the main economic sectors in the Rural and Organic District of Val di Cecina. It is closely connected to other economic activities, particularly local agri-food value chains, and therefore plays a key role in shaping rural development pathways. The territory offers a diverse range of tourism experiences, including coastal, nature-based, cultural, and food and wine tourism.

Despite its importance, the sector faces several challenges. Visitor flows are strongly concentrated both in time and space. High seasonality generates significant peaks during specific periods of the year, resulting in overtourism, pressure on local services and infrastructure, and increased stress on natural resources. At the same time, tourism activities are concentrated in a limited number of locations, leading to an uneven distribution of tourism benefits across the territory and creating territorial imbalances in tourism development. Another key challenge concerns territorial connectivity, as weak integration between coastal and inland areas limits the capacity to distribute visitor flows more evenly across the district.

At the same time, tourism represents an important opportunity for sustainable rural development. Promoting tourism models that enhance the cultural and natural heritage of rural areas can help reduce pressure on the most visited destinations while supporting a more balanced distribution of tourism flows across the district. Stronger links between tourism and local agri-food systems can support local value chains, increase the visibility of local products and producers, and generate additional economic opportunities. A more balanced distribution of visitor flows could contribute to a fairer distribution of tourism-related benefits across the territory. Finally, engaging local stakeholders in discussions on tourism dynamics can strengthen collaboration, support the development of shared strategies, and reinforce the territorial identity of the Val di Cecina.

Ourense, Spain (LL)

Tourism represents an important opportunity for rural development, contributing to economic diversification, employment creation and the promotion of local heritage. In many rural areas, tourism can support local businesses, strengthen community identity and generate additional income while helping to maintain services and infrastructure.

In the Spanish context, rural tourism is increasingly linked to experiences based on nature, culture, gastronomy and wellbeing. In particular, health and wellness tourism has emerged as a growing segment, responding to increasing demand for experiences that combine leisure, health and quality of life.

The main challenge is to ensure that tourism development remains sustainable and generates benefits for local communities throughout the year. At the same time, tourism offers opportunities to enhance local assets, attract visitors and reinforce the attractiveness of rural territories.

GVV Pro Përmet, Albania (RL)

Replication Lab GVV Pro Përmet works in a rural territory where tourism has expanded quickly but remains uneven, unstructured, and highly seasonal. Visitor flows peak sharply in summer, while many months see very little activity, creating unstable income for rural households. Tourism is also concentrated in a few hotspots, leaving many villages, cultural sites, and local businesses invisible to visitors. Community based experiences exist, but they are not organised, not promoted, and rarely connected to rural SMEs. Local products and agritourism units are part of Përmet's identity, yet they are not fully integrated into the tourism offer. As a result, rural families and small businesses capture only a small share of the value generated by tourism.

A major barrier has been the absence of reliable information. Before the Lab, there was no clear understanding of who visits, where they go, how long they stay, what they spend, or how they engage with local products and experiences. Without this evidence, local actors could not plan, diversify, or coordinate their efforts.

Through GRANULAR, the Replication Lab introduced new practical tools to address these gaps, including three primary surveys: a Visitor Survey (n = 150), an Accommodation Survey (n = 22 businesses), and a Local Producer Survey (n = 35 producers), complemented by online platform analysis and a set of territorial indicators. These tools created the first shared baseline on tourism flows, seasonality, community based activities, local sourcing, and SME diversification. For the first time, municipalities, protected areas, and local businesses can rely on common data to understand how tourism works in the Përmet–Këlcyrë area.

This work is highly relevant for rural communities because sustainable, rural and community-based tourism can generate direct benefits for small guesthouses, guides, agritourism units, producers, and artisans. With the Vjosa Wild River National Park and growing demand for authentic rural experiences, the territory has strong opportunities.

The Replication Lab helps local actors turn these opportunities into concrete benefits for rural SMEs and communities.

Golija, Serbia (RL)

The tourism offer of the Golija area rests on the natural assets of the largest and most wooded protected area in southwestern Serbia, spanning the mountains of Golija, Radočelo and Čemerno between the towns of Ivanjica, Raška, Novi Pazar, Kraljevo and Sjenica.

Alongside nature, cultural heritage anchors the visitor offer: the area holds numerous cultural and historical monuments, among them the Studenica monastery, inscribed on the UNESCO World Heritage List.

In the last 20 years, along with the traditional economic activities of the local population (agriculture, forestry...), tourism based on community values and the natural values of the area, has become a significant source of income for the local population.

Living Lab / Replication Lab perspective

Pays Pyrénées Méditerranée, France (LL)

Travel is the main source of energy consumption and greenhouse gas emissions in the Pays Pyrénées Méditerranée. The issue of mobility is all the more important given the uncertainty surrounding access to energy resources. Controlling travel and shifting some of it to alternative modes of transport that are less dependent on fossil fuels are therefore environmental, social and economic challenges for the rural and tourist area of the Pays Pyrénées Méditerranée.

A number of local authorities have strategies associated with mobility transition action plans, such as the cycling plans of the Pays (currently being drawn up), the Pyrénées-Orientales department and the Occitanie Pyrénées Méditerranée region, as well as the mobility plans of local authorities and their communities. These documents provide for investment to develop infrastructure, services and awareness-raising.

The region is also characterised by seasonal and tourist activities, but these take different forms in the coastal and inland municipalities. Finally, the Pyrénées Méditerranée is a border region, which reinforces the fragmentation of mobility opportunities.

South Savo, Finland (RL)

The South Savo RL is located in the Finnish Lakeland area of Eastern Finland, primarily covering the South Savo and Savonlinna–Lake Saimaa region. The area is characterised by extensive lake landscapes, forests, rural communities, seasonal tourism flows, and a strong dependence on nature-based and cultural tourism. Lake Saimaa, Finland's largest lake system, forms the core geographical asset and identity of the region.

Key stakeholders include municipalities, regional development organisations, tourism SMEs, destination management organisations, local communities, Metsähallitus, cultural institutions, and regional research and education actors. Cooperation between tourism businesses, municipalities, and sustainability networks is particularly important in the region's tourism governance model.

The thematic focus of the Replication Lab is strongly shaped by local specificities related to sustainable and nature-based tourism. The region emphasises responsible tourism development, protection of biodiversity and cultural heritage, strengthening the Saimaa regional brand, and extending tourism beyond the summer peak season. Important local assets include Natura 2000 protected areas, the endangered Saimaa ringed seal, cultural heritage sites, lake and forest ecosystems, second-home tourism, local food traditions and the two national parks in the area.

At the same time, the area faces several structural challenges that influence the Lab's thematic orientation, including seasonality, accessibility and transport limitations, balancing tourism growth with environmental protection, and maintaining local wellbeing in sparsely populated rural areas. Sustainable Travel Finland (STF) certification processes and regional cooperation around responsible tourism development play a central role in addressing these challenges.

(Sources: Regional Council of South Savo; Saimaa Geopark; Sustainable Travel Finland materials.)

The activities of the Rural Lab focused mainly on the area covered by the LEADER Local Action Group SavonLuotsi, encompassing Juva, Joroinen, Rantasalmi, Sulkava, Enonkoski, and the rural areas of Savonlinna. SavonLuotsi was established in 2023 through a merger of LEADER organisations, yet the LEADER approach has been present in the area since 1996. The LAG also cooperates closely with the Finnish Island Association on issues related to planning, infrastructure, services, livelihoods, and the sustainable development of archipelago areas.

Val di Cecina, Italy (LL)

The GRANULAR Living Lab of the Val di Cecina is represented by the Rural and Organic District of Val di Cecina and covers a rural territory of 13 municipalities in Tuscany, Italy. The area stretches from the Tyrrhenian coast to inland rural areas and includes different landscapes, economic activities, and tourism patterns. A common feature of the territory is the Cecina River, which flows through a variety of agricultural landscapes linking coastal, plain, and hilly areas. The territory is characterised by a high level of rurality, a strong presence of organic farming, an articulated tourism system, and valuable environmental, cultural, and agri-food resources.

The Living Lab involved a range of stakeholders, including the 13 municipal administrations, tourism authorities, farmers, local businesses, associations, public institutions, and researchers.

Tourism was selected as a key theme because of its strategic importance for the local economy and its strong links with other sectors, particularly local agri-food value chains. The territory offers a wide range of tourism experiences, including coastal, nature-based, cultural, and food and wine tourism. At the same time, the coexistence of coastal and inland areas, together with strong seasonal dynamics, creates complex tourism mobility patterns that are important to understand for effective territorial planning and development.

Ourense, Spain (LL)

The Spanish Living Lab focuses on the province of Ourense, a predominantly rural territory known for its rich thermal heritage, natural landscapes and cultural resources. The area hosts a wide network of thermal springs, spa facilities and wellness-related services, which represent an important component of the local economy and territorial identity.

The Living Lab brought together local authorities, tourism stakeholders, businesses, researchers, rural development organisations and community representatives to explore the role of tourism in supporting rural development and territorial attractiveness.

Particular attention was given to thermal and wellness tourism as a strategic asset with the potential to contribute to economic activity, employment generation and the promotion of rural areas beyond traditional tourism models.

GVV Pro Përmet, Albania (RL)

Replication Lab GVV Pro Përmet operates in the Përmet–Këlcyrë territory in southeastern Albania, a 929 km² rural and mountainous area shaped by the Vjosa River, scattered villages, and a strong cultural and gastronomic identity.

The Lab brings together a wide range of local actors: small guesthouses and family hotels, agritourism units, guides, adventure operators, producers and farmers, artisans, municipalities, protected area authorities (AKZM and ZAPK Vjosa), cultural organisations, and community groups. This reflects the structure of the local economy, where rural SMEs form the backbone of tourism and community based experiences.

GVV Pro Përmet, functioning as a Local Action Group, coordinates this network and provides a shared platform for collaboration. Its membership mirrors the territory's economic fabric and makes it well positioned to connect tourism, local production, and community initiatives. The geographical context—mountainous terrain, dispersed settlements, and strong dependence on nature based tourism—directly shapes the Lab's priorities.

These local specificities led the Lab to focus on four key dimensions, which emerged clearly from the territorial diagnosis:

- Creative Tourism – because the territory has rich cultural assets, traditions, and community based experiences that are not yet organised or promoted.
- Seasonality & Multilocality – because tourism is highly seasonal and concentrated in a few hotspots, while many villages remain invisible to visitors.
- Foodscapes – because local products, gastronomy, and agritourism are central to the identity of Përmet but not fully integrated into the tourism offer.

- Diversified Economies – because rural SMEs need more stable, year round opportunities beyond peak season tourism.

These dimensions reflect the real challenges and opportunities of the Përmet–Këlcyrë area and guide the Lab's work on strengthening sustainable, rural and community based tourism as a driver of local development.

Golija, Serbia (RL)

In its tourism work, the Replication Lab brings together the five local governments of the area, chiefly the municipalities of Ivanjica and Kraljevo, within a territory part of which is protected as a UNESCO Biosphere Reserve.

Tourism in Golija takes place in a distinctly rural, sparsely populated area marked by depopulation and an ageing population, where farming and forestry remain the traditional mainstays. In the last 20 years, tourism has experienced significant development. The tourist offer is almost entirely based on rural tourism carried out by local residents, while a ski centre is being developed at the location of Odvračenica, with ambitions for a large number of ski slopes and visitors and a currently unclear environmental impact.

In this work the Lab cooperates with local self-government representatives, tourist organisations, local associations, residents and the business sector across the area, with national actors involved according to their responsibilities.

Key findings and data insights

Pays Pyrénées Méditerranée, France (LL)

The living lab drew on a combination of several data sources to gain a clearer picture of tourists' travel patterns and their impact on the area. This was achieved primarily by collecting various existing datasets, both open-access and proprietary, such as accommodation capacity and road traffic counts. The living lab's work also made it possible to release mobile phone geolocation data produced by a local expert for tourist offices. Collaboration with the Universities of Southampton and Milan as part of the GRANULAR project enabled the collection and analysis of location data from the Meta and TripAdvisor apps, allowing for a better understanding of the seasonality of travel. Finally, with the project's support, the living lab conducted a quantitative survey of tourists on the Côte Vermeille in the summer of 2025. This research project provided an opportunity for local stakeholders to develop their skills in using these observation tools. An ad hoc working group bringing together local stakeholders from the mobility and tourism sectors supported the living lab's activities.

Combining these data sources has made it possible to:

- Confirm and clarify the strong seasonality of the living lab's area, particularly along the coast. The population in the municipality of Argelès-sur-Mer in July and August is three times the annual average. The peak periods and the origins of tourists were also clarified, highlighting in particular the importance of the May bank holiday weekend and tourists from major regional cities such as Toulouse.
- The limited geographical reach of the majority of tourists: when staying in Argelès-sur-Mer, the vast majority remain within the municipality for their activities - whereas some local stakeholders would like to develop links with the hinterland. The most common pattern is a day trip (going and return).
- The car is the predominant mode of transport for tourists' journeys during their stay. However, certain local destinations and certain visitor profiles are more likely to use bicycles or public transport. This is the case, for example, for journeys to the Côte Rochoise. The car is the preferred choice for reaching destinations such as the Junquera shopping centre on the border or the upper valley.
- Information provided to tourists during their stay regarding transport options is limited, and sources of information remain scattered.

South Savo, Finland (RL)

The evidence for South Savo combines the Lab's own data collection, with mobility datasets analysed by GRANULAR partners.

Data collected and analysed by the Lab:

- South Savo Visitor Survey conducted in 2025 as part of the GRANULAR project, in cooperation with local stakeholders. The survey was open from 8 July to 31 August 2025. A total of 271 responses were collected (online and on-site). Report available at https://www.ruralgranular.eu/wp-content/uploads/2026/02/GRANULAR-South-Savo-Tourism-Survey-2025_v2.pdf
- Free time residences distribution / Number of free-time residences in the member municipalities of the LEADER LAG Savon Luotsi (2010, 2015, 2020, 2024) by Statistics FIN.
- Seasonal population changes / number of free time residents coming from outside the area per month / nights spent in the free time residence - data from the 2021 Finnish Free-Time Residence Barometer.
- Average number of free time residence nights / seasonal population per month in 2020 - based on Mökkibarometri 2021 + own calculations.

Main findings from survey and free time residences data

The South Savo Tourism Survey 2025 (n = 271) reveals that the region's tourism appeal is strongly based on the combination of culture, nature, lake landscapes, and local food experiences. The most common motivations for visiting were cultural attractions (65%), nature experiences (58%), local food and drink (42%), and water-based activities (38%). Tourism demand relies heavily on domestic visitors, particularly from the Uusimaa region, and a large share of respondents are repeat visitors or second-home owners, indicating strong long-term attachment to the region.

Visitor satisfaction is high, especially regarding cultural events, recreational opportunities, restaurants, and environmental quality. The destination achieved a Net Promoter Score (NPS) of 51, demonstrating a strong willingness among visitors to recommend South Savo to others.

The survey also identified several development challenges. Accessibility remains heavily dependent on private car use, while public transport and mobility options for car-free visitors are limited. Respondents highlighted the need to improve transport connections, extend restaurant opening hours, strengthen off-season tourism, improve multilingual information, and attract younger visitor groups. Visitors demonstrate considerable awareness of sustainable tourism and frequently engage in actions that support local businesses, communities, and local food systems. The findings indicate additional opportunities to encourage participation in sustainable mobility and nature-based sustainability activities through improved services, infrastructure, and information.

The data on second-home development in the study area reveal the significant role of second-home residents in South Savo and that second-home residents are an important component of rural vitality in South Savo, generating substantial seasonal population flows that support local economies and tourism development. Free-time residences remain an important feature of the rural economy and settlement structure. Between 2010 and 2024, the total number of free-time residences increased by around 5%, although recent trends vary between municipalities. While some municipalities, such as Savonlinna, have experienced long-term growth, others show a slight decline in recent years. The number of non-local free-time residents fluctuates strongly throughout the year, ranging from around 2,000 to 25,000 people per month. Seasonal peaks occur during the summer months, but the most active second-home owners visit throughout the year. The findings underline the significant role of second-home residents in shaping rural vitality, service demand, and tourism-related development in the region.

Data collected and analysed with GRANULAR partners (University of Southampton and University of Milan)

Activity Space datasets from Meta were analysed to trace mobility flows between South Savo and the rest of Finland, including the five largest cities (Helsinki, Espoo, Vantaa, Tampere and Turku), using time-series plots, connectivity maps and dynamic rasters covering the period from July 2024 to January 2026.

The analysis of the Activity Space (AS) mobility datasets shows how the RL area is connected to the rest of Finland through seasonal (and long-term) mobility patterns, particularly in relation to the major urban centres of Helsinki, Espoo, Vantaa, Tampere, and Turku. The data help identify patterns of tourism, second-home mobility, and regional interaction by showing when, from where, and to which parts of South Savo people travel, thereby highlighting seasonal peaks, regional dependencies, and differences between municipalities within the RL area.

Val di Cecina, Italy (LL)

Data collected and analysed by the Living Lab

The Living Lab collected qualitative and quantitative information on tourism dynamics in the Val di Cecina. First, an online survey was conducted between 2024 and 2025 among local accommodation facilities and agritourism businesses to gather qualitative insights on tourism trends, challenges, and opportunities in the territory. Existing tourism data were also collected from ISTAT (Italian National Institute of Statistics) and the three local Tourism Authorities (Ambiti Turistici), including indicators such as tourist arrivals, overnight stays, average length of stay, visitors' origins, and the relative contribution of coastal and inland tourism to overall tourism flows.

Data collected and analysed with GRANULAR partners

The Living Lab collaborated with GRANULAR WP3 partners to analyse innovative mobility datasets, including Meta Activity Space data. These datasets were used to explore tourism mobility patterns across the territory through time-series analyses, connectivity maps, and spatial visualisations. The analyses focused on understanding how visitor flows are distributed across the district, how they change throughout the year, and how different municipalities are connected through tourism-related movements.

Main findings

The first analysis confirmed that tourism in the Val di Cecina is a highly dynamic phenomenon characterised by strong seasonal and spatial variations. Traditional tourism statistics highlighted significant fluctuations in visitor numbers throughout the year and provided valuable information on the origins and characteristics of tourism demand. The data also confirmed the importance of both coastal and inland tourism within the district, highlighting the diversity of tourism experiences available across the territory.

The mobility datasets complemented these analyses by offering a more detailed and dynamic understanding of how visitors move across the territory. The data revealed patterns of connectivity between municipalities and provided new insights into the relationships between coastal and inland areas.

A key finding of the Living Lab was the added value of combining traditional tourism statistics, innovative mobility datasets, and local stakeholder knowledge. While tourism statistics provided information on the scale and characteristics of tourism demand, mobility data helped reveal movement patterns and territorial connections that are not captured by arrivals and overnight stays alone. The comparison between quantitative evidence and local knowledge also supported the interpretation and validation of the results.

The findings demonstrate the potential of mobility data to support a more detailed understanding of tourism dynamics in rural areas and provide valuable evidence for territorial planning, destination management, and tourism governance.

Ourense, Spain (LL)

The analyses highlighted the importance of tourism as a driver of rural attractiveness and local economic activity. The results showed that thermal and wellness resources represent a distinctive territorial asset capable of attracting visitors throughout the year and reducing seasonal fluctuations commonly associated with other tourism segments.

The data also revealed the strong relationship between tourism, local services, cultural heritage and environmental resources. Stakeholders emphasised that visitors increasingly value authentic experiences, wellbeing, nature and local identity when choosing destinations.

The combination of available tourism indicators, local knowledge and stakeholder discussions provided valuable insights into the opportunities and challenges associated with strengthening tourism as a tool for sustainable rural development.

Thermal and wellness tourism represents one of the most distinctive components of Ourense's tourism offer. The official tourism website of Ourense City Council currently identifies eight principal thermal resources in the city: Outariz, Burga de Canedo, Muíño da Veiga, the public bathing area of A Chavasqueira, Termas de Outariz, Termas de A Chavasqueira, the thermal pool of As Burgas and the O Tinteiro thermal fountain (Ourense City Council, Tourism Department: <https://www.ourense.gal/turismo/termalismo/termas-de-ourense/>).

These resources are concentrated mainly in the historic As Burgas area and along the Miño Thermal Route.

According to the official Tourism Agency of Galicia, this route extends for approximately three kilometres along the right bank of the River Miño and includes four principal thermal stations. The water emerges at approximately 41°C at A Chavasqueira and 43°C at O Tinteiro (Turismo de Galicia: https://www.turismo.gal/que-visitar/cidades/ourense?langId=es_ES).

In the historic centre, the As Burgas springs constitute one of the city's most important thermal and cultural landmarks. Their mineral-rich waters emerge at approximately 67°C and have played an important role in the development of human settlement in the city since Roman times (Turismo de Galicia: https://www.turismo.gal/que-visitar/cidades/ourense?langId=en_US).

The thermal tourism system extends beyond the city of Ourense. The Ourense Thermal Tourism Sustainability Plan covers 15 rural municipalities with thermal resources: A Arnoia, Bande, Boborás, Baños de Molgas, Cortegada, Cenlle, Castrelo de Miño, O Carballiño, Leiro, Lobios, Monterrei, Muíños, Punxín, Ribadavia and Verín. The plan is managed by the Provincial Council of Ourense in cooperation with the Galician Tourism Agency and the Spanish State Secretariat for Tourism (OUTERMAL–Provincial Council of Ourense: <https://outermal.depourense.es/entidades-publicas-y-privadas-analizan-en-una-mesa-de-trabajo-las-oportunidades-de-negocio-vinculadas-al-turismo-termal-en-ourense/>).

The inclusion of these 15 municipalities demonstrates that thermalism is not exclusively an urban attraction but a province-wide territorial resource. The Ourense Thermal programme explicitly seeks to improve the competitiveness of these rural thermal destinations and to harmonise the different thermal tourism models operating across the province (OUTERMAL–Provincial Council of Ourense: <https://outermal.depourense.es/>).

General tourism demand can be contextualised using the Hotel Occupancy Survey produced by the Spanish National Statistics Institute. The survey provides monthly data on travellers and overnight stays in hotel establishments in the province of Ourense, distinguishing between residents in Spain and visitors residing abroad. These figures measure overall hotel demand and should not be interpreted as exclusively attributable to thermal tourism (Spanish National Statistics Institute, table 2074: <https://ine.es/jaxiT3/Tabla.htm?t=2074>).

The INE survey also provides information on the estimated number of open establishments, available bed places, occupancy rates and employment in hotel establishments. However, these employment figures cover the hotel sector as a whole and do not isolate employment generated specifically by thermal tourism or spa establishments (Spanish National Statistics Institute, Hotel Occupancy Survey methodology and latest data: https://ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177015&idp=1254735576863&menu=ultiDatos).

Therefore, the available evidence confirms that Ourense possesses a dense and territorially extensive thermal tourism offer, including at least eight principal thermal resources in the city, a three-kilometre urban thermal route with four main thermal stations, and a provincial thermal tourism programme covering 15 rural municipalities. Nevertheless, more detailed monitoring would be required to quantify the number of thermal tourists, their overnight stays, expenditure and employment generated specifically by thermal and wellness tourism.

Gvv Pro Përmet, Albania (RL)

The Replication Lab produced the first clear evidence on how tourism functions in the Përmet–Këlcyrë area. Through visitor, business, and producer survey (n=150), combined with online platform analysis and simple territorial indicators, the Lab created new datasets that reveal the real dynamics of tourism and its links with rural SMEs.

The data shows that tourism is highly seasonal, with strong peaks in July–August and very low activity in winter.

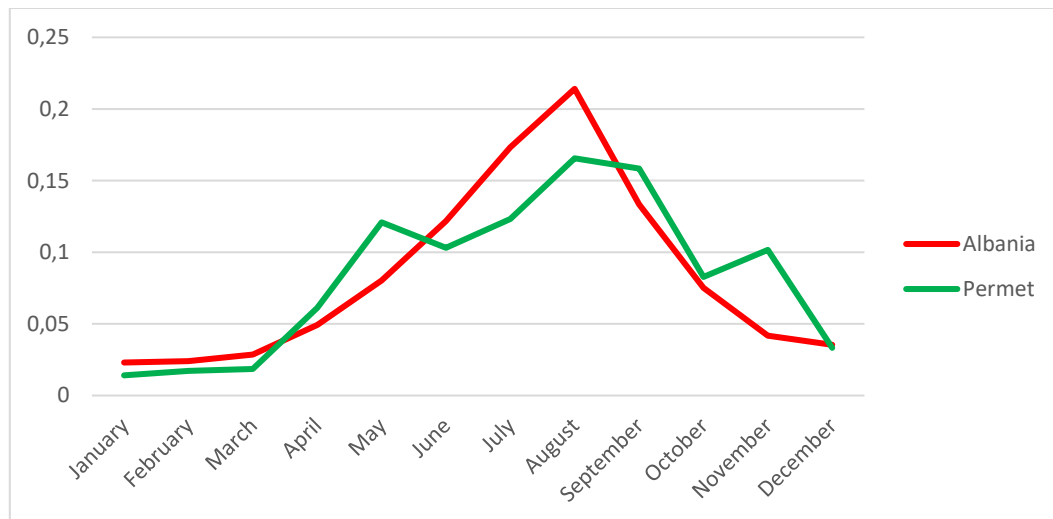


Figure 19: Monthly visitor frequency distribution, 2025. Source: own elaboration by the GVV Pro Përmet Replication Lab, based on INSTAT and Municipality of Përmet data.

Visitor flows are also concentrated in a few hotspots such as Bënjë, Lengarica, and Përmet town, while many villages and cultural assets remain almost invisible. Visitors stay on average only 1.8 nights but already visit 3.1 locations per trip, indicating interest in exploring the wider territory despite the concentration of tourism activity. This uneven distribution limits the potential for year-round income and rural revitalisation.

Despite these challenges, the findings highlight strong opportunities. Visitors report very high satisfaction, with an overall satisfaction score of 4.4/5. Nature is the main motivation for travel (68%), followed by gastronomy (41%). Thirty-nine percent of visitors participate in gastronomy experiences, while 14% engage in community-based tourism activities, confirming the potential for experiences linked to culture, gastronomy, and rural life. However, these activities are rarely organised or promoted, and many SMEs lack digital visibility.

Table 5: Key findings from the visitor survey. Source: GVV Pro Përmet Replication Lab.

Indicator	Value
Average length of stay	1.8 nights
Average daily spending	€79 per day
Average daily spending on gastronomy	€28 per day
Participation in gastronomy experiences	39%
Participation in Community-Based Tourism (CBT) activities	14%
Average number of locations visited	3.1 per trip
Overall satisfaction	4.4 / 5
Top motivations	Nature (68%), Food (41%), Relaxation (37%)

The Lab also documented weak but growing connections between tourism and local production. Many restaurants and accommodations use some local products, but sourcing remains inconsistent, and producers have limited access to tourism markets. The accommodation survey found that 68% of providers serve breakfasts featuring local products and 74% regularly recommend local restaurants to their guests, while only 21% refer visitors to structured experiences such as tastings, producer visits, or workshops. At the same time, several SMEs have started diversifying their offer with tastings, workshops, tours, and product sales.

To support monitoring, the Lab developed a set of new territorial indicators on visitor satisfaction, seasonality, spatial concentration, SME diversification, local sourcing, and producer engagement in tourism. These indicators form the first shared baseline for municipalities, protected areas, and local businesses, helping them understand where action is needed to strengthen sustainable, rural and community-based tourism.

Golija, Serbia (RL)

Data collected and analysed by the Replication Lab

During 2025 and 2026, Replication Lab collected available statistical data from the Republic Institute of Statistics, tourist organisations operating in the territories of 5 municipalities, as well as available data from entities relevant to the sustainable development of tourism in Nature Park "Golija".

In cooperation with tourist farms that deal with rural tourism and local catering facilities, a survey was conducted that included 175 tourists who stayed in Golija and 21 service providers in rural tourism.

Statistical data included the collection of data on the number of tourists, the number of overnight stays, the average length of stay, the origin of tourists and the estimation of income from tourism.

The conducted research with tourists and service providers in rural tourism is through a set of questions about the existing offer and development directions of Creative tourism, the possibilities of Diversification economies and the correlation of Natural capital stock and rural tourism.

The collected data were analysed and then presented and checked during a workshop that was realized with different actors.

Data collected and analysed with GRANULAR partners

The Replication Lab has access to supporting activities of the GRANULAR partners. The analyses focused on the analysis of the possibility of diversification of the economy through the development of creative tourism and its interaction with Natural capital stock.

Main findings

Thanks to the analyses, key findings were defined:

- Tourists highlighted the natural capital stock of the area, as well as human capital and specific local knowledge (gastronomy, gathering forest fruits...) as the key tourist value of Nature Park Golija. In addition to the clearly identified values, the tourists emphasized the need for further development of creative tourism, which will enable an additional experience for tourists and enrich the local tourist offer;
- Existence of clearly expressed seasonality of tourist demand, in such a way that it is intense during summer, winter and holiday periods, with a significantly smaller share of demand during spring and autumn;
- An additional impact of tourism on nature has been identified, because due to underdeveloped communal services (waste removal, lack of sewage network, use of cars as the dominant means of transport...) additional pressure is created on the environment;
- Rural tourism is of great importance for the diversification of the economic activities of the local population, as well as for the reduction of negative demographic trends in the area;
- Tourists recognize the lack of additional content, primarily caused by the weak connection between tourist sites and local actors that are part of the tourist offer, as well as weak promotion of these content to visitors;

The need for better management of the tourist destination, which would enable the diversification of the local economy through the development of creative tourism based on Natural capital stock.

Practical implications and recommendations

Pays Pyrénées Méditerranée, France (LL)

The GRANULAR research project has demonstrated the value of working collectively to analyse combined data sources: this provides more accurate and verified information.

The results have informed the audit for the Green Destination certification and are encouraging local authorities to take action to promote more accessible and sustainable mobility. The collaboration between local and regional stakeholders in mobility and tourism, initiated as part of the living lab, is continuing.

The living lab and its partners have drawn up initial recommendations to improve mobility for visiting tourists, such as facilitating access to information on all mobility solutions (particularly at tourist accommodation), developing a long-term bike hire service, training tourist site managers on mobility issues, developing car-free tourism options, and making it easier to walk between all neighbourhoods in the municipality of Argelès-sur-Mer...

South Savo, Finland (RL)

The findings suggest several themes for further discussions, which may include municipalities / policymakers, tourism businesses, and regional development organisations.

The tourism survey and second-home data both point to opportunities for strengthening year-round tourism and rural vitality. While tourism demand is concentrated in the summer season, the presence of a large second-home population and regular repeat visitors creates potential for extending tourism activities beyond peak periods through off-season events, and extended opening hours.

Respondents emphasised the importance of combining South Savo's strengths in culture, nature, lake-based tourism, and second-home living while improving communication, multilingual information, and destination visibility. Sustainable tourism also presents further development potential.

Improving accessibility and mobility emerged as a key priority in the survey, particularly for visitors and second-home residents travelling without a private car. Better transport connections, integrated mobility services, and improved signage could enhance access to tourism destinations, recreational areas, and local services.

Finally, the results underline the importance of entrepreneurship, collaboration, and coordinated destination development. Both regular visitors and second-home residents contribute to local service demand and rural economies, and stakeholders may wish to explore joint approaches to marketing, service development, visitor and second-home owner engagement to strengthen the resilience of rural tourism in the SavonLuotsi area.

Val di Cecina, Italy (LL)

The Living Lab demonstrated how combining traditional tourism statistics, mobility data, and local knowledge can provide a more complete understanding of tourism dynamics in the Val di Cecina.

One practical implication is the need to monitor tourism flows beyond conventional indicators such as arrivals and overnight stays. Innovative mobility datasets can help local stakeholders better understand how visitors move across the territory, identify seasonal peaks, and analyse connections between municipalities.

The results also highlight the importance of strengthening collaboration between municipalities, tourism authorities, and local actors. Since tourism flows extend beyond administrative boundaries, a shared understanding of territorial dynamics can support more coordinated planning and management strategies.

Finally, the analyses can support actions aimed at addressing the strong temporal and spatial concentration of tourism flows. A better understanding of when and where visitors concentrate may help stakeholders design targeted initiatives, improve service planning, and promote a more balanced distribution of tourism activities across the district.

Ourense, Spain (LL)

The findings suggest that rural tourism strategies should build upon local assets and distinctive territorial characteristics. In the case of Ourense, thermal resources provide a strong foundation for developing integrated tourism experiences linked to wellbeing, culture, gastronomy and nature.

Strengthening collaboration between tourism operators, local authorities and community organisations can support more coordinated tourism development and improve visitor experiences. Enhancing accessibility, digital promotion and the visibility of local attractions can further contribute to increasing tourism demand.

The results also highlight the importance of promoting sustainable tourism models that generate economic benefits while preserving environmental and cultural resources.

GVV Pro Përmet, Albania (RL)

The findings from the Replication Lab show that rural tourism in Përmet–Këlcyrë can improve significantly when local actors share basic data and coordinate their efforts. Several practical implications emerge for rural stakeholders:

- Use the new indicators to guide decisions.

The indicators on seasonality, visitor flows, SME diversification, local sourcing, and community-based activities give municipalities, protected areas, and businesses a clearer picture of where action is needed. These should be used to prioritise investments, improve visitor management, and identify under-served villages.

- Strengthen coordination among local actors.

The data confirms that tourism remains fragmented. Regular coordination between municipalities, ZAPK Vjosa, SMEs, and cultural actors can help align activities, avoid duplication, and build a more coherent tourism offer.

- Support rural SMEs to diversify and gain visibility.

Findings show strong visitor interest in local food, culture, and community-based experiences. Helping SMEs package experiences, improve digital visibility, and connect with producers can expand the offer and reduce seasonality.

- Promote lesser-known villages and assets.

Spatial data highlights clear hotspots and large areas with almost no visitors. Targeted promotion, signage, and small-scale infrastructure can help distribute benefits more evenly across the territory.

- Integrate local products into the tourism offer.

Restaurants, accommodations, and agritourism units can use the findings on local sourcing to strengthen links with producers and create more authentic food experiences.

At national and EU level, the Përmet experience shows that simple data tools and a bottom-up coordination structure can help rural territories move toward more organised and sustainable tourism development, even where institutional capacity is limited.

Golija, Serbia (RL)

The Replication Lab made it possible to implement the policy proposal for the development of sustainable tourism through cross-sectoral cooperation, using available statistical data and consultations with actors who directly affect the tourist offer (tourists, tourism service providers). The process showed that there is a lack of statistical data at the micro level, so alternative approaches enabled adequate assessments of the situation (interviews, analyses and projections of data based on existing data).

The process itself made it possible to identify the needs of tourists and the existing natural capital stock based on the results of the survey, to propose steps in the development of Creative tourism that will enable the diversification of the income of local actors, and thus the diversification of the local economy.

When it comes to the development of tourism in the protected area, the approach itself made it possible to use the experiences of other Living Labs and Replication Labs, as well as the methodology and tools developed in the GRANULAR project, to adequately consider solutions for the development of sustainable tourism in accordance with protection regimes and the use of good practices in risk planning that the increased volume of tourist activities brings (municipal waste, risk of forest fires, impact on the habitats of plant and animal species...).

► Transferability and broader relevance

Pays Pyrénées Méditerranée, France (LL)

Tourism is a major issue for rural areas in Europe. The influx of visitors during the summer months in certain areas – often coastal ones – has a significant impact on how these areas function. The exchange with other European regions facing the same challenges has been very fruitful and could be further developed.

Collaboration between mobility and tourism stakeholders at the local level in rural areas is an effective approach: it enables improvements to mobility solutions and user information. The living lab plans to organise a hackathon to transform this data into local mobility solutions.

Big data sources are useful – even in rural areas – particularly for assessing population numbers throughout the year and adapting public policies accordingly. However, access to these datasets remains limited for local stakeholders in rural areas due to their cost, the skills required to process them, and the lack of support to truly understand the insights they provide.

South Savo, Finland (RL)

The experience from South Savo highlights some lessons that may be relevant for other rural areas in Europe. First, second-home owners and repeat visitors can represent an important but often under-recognised resource for rural development, contributing to local economies, community vitality but also higher service demand. The findings highlight a challenge shared by many rural regions in Europe: seasonal residents make substantial use of local infrastructure and services, yet municipal governance and taxation systems are generally designed around permanent residence. Future policy discussions could therefore explore mechanisms such as dual municipal residency or revised local tax arrangements to better align public resources with actual patterns of residence and service use. Second, many rural regions face similar challenges related to seasonality, accessibility, and dependence on private cars, particularly in areas with dispersed settlements and attractive natural environments.

Overall, seasonal living should be given more emphasis – as it brings many new possibilities, including new entrepreneurs, new ways of thinking, and new ideas for local communities.

Val di Cecina, Italy (LL)

The experience of the Val di Cecina highlights that tourism in rural areas is often more complex than suggested by conventional tourism statistics alone. The analyses also showed the importance of considering tourism as a territorial system rather than as a collection of individual destinations. Understanding how visitors move across different areas can help identify connections, complementarities, and shared challenges.

Ourense, Spain (LL)

The experience of the Spanish Living Lab demonstrates how unique territorial resources can be used to strengthen rural development and attractiveness. While thermal tourism is particularly relevant in Ourense, the broader lesson is that rural areas can build competitive tourism strategies by capitalising on their distinctive natural, cultural and social assets.

Many rural regions across Europe possess underutilised resources with the potential to support sustainable tourism development. Combining local knowledge, stakeholder participation and evidence-based planning can help identify these assets and develop strategies adapted to local realities.

The findings highlight the potential of tourism not only as an economic activity but also as a tool for enhancing territorial identity, community resilience and long-term rural sustainability.

GVV Pro Përmet, Albania (RL)

The experience of the Replication Lab GVV Pro Përmet shows that in rural areas where public institutions have limited capacity and no clear tourism strategy, a bottom-up structure led by local SMEs can effectively coordinate actors and drive practical improvements. As a business-driven association, GVV Pro Përmet was able to mobilise stakeholders, organise data collection, and create a shared understanding of tourism dynamics, something that had not been achieved through municipal structures.

This approach is relevant for many rural regions in Europe facing similar conditions: fragmented actors, passive institutions, and no common direction for tourism development. A locally rooted organisation with direct interest in improving the tourism offer can help bring stakeholders together and initiate coordinated action.

The new indicators and data tools developed in Përmet, on seasonality, visitor flows, SME diversification, local sourcing, and community-based activities, provide a practical model that other rural territories can adapt. These tools help create a first evidence base, support decision-making, and make it easier for local actors to move from isolated initiatives toward a more coherent and sustainable tourism model.

Golija, Serbia (RL)

Other areas can follow Golija's route to a tourism offer built on natural and cultural heritage: participatory planning with local governments and tourism providers, analysis of existing data, and development kept within the limits set by the area's protection regime.

Across the six Labs the data mixes differ, from visitor surveys and platform data to mobile phone mobility datasets and thermal tourism statistics, but the analytical angle is shared: measure when visitors come, where they cluster and how much of what they spend stays locally, at a resolution fine enough to act on. It is that resolution which turns tourism from a sectoral description into territorial evidence, capable of informing bus timetables, waste infrastructure and the promotion of villages that visitors currently bypass.

Further information

- South Savo Visitor Survey 2025, full report: https://www.ruralgranular.eu/wp-content/uploads/2026/02/GRANULAR-South-Savo-Tourism-Survey-2025_v2.pdf
- GRANULAR Living Lab Italy, Distretto Rurale della Val di Cecina: https://www.ruralgranular.eu/living_lab/living-lab-italy-distretto-rurale-val-di-cecina/
- GRANULAR project website: www.ruralgranular.eu

4.7. Agri-food

Islands of innovation: why short food supply chains need cooperation, not just infrastructure

Contributing Labs: France (LL), Italy (LL), Poland (LL), Italy (RL), Romania (RL)

Summary for EIP-AGRI

Small farms are the backbone of local food systems, yet they mostly sell alone. GRANULAR studied short food supply chains in five rural territories and found that the main barrier is not farm size or a lack of ideas, but the missing habit of working together.

In Poland, a survey of 600 local food producers showed businesses that are stable, deeply rooted and selling within very short distances. They innovate and sell online, but individually, without a joint offer, joint marketing or shared investment. The Lab called these islands of innovation, caused by low trust and little experience of cooperating.

Romania shows the same structure from another angle: 94% of farms in Iași County work less than 5 ha. Such fragmentation limits investment, yet it is exactly the base of local food circuits, and organic farming there has passed 21,000 ha with 287 certified operators. Producer fairs and an online platform proved the easiest entry point for farmers new to direct selling.

In Italy, one Lab found local production and local consumption poorly connected, with no data on local demand, so it measured demand directly in school canteens across 13 municipalities. The other one recognised official production statistics too outdated to use and discussed them with producers in a workshop.

◆ **Recommendations:** fund cooperation, not only infrastructure, through shared collection points, joint offers and local online sales; use fairs and platforms to bring new producers in; measure local demand, not only supply; and verify official farm data with producers before relying on it.

Thematic context and relevance for rural areas

This theme addresses the prosperous pillar of the EU Long-Term Vision for Rural Areas and the productive dimension of the GRANULAR Rural Compass: it concerns how much of the value of local food production remains in the territory that produces it.

Organic District of Terre Apuane, Italy (RL)

The Replication Lab, as the Organic District, decide to go in depth in the Local supply chain (foodscape) with focus on the organic production as a lever to spread organic farming throughout the province. One element that clearly emerged concerns the strong differentiation between the territory of the Municipality of Massa and that of Lunigiana, two contexts that present distinct characteristics, dynamics, and needs. However, the interest in encouraging the consumption of sustainable products and the participation of new farms, including close municipalities, is crucial for supporting and activating the local production and for taking care of the territory.

Pays Pyrénées Méditerranée, France (LL)

GRANULAR focuses on the entire food chain: from production to consumption. Indeed, Europe's rural areas face numerous challenges against a backdrop of shrinking farmland and climate change, which is making production more uncertain. The year-on-year decline in the number of farmers and agricultural practices that undermine local biodiversity are compounded by the issue of food insecurity, in areas where everything is interconnected. The complexity of local food systems makes it difficult to assess them with sufficiently granularity to enable action to be taken. The challenge is therefore to equip local stakeholders with the tools to inform their decision-making and enable them to take action on the levers over which they have control, such as land use, the agroecological transition or consumption habits.

Iași, Romania (RL)

Short agri-food supply chains (SFSC) represent a model of food production and distribution characterised by a reduced number of intermediaries between producers and consumers, fostering closer economic, social, and geographical connections within local food systems. In the context of rural development, SFSC are increasingly recognized as a strategic tool for strengthening territorial resilience, supporting small-scale farmers, and promoting sustainable food systems — all of which are central priorities of contemporary European agricultural and rural policy.

The relevance of SFSC for rural areas is multi-dimensional. From an economic perspective, shortening the supply chain allows producers to capture a greater share of the added value of their products, improving farm income and financial viability — particularly critical for smallholders who often struggle to compete in conventional commodity markets. From a social standpoint, SFSC rebuild trust and transparency between producers and consumers, reinforcing a sense of local identity and food culture. They also contribute to rural community cohesion by creating shared spaces — physical and digital — where producers, consumers, and local institutions interact and cooperate. From an environmental perspective, reduced transportation distances and the frequent association of SFSC with organic, traditional, or low-input production methods contribute to lower carbon footprints and more sustainable land management practices.

For rural communities specifically, SFSC matter because they offer a viable pathway for small and medium-sized farms to remain economically active and socially embedded in their territories. In regions characterised by agricultural fragmentation and rural depopulation — such as many areas across Central and Eastern Europe — SFSC can serve as an anchor, helping to retain population, stimulate local entrepreneurship, and diversify rural economies beyond primary production.

In the specific rural context of Iași County, the development of SFSC faces a distinct set of structural challenges.

- The weak organisation of small producers into functional associative structures significantly limits their collective bargaining power, market access, and capacity to engage consistently in direct sales channels. This is compounded by insufficient collaboration between producers themselves and the absence of effective coagulant vectors — intermediary actors or mechanisms capable of connecting and mobilizing dispersed smallholders into coherent, productive networks;
- The lack of data regarding the structure and size of offer of local food producers and their territorial distribution significantly impacts the functionality of the SFSC because demand and supply do not have a common place to meet;
- A further challenge lies in building and sustaining consumer trust in local producers, which remains fragile in contexts where product traceability, quality assurance, and producer visibility are not yet systematically established.

At the same time, the local context presents a number of concrete and growing opportunities.

- The active involvement of academic and university institutions in supporting small producers — through research, advisory services, and collaborative projects — represents a distinctive and valuable asset of the Iași rural ecosystem.
- The demonstrated openness of local authorities, including Iași City Hall and Iași County Council, to actively promote local producers and their products provides an important institutional enabling environment.
- Consumer demand for certified organic agri-food products is also increasing, reflecting broader societal shifts towards health-conscious and environmentally aware food choices. Crucially, this growing demand is being met by an expanding supply: the number of certified organic agri-food producers in Iași County is rising, and importantly, this growth extends beyond raw material producers to include processors and value-added product manufacturers — a development that significantly strengthens the depth and competitiveness of local short supply chains.

Addressing these challenges and leveraging these opportunities is precisely what the Granular project — and the RL Iași in particular — aims to contribute to through evidence-based, practice-oriented research and stakeholder engagement.

Val di Cecina, Italy (LL)

Agri-food systems are a key component of the economy and identity of the Rural and Organic District of Val di Cecina. Agriculture plays an important role in the territory, which is characterised by a strong presence of organic farming and a wide range of high quality local products. Beyond their economic value, agri-food systems contribute to landscape management, cultural heritage, and the vitality of rural communities.

However, rural areas face several challenges. Connections between production, processing, and consumption have gradually weakened, making it more difficult to retain value within the territory and strengthen local food systems. At the same time, many rural areas are experiencing the abandonment of agricultural land and a lack of generational renewal in the farming sector. At the same time, the territory offers opportunities for strengthening local agri-food systems. The Val di Cecina is characterised by a rich agricultural heritage and a strong presence of organic farming: these resources provide a strong basis for creating greater value within the territory and supporting rural development. The presence of the Rural and Organic District also creates opportunities for collaboration among farmers, institutions, businesses, and local communities (StoryMap on local agri-food value chains and the role of the Rural District as a governance tool).

West Pomerania, Poland (LL)

Short food supply chains are a key element of contemporary local food systems. Their essence is to reduce the number of intermediaries between producers and consumers, enabling farmers to obtain greater added value and consumers to access fresher, more sustainable, and more transparent food. In rural areas, where agriculture is the backbone of the economy and access to markets can be limited, short supply chains serve as a tool for strengthening local resilience, entrepreneurship, and social cohesion. They enable small and medium-sized farms to better position themselves in the market, increase their independence from large purchasing entities, and foster lasting relationships with consumers. This is particularly important for rural communities, as it combines economic, social, and environmental goals.

In rural contexts, however, the development of short supply chains faces a number of challenges. These include limited logistics infrastructure, insufficient digitalization of sales and distribution processes, seasonality of production, and difficulties in consolidating supplies resulting from the dispersion of producers. At the same time, there is significant development potential related to the growing demand for local food, the possibility of cooperation between farms, the development of digital tools, and the implementation of low-emission transport solutions, which are particularly effective on the short, repetitive routes characteristic of SFSCs.

The West Pomeranian Voivodeship is an example of a region where the importance of short supply chains is particularly pronounced. Rural areas of the region are characterised by low population density, a dispersed settlement structure, and long distances between towns, which complicate access to markets and increase transport costs. At the same time, the agricultural structure is dual: alongside large commercial farms, there are many small family farms, for which direct sales channels represent a real opportunity for increased income and economic stability. In such circumstances, short supply chains can improve the availability of local food, strengthen local economies, and increase the resilience of rural communities to disruptions in long supply chains.

The Living Lab operating in the West Pomeranian region focuses on testing and co-creating solutions that address these challenges. This includes developing farm-to-farm collaboration models, implementing digital tools to facilitate sales and supply coordination, and exploring regionally tailored transportation innovations. The goal is to increase the efficiency of short supply chains, improve the availability of local food, and strengthen the long-term resilience of rural communities.

♀ Living Lab / Replication Lab perspective

Organic District of Terre Apuane, Italy (RL)

The Lab involved different territorial actors such as people already involved in different territorial organisations (such as Strade del Vino), the municipalities, farmers and the Rural District of Lunigiana. Its territory can be divided in two main areas that can highlight different aspects and possible lever of actions for the local supply chains. For examples, if the territory of Massa suffers of urban sprawl and the high land costs, the Lunigiana area has abandoned lands with cheaper prices. In addition, in the Lab territory coexists two different level of touristic flows, where Massa had already consolidated touristic reality linked to the sea and the marble, but not in the food products, in the Lunigiana the local products have a strong link with community, traditions and productions.

Pays Pyrénées Méditerranée, France (LL)

Nearly a third of the land area in the Pyrénées-Méditerranée region is used for agricultural production, including pastureland (source: Surface Agricole Utile, Pyrénées-Orientales Chamber of Agriculture). Viticulture is the region's first crop, although the area under cultivation has been declining rapidly in recent years. Against a backdrop of repeated droughts, access to water is a key challenge for maintaining a diverse market garden sector, and in particular for offering perspective to young farmers setting up in the area.

The Pays Pyrénées Méditerranée has been coordinating a community of local stakeholders around a Local Food Project for the past five years. The aim is to strengthen the region's food resilience and agroecological transition, by making food a lever for social cohesion and overall health.

Iași, Romania (RL)

The Replication Lab (RL) Iași was established to address the priority topic of short agri-food supply chains (SFSC), covering Iași County (NUTS 3 level), located in the north-eastern part of Romania. With an area of 5,476 km², the county encompasses 5 municipalities and cities, 93 rural communes (including 418 villages), with a total population of 780 thou. inhabitants.

The RL Iași benefits from an extensive research background in the case study area, built on long-standing and active collaboration with local agri-food producers and processors, research institutions, policy makers, local authorities, civil society organisations, and NGO representatives. This foundation enabled the RL to engage, from the outset, a well-structured network of key stakeholders across all relevant sectors, capable of actively supporting the research activities planned within the Granular project.

Iași County's agricultural area covers 381,256 ha, predominantly arable land (256,098 ha), complemented by pastures, hayfields, and vineyards. Agricultural production value is relatively balanced, with approximately 52% originating from the crop sector and 46% from the livestock sector. The main crops include cereals (maize and wheat), oilseeds (sunflower and rapeseed), green fodder, and vegetables, while the primary livestock categories are dairy cattle, pigs, sheep, and poultry.

A defining local specificity is the strong prevalence of small-scale farming: approximately 94% of farms utilize less than 5 ha, making smallholders the backbone of SFSC activity in the county. This structure also drives the development of organic agriculture, with over 21,000 ha currently cultivated under organic systems by more than 260 producers, several of whom are actively engaged in short supply chains. The county's agri-food landscape is further enriched by a growing number of traditional products certified by the Ministry of Agriculture and Rural Development, spanning meat, bakery, fish-based, beverage, and other product categories — a reflection of the area's rich culinary heritage and producers' commitment to quality differentiation.

In recent years, the involvement of small agri-food producers in short supply chains has grown significantly. A key turning point was the COVID-19 pandemic, which prompted producers to explore and consolidate direct-to-consumer sales channels. As a result, participation in local fairs and farmers' markets expanded considerably, offering direct producer-consumer interaction. Digital channels also gained traction, most notably the "Taste of Iași"

online platform, dedicated to connecting local producers with consumers. These have been complemented by farm gate sales and weekly markets, creating a diverse and resilient multi-channel approach to direct sales.

This combination of strategies has fostered a dynamic and growing community of consumers with a genuine interest in local agri-food products and direct relationships with producers — providing a strong and engaged social fabric within which the RL Iași operates and from which meaningful, practice-relevant research findings are expected to emerge.

Val di Cecina, Italy (LL)

The Living Lab of the Val di Cecina is represented by the Rural and Organic District of Val di Cecina and covers a rural territory of 13 municipalities in Tuscany, Italy. The area goes from the Tyrrhenian coast to inland hilly areas and is characterised by a strong agricultural vocation.

The Living Lab involved a range of stakeholders, including the municipal administrations, farmers, local businesses, school canteen actors, Local Action Group, and researchers.

Agri-food value chains were selected as a key thematic focus because of their importance for the local economy, rural identity, and territorial development. The territory is characterised by a strong agricultural heritage and a long-standing commitment to organic production. At the same time, local stakeholders identified the need to better understand the relationships between production and consumption and to strengthen connections among actors across the value chain.

West Pomerania, Poland (LL)

Living Lab West Pomerania operates in rural areas of northwestern Poland, encompassing the West Pomeranian Voivodeship. This region is characterised by low population density, a dispersed settlement structure, and significant distances between towns, which impact the functioning of local food systems and provide a natural setting for work on short food supply chains.

Living Lab brings together key stakeholders in the local ecosystem: farmers and food producers, local governments, advisory institutions, industry organisations, and consumers of local food. Collaboration between these groups enables the identification of barriers and needs specific to the region and the testing of solutions that address local conditions.

The specific nature of the West Pomeranian Voivodeship, including long transport distances, limited logistics infrastructure, low levels of digitalization, and a dual agricultural structure, leads Living Lab to focus on improving short supply chain logistics, strengthening collaboration between farms, and developing digital tools to support sales and distribution. As such, it serves as a platform for co-creating innovation that supports the more efficient, resilient, and sustainable development of local food systems in the region.

Key findings and data insights

Organic District of Terre Apuane, Italy (RL)

In a technical sense the quantitative data on agricultural production (conventional and organic) from public institutions reveal that are not easy to be interpreted due to the different starting base of the sample, for example the census, and by incorrect and/or outdated counts in the database. However agricultural trends were validated by territorial actors and enriched through a World café session where the group was divided in four subtopics linked to their Territorial Economic Integrated Plan. In this case the data reveal various strategies that the territory can adopt to support the organic production starting from the access to land, the recovery of the abandoned land, and the different territorial dynamics, the need for more and better interaction across territory and sharing knowledge and collaboration. Indeed, the Lab needs to create collective spaces for local products, adopt innovative organisational models (like the Community Supported Agriculture) and enhance territorial identity through tools such as the De.C.O. (Denominazione Comunale d'Origine) municipal designation of origin. Finally, the Lab highlights the opportunities to develop more structured forms of integration between agriculture and tourism.

Iași, Romania (RL)

The preliminary findings on short agri-food supply chains (SFSC) from the Replication Lab Iași are grounded primarily in desk research conducted by the team, drawing on official statistical data available at the local level (Iași County). Key data sources include the Iași County Statistical Office, the Ministry of Agriculture and Rural

Development, the TEMPO Online database of the National Institute for Statistics, and the Structural Survey in Agriculture. The datasets mobilized cover a broad range of indicators: land use by category, population and labour force dynamics, number and structure of agricultural holdings, organically farmed land area, the number of certified organic producers and operators, import/export flows of organic products, and the register of traditionally certified food products. These data sources, combined with previous scientific studies elaborated by the team in the field of SFSC at county level, provide a solid empirical foundation for the ongoing analysis. The evidence base will be further strengthened in the coming period through the results of a dedicated SFSC survey currently being implemented by the team.

The statistical analysis yielded several significant findings. Agriculture emerges as a structurally important sector for Iași County, with agricultural land accounting for approximately 70% of the total county area and a production value that is broadly balanced between the crop and livestock sectors. The agricultural holdings landscape mirrors national patterns, being characterised by a very large number of smallholdings — the vast majority utilizing less than 5 ha of land. This pronounced land fragmentation presents a dual reality: on one hand, it poses challenges in terms of economic performance, investment capacity, and overall farm resilience; on the other, it constitutes a foundational asset for SFSC development, as many producers engaged in direct sales and local food circuits originate from precisely this category of small-scale farms.

A further structural challenge identified is the shortage of available agricultural labour in rural areas, which is placing increasing pressure on local producers and prompting adaptive responses — notably investment in new equipment and technologies to offset workforce constraints. At the same time, the data reveal a clear and growing interest in organic farming: the total area under organic cultivation in Iași County has increased steadily in recent years, now exceeding 21,000 ha, supported by 287 certified operators, of which 268 are agricultural producers.

These statistical findings are substantively reinforced by prior research conducted by the team, involving 32 local food producers from the North-East Development Region of Romania — the majority from Iași County — covering a diverse range of product categories including vegetables, fruits, juices, preserved foods, bee products, meat-based, bakery, and dairy products. Implemented as a two-stage Delphi exercise, the study "Local Producers' Fairs in Knowledge Ecosystems" investigated the dynamics of SFSC activity in the area, with particular focus on the challenges producers face and the role of marketing events as direct sales channels. The findings confirmed that labour shortages, administrative and bureaucratic burdens, and difficulties in securing stable sales channels represent the principal obstacles for local producers. Looking ahead, producers identified technological innovation, the diversification of sales methods, and evolving consumer preferences as the key drivers likely to positively shape the future of their activities.

In this context, local producers' fairs — such as the "Iași in Dishes" fair, organised several times per year in Iași Municipality — emerged as particularly valuable instruments for strengthening direct producer-consumer relationships. Producers cited product promotion, direct consumer engagement, and increased sales volume as their primary motivations for participation. The consistently positive feedback from both producers and consumers has ensured the continuity of these events, which remain active and well-attended today.

Val di Cecina, Italy (LL)

The Living Lab collected and analysed data on local agri-food value chains from multiple sources. Existing information on local agricultural production and agri-food sectors, derived from regional datasets was combined with qualitative data collected through an online questionnaire for farmers conducted between 2024 and 2025. Discussions with local stakeholders on the first results confirmed the weak connection between local production and local consumption and highlighted the lack of data on local food demand. As a result, the next phase of the work focused on developing a quantitative understanding of local demand. Data were collected from school canteens across the 13 municipalities of the district and from local restaurants through interviews (activity still ongoing). The analysis focused on six representative product categories — bread, pasta, cereals, legumes, cheese, and olive oil — with the aim of exploring local food demand and its potential relationship with local production.

This second phase of data collection and analysis was still under way when this abstract was finalised; its results will feed into the updated version of the abstract on the EIP-AGRI platform.

West Pomerania, Poland (LL)

Analysis of the collected data indicates that local food producers in Poland are creating a stable and mature ecosystem of short supply chains, based on companies that have been operating for years and are deeply rooted in their communities. Their operations are clearly local in nature. Sales occur primarily in their immediate surroundings,

and logistics rely on very short routes. At the same time, the data reveal a deep structural barrier: producers operate in isolation, avoiding collaboration and association, and relationships between them are competitive rather than cooperative. This creates the phenomenon of "islands of innovation." Individual producers develop their products and sales channels, including online, but they do so individually, without building a common offering, joint marketing, or joint investments. A lack of trust, experience in collaboration, and appropriate support structures are among the main barriers to the development of short supply chains. At the same time, the data indicate significant potential: producers are innovative, active, and open to new forms of sales, but they need tools, infrastructure, and institutional incentives to move from individual actions to co-creating a more integrated, resilient food system.

Living Lab West Pomerania developed and collected a comprehensive set of empirical data that significantly exceeds standard information used in food producer research. This resource was based on a survey conducted among 600 local food producers in Poland, using a structured questionnaire. The questionnaire was designed to enable a multidimensional analysis of the functioning of short food supply chains, encompassing logistical and market aspects, as well as organisational, social, and digitalization-related aspects. This made it possible to capture the dynamics of short food supply chains and identify barriers and development potential that had not previously been systematically studied. The questionnaire covered several key thematic areas. The first question concerned the actual "shortness" of the supply chain, based on data on the distance between production and sales locations and the geographic scope of operations. The next group of questions concerned sales and distribution methods, including direct sales, brick-and-mortar sales, and online sales, making it possible to capture the growing role of digital channels and the associated barriers. A significant portion of the questionnaire consisted of questions about collaboration and networking, which allowed for an assessment of relationships between producers, the level of trust, and their willingness to collaborate. Questions about innovation were also included, covering the introduction of new products, modifications to existing ones, and changes in production and organisational processes. The next block concerned intellectual property protection, allowing for an assessment of the extent to which producers protect their products against copying. The final group of questions addressed development plans and investment readiness, enabling an assessment of the potential for further scaling.

The quantitative dataset was supplemented with qualitative data obtained during Living Lab workshops and face-to-face interviews with producers. The workshops allowed for a deeper understanding of barriers to collaboration, logistical challenges, digital awareness, and perceptions of cooperatives and alternative sales models. Face-to-face interviews, in turn, enabled the collection of detailed information on producers' individual experiences, motivations, concerns, and market practices.

Taken together, all these elements create a coherent and multidimensional dataset that allows for a much more in-depth analysis of short supply chains than in previous studies. They constitute an important methodological contribution of Living Lab West Pomerania, enabling the diagnosis of SFSC based on empirical data and not only on declarations or general descriptions.

Practical implications and recommendations

Organic District of Terre Apuane, Italy (RL)

In the same territory of the Organic District coexists different dynamics. This situation can lead the District to implement differentiate strategies for example shift or integrate the maritime tourism in Massa to local production and put in the network the different gastronomic initiatives that are already well-known in Lunigiana. At the same time, the differences are an opportunity for the territory to learn and know what are the efforts and the initiatives that are already developed in the District and amplify territorial ties.

Iași, Romania (RL)

The findings emerging from the RL Iași analysis point to a set of concrete recommendations directed at rural stakeholders, decision-makers, and policy actors at multiple levels – local, national, and European.

At the most immediate level, a key recommendation for rural stakeholders – and particularly for small agri-food producers – is to actively seek out and build connections with the broader ecosystem of actors engaged in promoting short agri-food supply chains (SFSC). This includes research institutions, civil society organisations, local authorities, farm advisory services, and NGOs, all of which play a catalytic role in supporting SFSC development through local initiatives, research projects, capacity-building activities, and marketing events. Engagement in these networks is not merely beneficial – it is increasingly a prerequisite for visibility, sustainability, and growth in local food systems.

The experience gathered through previous research in Iași County offers a compelling illustration of this dynamic. The study involving local producers originated from a collaborative initiative between research institutions, NGO representatives, and local authorities of Iași Municipality – demonstrating how multi-actor partnerships can generate lasting impact. For many participating producers, what began as a tentative exploration quickly evolved into a source of professional pride and community belonging. Active participation in local producers' fairs – such as the "Iași in Dishes" event – translated into tangible outcomes: increased visibility, an expanding and loyal customer base, and the development of meaningful partnerships with other producers, retailers, and institutional actors. This trajectory illustrates how trust-building and collective identity, when nurtured through consistent engagement, can become powerful drivers of SFSC development.

Accordingly, rural stakeholders are encouraged to actively participate in marketing events – traditional fairs, farmers' markets, and online platforms – not only as commercial opportunities but as spaces for knowledge exchange, networking, and community building. Producers who engage regularly in these channels are better positioned to adapt to changing consumer preferences, access new markets, and strengthen their overall resilience.

At the local and regional level, the recommendation is to further institutionalize and resource multi-stakeholder collaboration, bringing together local authorities, producers' associations, academic institutions, consumer organisations, mass media, and NGOs around a shared agenda for SFSC promotion. Such collaboration represents a genuine win-win scenario: local producers gain market access and visibility; consumers benefit from access to fresh, traceable, and culturally rooted food products; local economies are stimulated through retained value and reduced dependency on external supply chains; and research institutions gain invaluable field-based evidence to inform future studies and policy proposals.

At the national and EU level, the findings support calls for stronger and more targeted policy instruments that reduce administrative and regulatory burdens on small-scale producers, incentivize participation in organic and traditional certification schemes, and fund dedicated digital infrastructure for local food markets. Rural development programmes and CAP strategic plans should explicitly prioritize SFSC as an integrated rural development tool — recognizing their contribution not only to agricultural income, but to social cohesion, environmental sustainability, and territorial identity.

Ultimately, the RL Iași experience underlines that the most effective pathway to scaling SFSC lies not in isolated interventions, but in sustained, cross-sectoral collaboration grounded in local realities and driven by shared purpose.

West Pomerania, Poland (LL)

The results of the Living Lab West Pomerania study point to a number of practical implications that can support the development of short food supply chains and strengthen the resilience of rural communities. The most important finding is that local producers operate within a very short geographical range and are deeply rooted in their communities, yet they operate in a highly individual manner, limiting their development opportunities. This means that support efforts should focus not only on infrastructure and digitalization, but primarily on building the capacity for collaboration, trust, and collaborative planning.

For local stakeholders – local governments, advisory organisations, local action groups, and support institutions – the research findings provide a foundation for designing initiatives that strengthen local food ecosystems. These could include creating spaces for collaboration between producers, developing local collection points and logistics centres, as well as educational initiatives on online sales, marketing, and product protection. The workshops revealed that producers need support in digitalization and tools to facilitate online sales, which could be an impetus for the creation of local e-commerce platforms or collaborative ordering systems.

At the national level, the results can support decision-making regarding simplifying regulations related to agricultural retail, direct sales, and the formation of cooperatives. The research revealed that producers perceive formalities as a barrier, and a lack of experience managing collective structures hinders the development of cooperation. This means that public policies should combine financial support with organisational and legal advice to enable producers to safely and effectively develop joint initiatives.

At the EU level, the results can be used to design instruments supporting short supply chains within the CAP, particularly in areas related to the digitalization of agriculture, the development of local markets, and the empowerment of small producers. Data from the Living Lab show that producers are innovative but lack the resources to scale their operations. This means that EU programs should support not only infrastructure investments but also soft measures such as training, mentoring, building digital skills, and the development of local partnerships.

The research findings can also serve as a tool for monitoring and evaluating public policies. The collected data, concerning logistics, sales methods, collaboration, innovation, and investment readiness, form the basis for developing local strategies for the development of short supply chains and for identifying areas requiring intervention. They can be used by decision-makers to design support programmes, by industry organisations to build collaborative initiatives, and by producers themselves to assess their own development opportunities.

The results of Living Lab West Pomerania can become the foundation for actions that strengthen local food systems: from the creation of cooperatives and shared logistics models, through the development of digital infrastructure and producer education, to the design of public policies supporting short supply chains at the local, national, and European levels.

► Transferability and broader relevance

Organic District of Terre Apuane, Italy (RL)

The findings reveal that can be useful if the process is explored by territorial actors that are directly involved in the District activities. In addition, link the data collection activity with the structure of the official strategic plan of the District, the Territorial Economic Integrated Plan, it is better to contextualise the discussion and increase the interest from participants that want to establish and promote in an operational way concrete activities on the territory.

Iași, Romania (RL)

There are some lessons – based on the Lab's experience – that can also be relevant for other rural areas across Europe, especially for those characterised by smallholder- dominated agricultural structures, rural depopulation and fragmented food markets.

A lesson that can, probably, be transferable is the importance of trust and long-term relationship building between local producers, consumers and other supporting entities. In Iași County, the most important SFSC developments emerged from bottom-up initiatives anchored in a multiple stakeholder collaboration, not from a top-down policy. This scenario – where academic sector, local authorities, NGOs, local producers etc. collaborate in enabling conditions for SFSC – can be replicable in other European rural contexts.

Another lesson refers to the catalytic role of on-line platforms and marketing events as entry points for local producers that are not familiar to direct sales. These channels proved their role in building producer confidence, market knowledge and consumer loyalty – insights relevant to rural areas where local producers may lack the resources/abilities to engage in more complex market structures.

As for common patterns, one worth mentioning is the dual challenge of land fragmentation and labour force shortages – shared by many regions from Central and Eastern Europe – representing both a constrain and a motivation for SFSC engagement. In this context, the growing local food demand in the post pandemic period seems to represent a shared opportunity – a common window for policy actions across diverse rural territories.

In different contexts – based on income level, institutional capacity and/or local food traditions – the Iași experience supports the fact that stakeholder-driven approaches, locally embedded are more effective than standard models and the adaptation to local specifics is essential to a successful SFSC development.

Val di Cecina, Italy (LL)

As the analysis is still ongoing, the lessons presented here mainly relate to the Living Lab process rather than to final conclusions on local agri-food value chains.

The Living Lab experience showed that stakeholder engagement can play an important role in shaping research priorities. While initial activities focused mainly on understanding local production systems, discussions with local actors highlighted the need to better understand consumption patterns and the relationships between different actors along the value chain. These insights helped shape subsequent data collection activities and refine the need of the Living Lab and the territory.

West Pomerania, Poland (LL)

Although the Living Lab West Pomerania research results directly address Polish food producers and the specific characteristics of Polish rural areas, many of the observed phenomena are universal and could be valuable for other European regions.

The analysis shows that producers operating in short supply chains are strongly rooted locally, operate within a very short geographical area, and base their activities on stable, long-standing practices. This pattern of locality, stability, and strong ties to place is characteristic of many European rural areas, especially where small businesses and family farms predominate. At the same time, the Polish experience reveals a phenomenon that may be relevant in other countries as well: producers are innovative at the level of their own farms, but they lack collaborative structures and tools for joint action. This leads to the formation of "islands of innovation" that do not connect into larger ecosystems. Similar mechanisms are observed in many European regions, where low levels of trust and a lack of a tradition of cooperation hinder the development of cooperatives, producer groups, and shared logistics models. The research findings also have implications for the European debate on the digitalization of agriculture. Polish experience shows that producers are ready to use online channels, but they need support in digital skills, infrastructure, and sales platforms tailored to their needs. This is a challenge shared by many EU countries, where digital transformation is uneven, and small farms often remain outside the mainstream of technological change.

The most transferable element of Living Lab West Pomerania's experience, however, is its work model, which combines quantitative research, workshops, interviews, and stakeholder collaboration. It demonstrates that effectively supporting short supply chains requires concurrent strengthening of infrastructure, skills, and social capital. This approach can be successfully applied to other rural areas in Europe, regardless of their economic or spatial characteristics. The data basis differs by design across the Labs, from a national survey of 600 producers to school canteen records and county-level agricultural statistics, but the analytical angle is common to all of them: measure the links between producers and buyers rather than describing the two sides separately. That relational evidence is what local food policy usually lacks, and it is what shows fragmentation and weak cooperation, rather than any shortage of product, to be the binding constraint.

Further information

- 'Iasul in bucate' local producers' fair, Iasi: <https://iasulinbucate.rdrp.org/>
- 'Gust de Iasi' online marketplace for local producers: <https://gustdeiasi.ro/>
- GRANULAR Living Lab Italy, Distretto Rurale della Val di Cecina: https://www.ruralgranular.eu/living_lab/living-lab-italy-distretto-rurale-val-di-cecina/
- GRANULAR project website: www.ruralgranular.eu

4.8. Rural attractiveness

Using home telecare data to see rural quality of life, and to protect older residents in heatwaves

Contributing Labs: Spain (LL), Netherlands (LL)

Summary for EIP-AGRI

What makes a rural area a place people stay in? Two GRANULAR Labs answered from different angles. The Spanish Lab in Ourense used a source rarely applied in rural policy: records from the home telecare service for older and vulnerable residents.

The context is demanding. In 2024 the province had 304,467 inhabitants, 97,752 of them aged 65 or over, and an average age of 51.3 years. Deaths outnumbered births by 4,698 to 1,261, and only 225 new dwellings were planned for the year. The telecare data revealed what standard statistics do not. Mapping users by municipality showed a strong feminisation of dependency and ageing, with women clearly overrepresented in specific rural municipalities. Comparing daily emergency calls with heatwave intensity showed when demand rises, giving a basis for early warning and for adapting care protocols during extreme heat. Text analysis of stakeholder interviews added the residents' own priorities: quality of life, work, home, village life and social relations.

Instead, the Dutch P10 network of 34 rural municipalities came at attractiveness from the housing side. National policy is largely written for urban contexts, so the Lab rural-proofed housing policy, interviewing municipalities and local housing initiatives to establish which policies help them meet their housing goals and which get in the way.

◆ **Recommendations:** start from administrative data you already hold, such as care, transport or school records, because it describes daily life better than census averages; map service users by gender and municipality, since needs are not evenly spread; connect care data to weather warnings to protect older residents during heat events; and pair the numbers with residents' own words when setting local priorities.

🌀 Thematic context and relevance for rural areas

This theme sits under the stronger and connected pillars of the EU Long-Term Vision for Rural Areas and the residential dimension of the GRANULAR Rural Compass: it concerns the conditions under which people choose to stay in, or move to, a rural municipality.

Ourense, Spain (LL)

Rural attractiveness is a key factor in ensuring the sustainable development of rural territories. It refers to the ability of these areas to attract and retain population, economic activity, talent and investment, while offering a high quality of life. In many Spanish rural areas, attractiveness is influenced by factors such as access to services, employment opportunities, connectivity, housing and mobility. At the same time, rural areas possess important strengths linked to their natural and cultural heritage, environmental quality, social cohesion, and the availability of space for new economic and social initiatives. Understanding these factors is essential for designing strategies that strengthen the resilience and long-term future of rural communities.

In Ourense, rural attractiveness is strongly shaped by demographic decline, ageing and the dispersed settlement pattern, but also by the availability of housing, employment and environmental amenities. In 2024, the province had 304,467 inhabitants, of whom 97,752 were aged 65 or over, and the average age reached 51.3 years. The natural population balance was -3,437, reflecting 1,261 births and 4,698 deaths. At the same time, the province recorded positive international migration, with 5,467 arrivals from abroad compared with 2,618 departures in 2023, suggesting that migration can partially compensate for population loss and contribute to territorial renewal.

Economic opportunities remain concentrated in small firms and the service sector. In 2023, Ourense had 24,816 companies, of which 21,206 employed no more than two workers, while services accounted for 16,620 businesses. By August 2025, the province registered 108,362 Social Security affiliations, almost 80,000 of them in services, compared with 4,540 in agriculture and fishing. Housing construction was limited, with only 225 new dwellings planned in 2024, although the province offers comparatively affordable space, a high-quality natural environment, thermal resources and strong cultural heritage. These findings indicate that improving rural attractiveness in Ourense requires better access to services and transport, stronger digital connectivity, more diversified employment and measures to mobilise vacant housing, while building on the province's environmental, cultural and thermal assets.

P10 network, Netherlands (LL)

Rural attractiveness in the Netherlands is inseparable from housing. The municipalities of the P10 network, large rural areas with dispersed settlements, struggle to provide sufficient and suitable housing, while national housing policy is largely designed with urban contexts in mind. Whether people can find a home decides whether they can stay in, or move to, a rural municipality.

👤 Living Lab / Replication Lab perspective

Ourense, Spain (LL)

The Spanish Living Lab operates in a rural territory characterised by a diverse range of municipalities, demographic dynamics and economic activities. The process has involved public authorities, rural development organisations, local associations, businesses, researchers and citizens.

Through a participatory approach, the Living Lab has explored the factors influencing rural attractiveness, identifying both challenges and opportunities to strengthen community well-being and improve territorial development prospects. The combination of local knowledge and data-driven evidence has provided a more comprehensive understanding of rural dynamics.

The Spanish Living Lab focuses specifically on rural municipalities in the province of Ourense and uses home telecare data as a key source for analysing territorial attractiveness and quality of life. These data provide evidence on the distribution and needs of older and vulnerable people, helping to identify differences in access to care, social support and essential services across the territory. This perspective connects demographic vulnerability with the capacity of rural areas to retain population, support independent living and offer adequate living conditions.

P10 network, Netherlands (LL)

The P10 is a network of 34 large rural municipalities that acts as a collective voice for the Dutch countryside. For this theme it examined housing policy directly, interviewing municipalities and local housing initiatives.

Key findings and data insights

Ourense, Spain (LL)

The analyses carried out show that rural attractiveness depends on a combination of economic, social, environmental and territorial factors. The findings highlight the importance of service provision, digital and physical connectivity, employment and entrepreneurship opportunities, as well as environmental quality and community engagement.

The use of different data sources and collaboration with local stakeholders has made it possible to identify specific territorial strengths and gain a better understanding of the needs and expectations of local populations. The results underline the importance of adopting place-based approaches tailored to the characteristics of each rural area.

As part of the qualitative analysis, interviews conducted with local partners and stakeholders were examined in order to identify the main themes associated with rural attractiveness in the Ourense territory. The interview material was processed through a simple text analysis that allowed the extraction of the most frequently repeated words and expressions, producing word rankings and word clouds as visual tools to highlight recurrent ideas and perceptions. This approach helped to transform qualitative knowledge into structured evidence, making it easier to identify the concepts most strongly associated with local experience, such as quality of life, work, home, village life and social relations.



Ranking	Word	Times repeated
1	Ano/year	11
2	Terra/land	11
3	Vida/life	10
4	Tempo/time	10
5	Home/man	8
6	Día/day	7
7	Muller/wife or woman	6
8	Eustaquio	5
9	Agora/naw	5
10	Traballo/job	5
11	Ovellas/Sheeps	5
12	Casa	5
13	Mundo	5
14	Cousa	5

Figure 20: Most frequent words in stakeholder interviews in Ourense: word cloud and ranking. Source: own elaboration by the Ourense Living Lab.

As a further example of the Living Lab's data-driven work, the gender distribution of home telecare users was mapped across the municipalities of the province of Ourense. The map highlights municipalities where the proportion of women among telecare users is above the municipal average, with darker blue shades indicating a greater female overrepresentation. This spatial analysis helps to identify territorial differences in the use of care services and illustrates the strong feminisation of dependency and ageing in certain rural areas. It also provides useful evidence for targeting social care resources and adapting local support policies to the needs of older women living in dispersed municipalities.

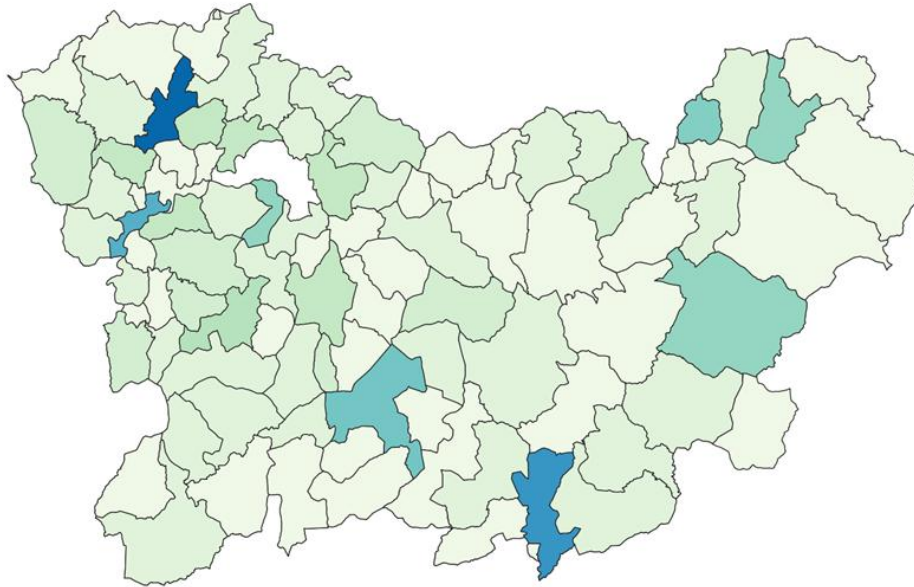


Figure 21: Share of women among home telecare users by municipality, province of Ourense. Source: own elaboration by the Ourense Living Lab, based on telecare records.

The potential relationship between home-based emergencies recorded through the telecare system and environmental conditions in the province of Ourense was also explored. The figure compares the daily number of emergencies with periods of high temperatures and heatwave intensity, making it possible to identify possible temporal coincidences between peaks in thermal stress and increases in requests for assistance. Although this descriptive comparison does not by itself demonstrate a causal relationship, it provides a useful basis for detecting risk periods, improving early-warning systems and adapting telecare protocols to protect older and vulnerable people during extreme heat events.

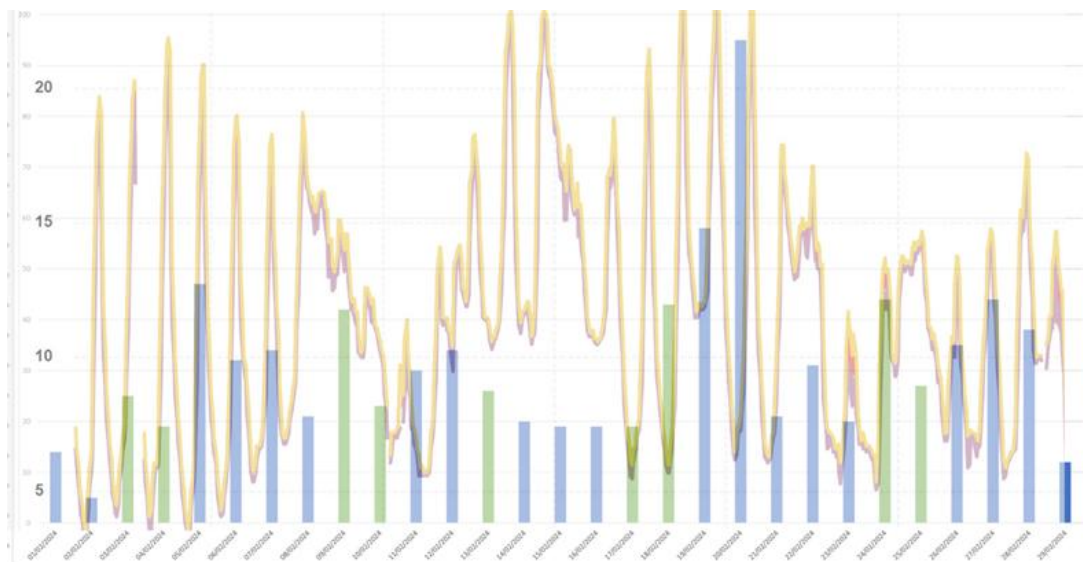


Figure 22: Daily telecare emergency calls set against heatwave intensity, province of Ourense. Source: own elaboration by the Ourense Living Lab.

P10 network, Netherlands (LL)

The Lab rural-proofed housing policies. It interviewed municipalities and local initiatives for rural housing to see which policies help them reach their housing goals, and which policies make it harder to succeed, and identified enabling and limiting factors. Both reports are distributed by the P10 network channels.

Practical implications and recommendations

Ourense, Spain (LL)

The findings suggest the need to promote integrated strategies that combine improvements in services, connectivity, economic opportunities and quality of life. They also highlight the importance of strengthening the participation of local stakeholders in planning and decision-making processes.

The use of data and evidence can support a better identification of needs and priorities, facilitating the design of more effective policies aimed at enhancing the attractiveness and resilience of rural areas.

P10 network, Netherlands (LL)

What helps or hinders rural municipalities on housing rarely shows up in national statistics; it surfaces in what municipalities and local initiatives themselves report. Policy for rural attractiveness therefore needs to pair formal indicators with structured feedback from the municipalities concerned.

► Transferability and broader relevance

Ourense, Spain (LL)

The experience of the Spanish Living Lab demonstrates that rural attractiveness is a shared challenge across many European territories. Combining data, local knowledge and stakeholder participation provides a valuable approach for understanding rural dynamics and supporting informed decision-making.

The lessons learned can be adapted to different rural contexts, contributing to the design of strategies aimed at strengthening the capacity of rural territories to attract and retain population, economic activity and innovative initiatives. What both Labs demonstrate is that attractiveness can be measured from records that already exist. On the Spanish side, home telecare data reveals the feminisation of dependency by municipality and the coincidence of emergency calls with heatwaves; on the Dutch side, the outcomes of housing policy are read through what municipalities and local initiatives report. Neither required a new survey, and both are within reach of any municipality prepared to examine its own administrative data.

P10 network, Netherlands (LL)

The Dutch case shows that rural proofing an existing policy is often a cheaper route to attractiveness than designing new instruments, because it identifies the specific points at which a national measure fails in a rural context rather than assuming the whole instrument must be replaced.

Further information

- Galician Institute of Statistics (IGE): <https://www.ige.gal/>
- Spanish National Statistics Institute (INE): <https://www.ine.es/>
- GRANULAR project website: www.ruralgranular.eu

5. Methodological Practice Abstracts

The following methods address different stages of the same process: identifying a rural challenge, finding or collecting relevant data, interpreting evidence with local actors and using it in decision-making. They show that data alone is not sufficient. Reuse depends on local capacity, stakeholder participation and adaptation to the territorial context.

5.1. Novel tools for data collection

Web scraping tourism platforms for rural data: what it delivers, what it costs and when it breaks

Lead partner(s): IIASA

Contributing partners: France (LL), Finland (RL), Spain (LL)

Summary for EIP-AGRI

Official tourism statistics are published at coarse scales, arrive late and say little about what actually attracts visitors. GRANULAR tested whether public data from an online tourism platform could fill that gap, using TripAdvisor as the example.

A Python crawler collected every listed establishment in a study region, with address, coordinates, category and rating, then gathered the visitor reviews attached to each one, including the reviewer's country, month of travel and type of trip. The results were georeferenced, aggregated to administrative regions and classified into cultural, recreational and nature-based tourism.

The French dataset alone held around 50,000 establishments and almost 2 million reviews. Checked against official figures for rural NUTS2 regions between 2020 and 2022, review activity tracked overnight stays closely, with a correlation of 0.85 and one extra review corresponding to roughly 2,310 overnight stays. The method worked less well where attractions are few or the platform is little used, as in the Finnish regions.

The honest conclusion is that this data is powerful but fragile. A scraper is built for one website and breaks when that website changes, and during the project TripAdvisor added commercial anti-bot protection that stopped the production workflow.

◆ **Recommendations:** budget for maintaining the collection pipeline, not only for analysing the data; always validate a platform indicator against official statistics before relying on it; expect thin coverage where attractions are few; respect platform terms of service, crawl slowly and cache what you download; and start from the open tutorial and source code the project has published rather than building from scratch.

🌀 Methodological context and rationale

Tourism information is often difficult to obtain for rural areas because official statistics are published at large geographic scales and provide limited detail. Online platforms such as TripAdvisor contain valuable information on attractions and visitor reviews, but these data are not available as downloadable datasets.

To address this, GRANULAR developed a web-scraping workflow that collects publicly available tourism information from TripAdvisor and converts it into GIS-ready datasets for regional analysis. This is one of the novel open data sources GRANULAR set out to test, alongside mobility, Earth observation and citizen science data. What it adds is descriptive detail that official statistics do not carry: not how many visitors came, but what they came for, when, and how one rural destination differs from another.

Description of the method, tool, or approach

A Python script automatically visits TripAdvisor pages within a study area and collects information on tourism establishments such as attractions, museums, beaches and tours. For each establishment, the scraper extracts information such as name, location, category and visitor ratings. Visitor reviews can also be collected, including their publication date and available travel information.

The collected data are cleaned and exported into GIS-compatible formats for mapping and further analysis.

A simplified version of the workflow is available as an open tutorial together with the source code. Advanced features used in the project, such as VPN rotation, domain switching, multilingual crawling and address geocoding, were omitted to keep the tutorial easy to understand, replicable and with fewer dependencies.

Testing and application in Living Labs / Replication Labs

The method was applied in France, Finland and Spain, where it successfully collected large datasets of tourism establishments and visitor reviews.

The resulting datasets supported tourism mapping and regional analysis and were presented during Living Lab activities. Feedback confirmed that the approach provides useful local tourism information that is often missing from official statistics. Applying the same workflow in France, Finland and Spain, with no change beyond the definition of the study area, was itself the replicability test. The code transferred directly between the three; what varied was the usefulness of the output, which depends on how intensively the platform is used locally and was weakest in the Finnish regions, where attractions and reviews are fewer.

Lessons learned and practical recommendations

Web scraping can provide detailed tourism information that is otherwise difficult to obtain and can complement official tourism statistics. However, the method requires regular maintenance because every website has its own structure, and even small changes can stop a scraper from working.

During the GRANULAR project, TripAdvisor introduced stronger anti-bot protection (DataDome), making automated data collection much more difficult. This illustrates an important challenge of relying on commercial websites: access to data can change without warning, and long-term data collection cannot be guaranteed.

Anyone applying this method should expect to spend time maintaining the scraping workflow, adapting it to website changes, and checking data quality. For long-term monitoring, it is worth considering multiple data sources so that analyses are less dependent on a single platform.

Scalability and replicability

The approach can be adapted to other regions and tourism websites, although each website requires its own implementation. Basic Python knowledge is needed to modify and run the scraper.

The published tutorial provides a practical starting point for researchers and practitioners who want to build similar workflows. By making visitor patterns visible to the people managing a destination, the method supports the digital transition of rural tourism management, and indirectly its ecological dimension, since seasonality and visitor concentration are the starting point for keeping tourism within local environmental limits.

Further information

- GRANULAR project: www.ruralgranular.eu
- Tutorial and source code: <https://github.com/FlightlessAlbatross/tripadvisor-scraper-tutorial>

5.2. Coordination

Coordinating a multi-country rural project: what kept sixteen Labs engaged for four years

Lead partner(s): University of Pisa – Italy

Contributing partners: Indirectly all the partners that took part in the GRANULAR project

Summary for EIP-AGRI

Running a participatory project across many rural territories is above all a coordination problem. GRANULAR worked with seven Living Labs and nine Replication Labs across Europe, differing in discipline, language and capacity, and had to keep them engaged for four years. This is what worked.

Coordination was deliberately flexible rather than fixed. Most contact was online, especially early on, when individual and collective meetings helped facilitators name local needs. Over time, direct channels between Labs and work packages were built through regular meetings, monthly updates and shared repositories. Meetings were tightly structured and used interactive tools such as Miro, Slido and Mentimeter, so that planning, feedback and knowledge exchange stayed visible to everyone.

Two things mattered more than any tool. The first was combining formats: collective sessions to build common understanding, one-to-one meetings for tailored support, and thematic meetings that brought together Labs working on the same subject, which let Replication Labs pick up methods directly from Living Labs. The second was meeting in person, and doing so inside events that already existed, such as general assemblies, cross-visits and methodological workshops.

◆ **Recommendations:** clarify roles, expectations and procedures at the beginning, because procedural transparency is what makes collaboration possible; plan the calendar to avoid overlapping; integrate the activities during the events; budget is needed for continuous capacity building, especially on data collection methods; and check that the partners with the smallest budgets can actually afford to take part.

🌀 Methodological context and rationale

Creating and maintaining a collaborative environment was not an easy task, especially as activities were developed across different rural contexts and implementation phases involving seven Living Labs and nine Replication Labs. GRANULAR was perceived as a complex project due to its multilevel interactions (within and between Labs, and between Labs and project partners), the different disciplines, background and skills, its iterative character, and the challenges of generating new evidence for policy-making based on data.

Making sense of and pursuing seemingly distant objectives, such as supporting digital, economic, and ecological transitions in rural areas through integrated place-based evidence and multi-actor processes, requires time to build cross coordination and collaboration. Remote coordination proved challenging and highlighted the need for qualitative approaches and iterative efforts to manage, co-evaluate, and share the knowledge across Labs, project partners, and local actors. Supporting the understanding of the project and contextualizing its objectives at the territorial level was not automatic but required an exploratory process aimed at building trust and strengthening relationships. This participatory approach helped move from abstract assumptions and technical aspects toward concrete territorial actions, while creating spaces for knowledge exchange, capacity sharing, and peer-to-peer collaboration.

Remote coordination provided flexibility to address local challenges, including stakeholder engagement, geographical distances, changing priorities, and data collection at territorial level. At the same time, it contributed to establish a common project framework for identifying, generalizing, and, where possible, validating results across partners. In-person activities involving project partners, Lab's facilitators, and territorial actors were recognized as essential for creating synergies and mutual-understanding, integrating activities, and making project objectives more tangible at territorial level. However, important constraints emerged related to the need for capacity-building activities, especially in data collection methodologies, and the limited financial resources available to the Replication Labs. What had to be coordinated was not administration but evidence production: sixteen Labs collecting data by different methods, in different languages and legal contexts, whose results still had to be comparable enough to build a shared picture of rural diversity.

🌀 Description of the method, tool, or approach

During the project, GRANULAR Living Labs worked and interacted with partners to ensure engagement and continuous exchange of information on project activities. The approach adopted was flexible and consisted of multiple processes to support interactions and stakeholder engagement. While grounded in key project activities, deliverables, milestones, and tasks, it evolved to foster shared understanding among partners and introduce organisational improvements that enhanced coordination and collaboration.

Most interactions with the Labs were conducted online, particularly during the early stages of the project, when individual and collective meetings helped facilitators identify local needs and priorities. The flexibility of the coordination approach allowed partners and Labs to be involved in specific discussions, promoting knowledge sharing, and supporting capacity-building activities on topics such as communication and data collection.

Over time, direct communication channels between Labs and Work Packages were strengthened through regular meetings, monthly updates, and the shared repositories. Labs were engaged in a continuous in-person reflexivity process, encouraging Labs the exchange of experiences and knowledge, the evaluation of progress, and the collective re-calibration of activities. Interactive tools, thematic meetings, World Café sessions, annual knowledge exchange events facilitated peer-to-peer learning, mutual support, and the identification of context-specific solutions.

By integrating these activities into official in-person project events, such as General Assemblies, cross visits, and methodological workshops, the project enhanced collaboration, maximized participation, and supported a continuous cycle of planning, consolidation, monitoring, evaluation, and adaptation across diverse rural contexts (fig. 23).

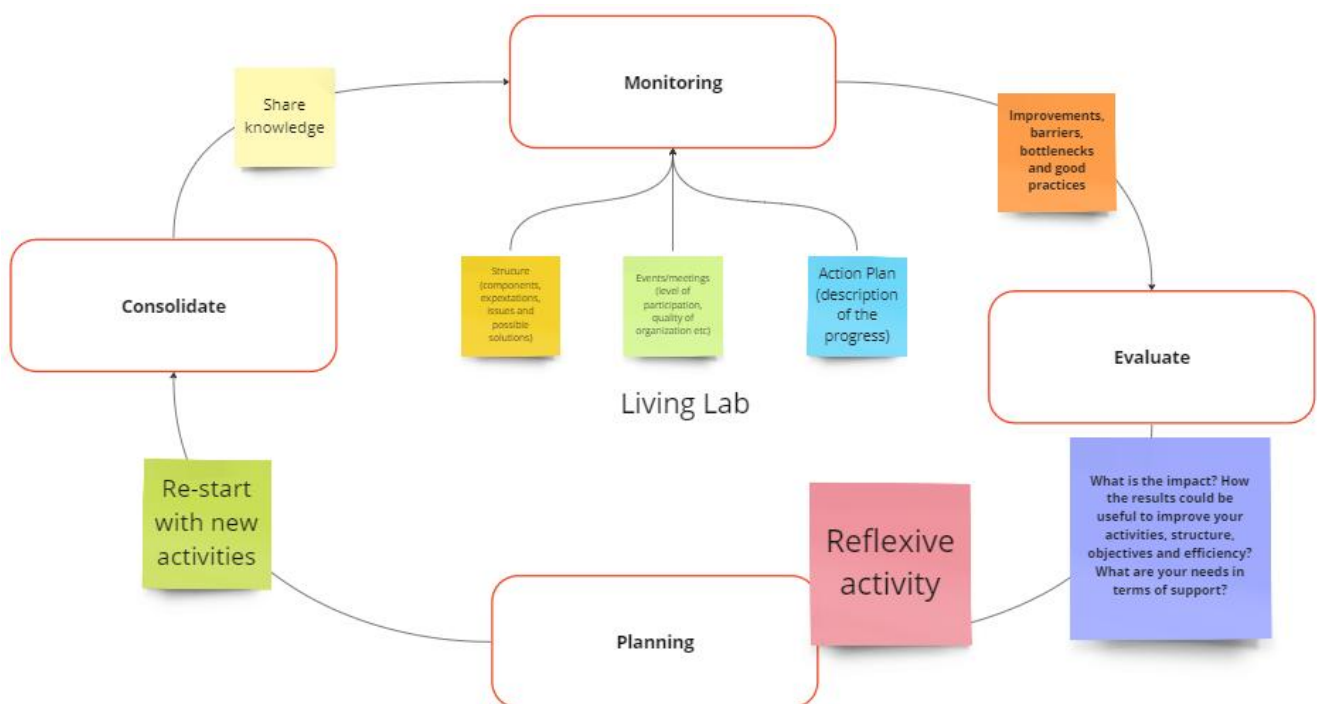


Figure 23: Planning, consolidation, monitoring and evaluation of the Living Labs' activities. Source: UNIFI.

Well-structured meetings, supported by interactive tools such as Miro boards, Slido, and Mentimeter, facilitated task planning, visualisation of activities, feedback collection, and knowledge exchange. Open discussions on ongoing activities (data collections) and future plans encouraged peer learning and the sharing of practical experiences between Labs and partners.

In addition, thematic meetings involving Labs interested on similar topics enabled deeper exchanges, and the exploration of transferable practices. These activities were particularly valuable for recognising the territorial differences and identifying context-specific solutions, especially for Replication Labs.

📍 Testing and application in Living Labs / Replication Labs

The approach was progressively refined throughout the project in response to the evolving requests and needs from Labs and the availability of project partners to be involved actively. Regular meetings, thematic sessions, and exchanges with Work Packages leaders ensured transparency, facilitated knowledge sharing, and supported the development of a common understanding of the project objectives and methods.

Given the diversity of rural contexts, thematic priorities, Labs needs, and approaches adopted for data collection and analysis, a tailored approach was adopted. Individual meetings complemented collective sessions to address specific local needs and support facilitators in the implementation of activities. In addition, dedicated meetings were organised to integrate Replication Labs in the general Labs meetings and organised specific (thematic) meetings with presentation of Living Labs and discussion with Replication Labs interested in “replicate” the activity and take contact with specific partners.

Participation to these meetings fostered a sense of ownership and trust among stakeholders, increasing the likelihood of acceptance and successful implementation of initiatives. Overall, the approach enhanced the quality and legitimacy of outcomes by integrating diverse perspectives and building stronger community buy-in. The effect on outputs was concrete: methods developed in one Lab, among them visitor surveys, rural proofing exercises and data collection protocols, were taken up by others, which reduced duplicated effort and kept results comparable across territories. Coordination is therefore not overhead but a condition for producing evidence that holds together at European level.

📄 Lessons learned and practical recommendations

Regular feedback mechanisms, peer-to-peer exchange, and one-to-one meetings proved particularly valuable for building trust, provide tailored support to facilitators, and maintaining stakeholder engagement. Whenever possible, project activities should be integrated into existing territorial events and conducted in person, as face-to-face interactions facilitate relationship building, informal exchanges, and stronger stakeholder involvement. Moreover, the main benefits of the participatory approach include increased stakeholder ownership, stronger collaboration, improved knowledge exchange, and the co-production of context-sensitive solutions.

Several lessons emerged from the implementation of the approach such as:

- clarifying roles, expectations, and project procedures from the first stages proved to be essential to support collaboration and guarantee procedural transparency.
- project activities should be carefully planned to avoid overloading stakeholders with multiple tasks and meetings within short periods.
- participatory approaches require continuous capacity-building efforts, the reciprocal learning process enhances the quality, relevance, and legitimacy of project outcomes.

► Scalability and replicability

The implementation of the method requires significant time, facilitation skills, and resources to support coordination, capacity building, and long-term engagement. It can be replicable and adaptable in other projects or wide collaborations depending on their contexts and missions.

👉 Further information

- Project website: www.ruralgranular.eu
- GRANULAR Living Labs: <https://www.ruralgranular.eu/living-labs/>
- Webinar report – Living Lab: Driving Change in Rural Areas: <https://zenodo.org/records/15131353>

5.3. Data capacity building

Getting open data used in rural areas: workshops that connect data producers with local users

Lead partner(s): IAMM

Contributing partners: France (LL, Pays Pyrénées Méditerranée)

Summary for EIP-AGRI

Free, detailed datasets exist for most rural areas, but they are rarely used there. Local actors often do not know the data exists, or cannot process it. GRANULAR tackled this through the Pays Pyrénées Méditerranée Living Lab in France, by bringing data producers and local users into the same room.

The method has four steps: identify local data gaps and priority themes; bring in the relevant data producers; co-design the workshop with participants rather than for them; and collect feedback and further data requests afterwards.

Two workshops tested it. One connected the local OpenStreetMap community, municipal GIS staff, a local planning association and researchers, to see how citizen-generated spatial data could describe mobility and outdoor activity. The other brought the French and Catalan statistical institutes, INSEE and IDESCAT, together with municipalities, employment agencies and journalists, with hands-on exercises on population and tourism data. Participants also handed the institutes a data wish list, making the exchange run both ways.

Because it ran across the France-Catalonia border, the approach was tested across two administrative systems, two languages and two data infrastructures. Participants reported greater confidence in finding and using open data for local planning.

◆ **Recommendations:** hold workshops in person and close to users, because the relationships are the point; start from concrete local examples rather than generic demonstrations; design the content with participants, not for them; collect a data wish list and pass it back to the producers; and be realistic that this works only where the facilitator already has local legitimacy, which takes time to build.

🌀 Methodological context and rationale

Rural areas are increasingly expected to produce local evidence to support ecological, digital and social transitions, from climate adaptation to land use monitoring and demographic planning. Yet many local actors lack the awareness and skills to use existing open datasets, including geospatial, citizen-generated and official statistical data — for place-based analysis. This capacity gap weakens the evidence base for tailored rural policy.

Despite the growing availability of free, granular datasets at appropriate spatial scales, they remain underused at local level. Not all stakeholders know these resources exist or are freely accessible, and fewer still have the technical skills to analyse them. Promoting a data culture within a territory — through structured collaboration between data producers (mainly public authorities and researchers) and local users — enables the availability and reuse of this data. It empowers rural communities to engage in data-driven initiatives, produce multi-dimensional territorial analyses, and make more informed decisions aligned with EU rural and cohesion policy frameworks. This capacity is a precondition for everything else GRANULAR set out to do: multi-dimensional characterisation of rural areas has no effect locally if the actors it describes cannot find, read or use the data it rests on.

⚙️ Description of the method, tool, or approach

Capacity-building activities at local level aim to bridge the gap between data-driven local initiatives — which seek to collect, use or process detailed territorial information — and existing, accessible datasets or innovative methodologies that local users may not yet know or be able to use.

The Living Lab approach, which brings together local stakeholders from scientific, political and civil society sectors, provides a framework for peer learning, connecting data producers and users, and organising training sessions designed with and for local practitioners. The process follows four broad steps:

- Needs assessment — identify local data gaps and priority thematic areas (e.g. mobility, land cover, population dynamics)
- Partner mobilisation — engage relevant data producers (national institutes, research organisations) and targeted local users
- Workshop design and delivery — co-design training formats adapted to participants' skills and needs, covering both data discovery and practical processing
- Follow-up and feedback — collect participant feedback and identify further capacity needs or data requests

The data types covered span multiple rural dimensions:

- OpenStreetMap (OSM) — spatial/digital data on mobility infrastructure, land use, and outdoor activity patterns (digital transition)
- Satellite imagery — land cover and environmental monitoring (ecological transition)
- INSEE / IDESCAT statistical data — demographic, economic and social indicators (social transition)

Target users include municipal officers, local planning associations, economic chambers, journalists and civil society representatives. National institutes and research organisations (RIATE-CNRS, INSEE, IDESCAT) act as data providers and trainers.

📍 Testing and application in Living Labs / Replication Labs

The Pays Pyrénées Méditerranée Living Lab (France) has implemented two complementary types of capacity-building activity, addressing both digital/spatial and statistical data literacy.

Digital and spatial data literacy: A workshop brought together Local OpenStreetMap Community members, GIS experts from municipalities, the local urbanism association AURCA and researchers from RIATE-CNRS. The session explored how the OSM community and municipalities could collaborate to share geospatial knowledge with citizens and use available data to better understand mobility flows and outdoor activities. RIATE-CNRS presented applied examples of OSM use directly relevant to the PPM territory. This addressed the digital transition dimension — building local capacity to use citizen-generated spatial data for planning.

Statistical data literacy: A cross-border workshop brought together INSEE (France) and IDESCAT (Catalonia) with local stakeholders including municipalities, economic and employment agencies, and journalists. The institutes demonstrated how to access open data and exploit it for territorial analysis, with practical exercises on population characteristics and tourism. A quiz format encouraged active engagement. Data users were also able to discuss their working practices and submit a "data wish list" directly to producers.

The cross-border France–Catalonia dimension is a key feature: it tested the replicability of the approach across different administrative systems, languages and institutional contexts — directly relevant to different EU rural settings. Participant feedback indicated improved confidence in identifying and using open data sources for local planning purposes. The cross-border design carried the replication test within it: the same format was delivered across two administrative systems, two languages and two statistical infrastructures, which is the condition any method has to meet to travel between Member States.

📝 Lessons learned and practical recommendations

The Lab's role as a trusted facilitator between data providers and local users is what makes bespoke, targeted workshops possible. This approach capitalises on the complementary strengths of both parties: data producers bring technical expertise and access to official datasets; local users bring contextual knowledge and practical planning needs. Combining both produces more grounded and useful outputs than either party could achieve alone.

Key practical recommendations for others wishing to replicate this approach:

- **Establish the Lab's visibility early** — trust takes time to build; proactive communication and consistent presence in the territory are essential
- **Co-design with users, not just for them** — involving local actors in workshop design increases relevance and uptake
- **Organises in-person workshops and close to data users** — interpersonal relationships between data producers and users facilitate future collaborations
- **Start with concrete, local examples** — abstract data demonstrations are less effective than exercises applied directly to the local territory
- **Connect data requests back to producers** — the "data wish list" format is a simple but effective tool for improving data supply

A key limitation is that this approach depends on the Living Lab having already established local legitimacy. This cannot be assumed in new territories and requires dedicated time and resources. Replication in areas without an existing Lab structure would need a phase of trust-building before capacity activities can be effective.

At policy level, improving local data literacy directly strengthens the evidence base for rural proofing processes and territorial needs assessments required under EU cohesion and rural development frameworks. Communities that can use data independently are better positioned to engage with policy consultations and advocate for place-based solutions.

► Scalability and replicability

The capacity-building approach developed through the PPM Living Lab is designed to be scalable and context-adaptable. It does not depend on bespoke infrastructure or large budgets. The core requirements for replication are:

- A trusted local facilitator (a Living Lab, local development agency, or equivalent)
- Access to at least one national or regional data producer willing to engage with local users
- A defined community of local data users with identifiable needs

Costs are relatively low: the main inputs are facilitator time, partner institute engagement and venue/logistics. Workshop formats can be adapted to hybrid or fully digital delivery, reducing barriers for geographically dispersed rural communities.

The cross-border France–Catalonia experience demonstrates that the approach can bridge different administrative systems, languages and data infrastructures — an important condition for scaling across EU Member States and Associated Countries.

🔗 Further information

For further information on the activities described, refer to the Pays Pyrénées Méditerranée Living Lab website (in French) :

- Meeting with statistical offices : <https://www.payspyreneesmediterranee.org/domaines/granular-le-laboratoire-vivant/les-actualites-granular/granular-comment-acceder-aux-donnees-de-l-insee-et-de-l-idescat-retour-sur-l-atelier-du-01-03-2024.html>
- Workshop bringing together OSM contributors, local authorities and researchers : <https://www.payspyreneesmediterranee.org/domaines/granular-le-laboratoire-vivant/les-actualites-granular/granular-synergies-entre-openstreetmap-et-collectivites-retour-sur-la-rencontre-du-28-02-2024.html>

5.4. Integrating data into decision-making

From priorities to evidence: a six-step data cycle for rural planning with limited resources

Lead partner(s): IAMM

Contributing partners: Romania (RL), Spain (LL, Ourense), France (LL, Pays Pyrénées Méditerranée)

Summary for EIP-AGRI

Rural policy needs evidence, but local actors rarely have the time, skills or budget to produce it, and official datasets often miss what matters locally. GRANULAR built a practical answer: the Local Data for Rural Planning cycle, a six-step route from priorities to usable evidence.

The steps are: set the agenda and identify territorial priorities; turn them into SMART indicators; mine existing secondary data before collecting anything new; collect primary data only where gaps remain; process and harmonise it; then analyse it for the decision at hand.

Three examples show it working. The Romanian Lab in Iași mined official statistics systematically before running its own survey on short food chains, building a picture of land use, holdings, organic area and labour, and cutting the amount of new data it had to collect. The Spanish Lab combined spatial analysis, administrative telecare records and a focus group into emergency risk indicators by municipality, revealing inequalities standard demographic statistics do not show. The French Lab used aggregated mobility datasets to map seasonal and directional flows, validated them against existing statistics, and discussed the results with local authorities.

The clearest lesson is that starting from minimum data needs beats starting from maximum ambition. Labs that tried to collect everything ran out of resources and produced data too complex to use.

◆ **Recommendations:** define your indicators before you look for data; inventory existing sources first, because much of what you need already exists; balance statistics with what residents tell you; match the level of detail to the decision, since sub-municipal data is powerful but costly; and document your process so others can reuse it.

🌀 Methodological context and rationale

Rural policy is only as good as the evidence it rests on. But existing datasets often fail to reflect the multi-dimensional realities of rural Europe. Key dimensions — mobility, accessibility, biodiversity, demographic trends, social wellbeing — are frequently under-covered by public data sources, or available only at too coarse a spatial or temporal resolution to be useful for local planning.

At the same time, local actors in rural areas — municipalities, development agencies, community organisations — are increasingly expected to produce evidence to support place-based policies and engage with EU transition agendas on climate, digital adoption and social inclusion. Yet they often lack the structured methodologies to identify what data they need, where to find it, and how to use it. This gap between data availability and data use is a core barrier to effective rural governance.

The GRANULAR project addresses this gap by developing a replicable, step-by-step methodology that helps local actors move from priority setting to evidence generation in a structured, resource-efficient way — connecting to both conventional official datasets and innovative new sources such as geospatial, citizen science and crowdsourced data.

⚙️ Description of the method, tool, or approach

The "Local Data for Rural Planning" cycle (Figure 24) provides a structured framework that guides rural actors through six phases of data-driven decision-making. It is designed to be resource-efficient: it prioritises minimum data needs and maximises reuse of existing secondary data before committing to new primary data collection.

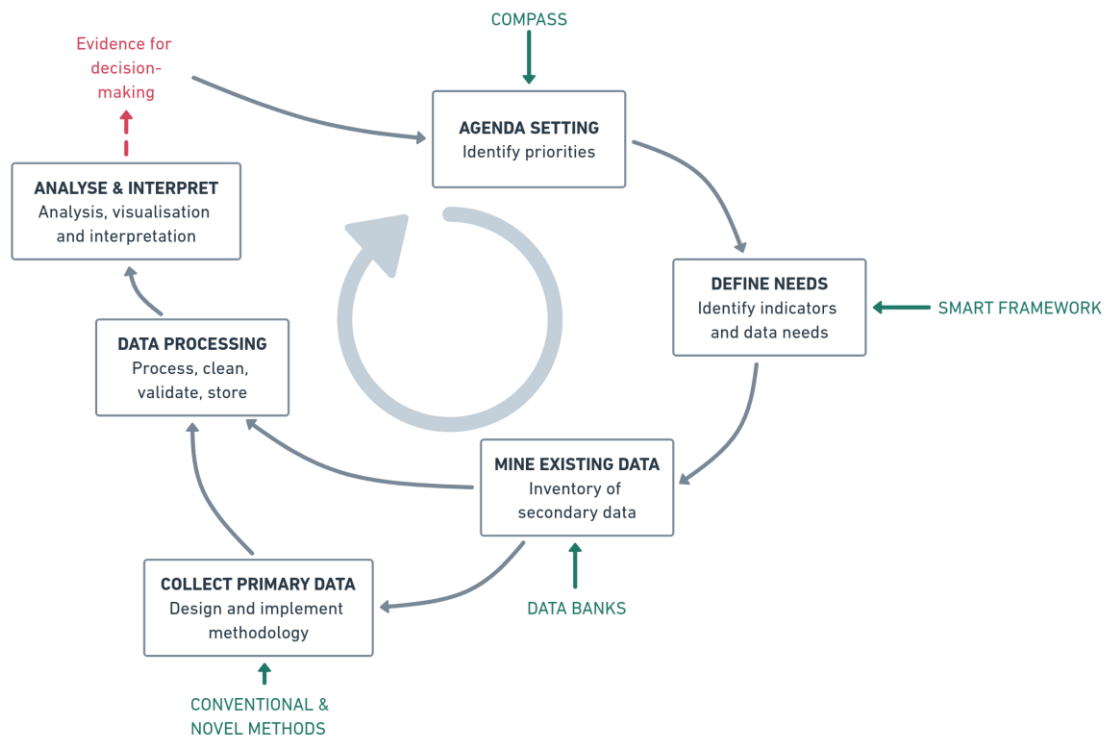


Figure 24: The Local Data for Rural Planning cycle. Source: IAMM.

The six phases are:

1. **Agenda setting** – identify territorial priorities using the COMPASS tool, drawing on community input and policy objectives
2. **Define needs** – translate priorities into SMART indicators (Specific, Measurable, Achievable, Relevant, Time-bound), specifying the data required to track each one
3. **Mine existing data** – conduct a systematic inventory of available secondary data (national statistics, administrative records, remote sensing products, open datasets) before collecting new data
4. **Collect primary data** – where gaps remain, design and implement data collection using conventional methods (surveys, interviews) and/or novel approaches (citizen science, crowdsourcing, sensor data)
5. **Data processing** – clean, validate, harmonise and store data to ensure accuracy and interoperability
6. **Analyse and interpret** – apply appropriate analytical and visualisation tools to generate evidence directly usable for planning decisions

Key decisions at each phase include: defining minimum data needs, balancing quantitative and qualitative information, choosing the level of spatial disaggregation, setting collection timelines, and specifying accuracy requirements. These decisions are guided by available local resources — time, skills, and budget.

Target users include municipal planners, rural development practitioners, Local Action Groups, regional authorities, and researchers working with or in rural communities. The cycle is designed to work with different levels of technical capacity and can be adapted to the scale and resources of the territory.

🔗 Testing and application in Living Labs / Replication Labs

The "Local Data for Rural Planning" cycle has been applied and tested across the GRANULAR Multi-Actor Lab network, which spans a wide range of territorial contexts — from sparsely populated upland areas to peri-urban fringes, and from northern to southern Europe. This diversity allowed the methodology to be stress-tested across different policy contexts, data environments and institutional capacities.

Key findings from Lab applications:

- In Labs with technical capacity that requires prioritisation, the secondary data mining phase proved particularly valuable — local actors often discovered relevant datasets they had not previously known or used, reducing the need for costly primary data collection.

In Romania, the aim of Iași Replication Lab is to deepen the understanding of local food system characteristics and its future dynamics. Before launching their own survey on short food supply chains, they carried out extensive secondary data mining, systematically mobilising official statistics (TEMPO Online of the National Institute for Statistics, the Iași County Statistical Office, the Ministry of Agriculture and Rural Development, and the Structural Survey in Agriculture) to build a multi-indicator picture (land use, structure of holdings, organic area, labour dynamics). This sequenced and reduced the use of costly primary collection.

- In Labs with stronger analytical capacity, the SMART indicator framework helped structure multi-dimensional territorial assessments covering ecological, social, and economic dimensions simultaneously.

In Spain, the Living Lab has studied the territorial distribution of ageing in Europe and the functioning of telecare systems in rural contexts. Using a mixed methodology that combines spatial analysis, exploitation of administrative data from telecare programmes and qualitative contributions from a focus group, the Lab has developed innovative operational, comparable, and territorialised metrics, such as population-adjusted emergency risk indicators at the municipal level. By highlighting spatial inequalities that are not captured by traditional demographic statistics, these metrics facilitate decision-making that is more in line with rural reality.

- Novel data sources — including geospatial open data (OpenStreetMap), satellite-derived land cover products, and citizen-generated observations — were successfully integrated alongside official statistics in several Labs, demonstrating the value of combining conventional and innovative data.

In France, the Pays Pyrénées Méditerranée Living Lab sought to understand the volume of people present throughout the year, clarifying their travel patterns, and assessing the temporal variation of mobility and connectivity, to improve mobility services (particularly public transport). Analysis of aggregated mobility datasets by Meta combined with TripAdvisor mobility signals focused on mobility before, during, and after key holiday periods and tourism seasons, and identified directional flows and seasonal mobility patterns. The results were validated using existing complementary datasets and statistics, then shared and discussed with local actors and authorities to identify implications for tourism planning and mobility services.

- Adaptations were needed to account for differences in national statistical systems, data availability, and local governance structures; the cycle's modular design allowed this without compromising the overall framework.

Stakeholder feedback highlighted the importance of the agenda-setting phase: when local priorities are clearly defined from the outset, subsequent data work is more focused and the resulting evidence more directly useful for planning. The three Lab applications also show what adaptation looked like in practice: Romania sequenced secondary data mining ahead of its own survey, Spain built new municipal indicators from administrative records, and France combined novel mobility datasets and validated them against existing statistics. The cycle held in each case; what changed was the data environment it was applied to.

Lessons learned and practical recommendations

The clearest lesson from across the Labs is that starting with minimum data needs is more effective than starting with maximum data ambition. Practitioners who tried to collect everything at once often ran into resource constraints and produced data that was too complex to use in practice. A focused, phased approach delivers more actionable results.

Practical recommendations:

- Define indicators before searching for data — not the other way around. The SMART framework prevents data collection from drifting away from actual policy needs
- Prioritise secondary data first. Much of what local actors need already exists in open datasets; the inventory step consistently reveals underused resources

- Balance quantitative and qualitative data. Statistical indicators capture trends, but qualitative inputs from community members often identify what the numbers miss
- Match the level of disaggregation to the decision at hand. Sub-municipal data is powerful but expensive; regional data may be sufficient for strategic planning
- Document and share your data process. Transparent metadata enables data reuse by others and builds the local evidence base over time

A key limitation is that the cycle assumes a minimum level of organisational capacity — at least one person with analytical skills and dedicated time. In the most resource-constrained rural areas, external support (from a Living Lab facilitator, a university partner, or a regional agency) may be needed to get the process started. This dependency should be planned for, not assumed away.

At policy level, embedding this cycle within local development planning processes — such as LEADER area strategies or territorial cohesion assessments — ensures that data work feeds directly into decision-making rather than remaining a standalone research exercise.

► Scalability and replicability

The "Local Data for Rural Planning" cycle is explicitly designed to be scalable and replicable. Its modular structure means it can be applied at different territorial scales (municipality, sub-region, cross-border area) and adapted to the data environment and governance structure of any EU rural context.

Conditions for replication:

- A defined territorial scope and at least one committed local actor with planning responsibilities
- Access to national or regional open data sources (statistical, geospatial, or administrative)
- Analytical capacity — either in-house or supported by a partner organisation

Resource requirements are variable and scalable. The secondary data mining phases require primarily time and analytical skills, not significant financial investment. Primary data collection costs depend on the methods chosen, but citizen science and crowdsourcing approaches offer low-cost alternatives for many indicator types. The cycle is the operational core of GRANULAR's contribution to place-based policy: it is the route by which novel data sources, from mobility datasets to administrative records, become evidence that a municipality can act on, and it supports the ecological, digital and social transitions by making each of them measurable locally.

🔗 Further information

- For practical insights into data requirements and methodological support for data collection and usage at every stage of the planning process, refer to GRANULAR Deliverable [D6.2 Guidelines and Training Materials for Data Collection](#);
- For data sources and analysis, refer to GRANULAR Deliverable [D3.1 Screening Rural Data Sources](#) & [D3.2 Exploring Rural Data Landscapes](#), and the [Digital Platform](#).

5.5. Local rural proofing

Will this policy help or hurt rural areas? A tested method for finding indirect effects

Lead partner(s): Ecorys and James Hutton Institute

Contributing partners: Living Labs (Scotland, NL, IT, PL, FR), Replication Labs (EL, FI, IT, LT)

Summary for EIP-AGRI

GRANULAR developed and tested a practical method to check how policies affect rural areas. It combines three elements: the policy or initiative being assessed, local knowledge from people familiar with the territory, and "rurality" elements drawn from the EU Rural Vision and Rural Diversity Compass, covering access to services, natural resources, and community-led approaches. For each element, simple questions are asked: is it relevant, why, is the effect direct or indirect, does it vary by area, who is affected, and what action could reduce harm. Where data allows, effects are also rated by direction, strength, and geographic level.

One full round is complete so far: eight Multi-Actor Labs in seven countries each applied the method to a policy chosen for their own territory, from island policy in Finland to wolf-compensation schemes in Italy. It worked across very different policies and territories, revealing indirect or hidden effects that standard checklists usually miss. A second round is now underway, with all labs assessing the same EU-level policy, the Digital Decade Programme, to compare results directly across territories.

◆ **Recommendations:** start with the qualitative screening before attempting any quantification; treat missing data as a signal of where local monitoring needs strengthening, not as a reason to stop; and assign the roles of knowledge generator, translator and validator explicitly, whether they sit in one organisation or several. No advanced data skills are needed, which makes the method usable by local administrations, NGOs and community groups.

🌀 Methodological context and rationale

Rural areas across the EU are very diverse, but most policy assessments rely on generic, EU-wide indicators that miss how a measure actually plays out locally. Existing rural proofing approaches often stop at a broad question, "does this affect rural areas?", with no structure and no local input. This means indirect, hidden, or place-specific effects go unnoticed. GRANULAR fills this gap by combining a structured framework with local territorial knowledge, so impacts are identified case by case rather than assumed from the top down.

⚙️ Description of the method, tool, or approach

The method rests on three elements: the initiative being assessed (a policy, strategy or programme), "rurality" elements (combining the EU Long-Term Vision for Rural Areas and the Rural Diversity Compass: prosperous, connected, resilient, stronger, environmental, productive, residential, recreational), and territorial knowledge.

In practice, it works in two steps. First, the initiative is screened against each rurality element with simple questions: is it relevant, why and how, is the effect direct or indirect, does it vary across rural types, who is most affected, and what action could reduce harm. Second, where data allows, effects are rated more precisely (direction, strength, geographic level, change over time, and any monitoring indicator).

Inputs needed are a description of the initiative and local knowledge of the territory. The target users are Multi-Actor Labs (Living Labs and Replication Labs), who can act as generators, translators, or validators of knowledge, alongside policymakers who want to test an initiative before or during implementation. The logic can be summarised as: Territorial Knowledge x Initiative x Rurality elements = Rural impacts, including hidden ones. These eight elements are GRANULAR's multi-dimensional characterisation of rurality in operational form: instead of one generic question about rural impact, the screening requires a separate answer for each dimension, which is what surfaces effects a single question would miss.

♀ Testing and application in Living Labs / Replication Labs

Two rounds have been run. In Round 1, 4 Living Labs and 4 Replication Labs each tested a policy of their own choice, relevant to their own territory, covering national, regional, and multi-level initiatives (from island policy in Finland to wolf-compensation schemes in Italy). The method worked across very different policy types and governance levels, surfaced indirect and systemic effects, and showed geographic inequality as a recurring theme, with less-connected areas often benefiting less. Labs adapted the process to their own governance setup; the Finnish Lab, for example, ran an iterative loop between a scientific partner, local lab members, the ministry owning the policy, and a collective reflection step. Feedback showed that standard indicators often fell short for indirect or demographic effects, while well-targeted, existing indicators worked better.

Round 2 is currently in progress, with input expected from 3 Living Labs and 1 Replication Lab. This time all labs are assessing the same EU-level policy, the Digital Decade Policy Programme 2030, allowing direct comparison of impacts across very different rural territories. The evidence the method produces is a structured impact record for each policy: which rurality elements are affected, in which direction and at what strength, and which effects would otherwise remain invisible. A public authority can reuse it directly, since it needs only an initiative to assess, people who know the territory and a facilitator, and both the method and the tool will be published on the GRANULAR Digital Platform.

Lessons learned and practical recommendations

The framework proved flexible enough to apply to very different policies, scales, and governance levels. Impacts are often a mix of immediate and longer-term, direct and indirect effects. Practical tips: start with the qualitative screening before attempting any quantification; treat missing data as a signal of where better local monitoring is needed rather than a reason to stop; and assign clear roles (generator, translator, validator), which can sit in one organisation or be split across several. The main benefit is that it is structured yet adaptable, and it surfaces impacts that generic checklists miss. The main limitation is that suitable indicators for indirect or systemic effects are still scarce, and EU-level expectations of full coverage can be unrealistic for local actors.

► Scalability and replicability

The method and tool are built to be reused. It asks the same structured questions regardless of country, policy, or governance level, as shown by its use across very different national contexts in Round 1. It requires an initiative to assess, people with territorial knowledge, and a facilitator to run the process; no specialised technical capacity is needed. The method and tool will be available on the GRANULAR Digital Platform.

Further information

- Project website: www.ruralgranular.eu
- Publications on rural proofing: GRANULAR Deliverables [D5.1 Guidelines for the rural proofing of transition policies in Europe](#) and [D5.2 Report on the rural proofing of selected policies](#)

5.6. Cross-visits

Cross-visits that change practice: how to run peer learning between rural territories

Lead partner(s): University of Vigo

Contributing partners: Italy (LL), Netherlands (LL), France (LL), Poland (LL), Sweden (LL), Spain (LL), United Kingdom (LL)

Summary for EIP-AGRI

Rural areas learn well from each other, but only if the exchange is organised. GRANULAR ran seven cross-visits that brought 133 participants into each other's territories, and this is what made them work.

Each visit followed the same structure: the host Lab presented its context and challenges; participants went out to see initiatives on the ground; they met local stakeholders; a facilitated session drew out reflections; and the group identified what could be taken home. Visits were hosted across Spain, Scotland, Sweden, Poland, Italy and France, and covered mobility, wellbeing, sustainable tourism, short food chains, natural resource management, rural proofing, digital tools and governance.

Participants came from very different positions - researchers, local and regional authorities, rural development agencies, farmers and rural entrepreneurs, community and environmental organisations, tourism actors and policy practitioners- enriching the discussions.

Four lessons stand out: rural territories differ enormously yet share the same underlying problems. Meeting face to face produced deeper learning than online exchange. Combining local knowledge with data made the policy discussion sharper and peer learning works best when it identifies practices to adapt rather than to copy.

◆ Recommendations: balance field visits with structured reflection; bring in several stakeholder groups rather than homogeneous actors; steer discussion explicitly towards transferability and what would have to change locally; and document the lessons systematically, so that the knowledge circulates instead of staying only with those who travelled.

🌀 Methodological context and rationale

Rural territories facing comparable challenges and rarely have a structured way of learning from one another. Written outputs travel poorly, and online exchange conveys little of the context in which a practice works. Cross-visits address this by placing practitioners inside another territory, where a practice can be seen in the conditions that produced it. To support the process of empowering through the sharing knowledge on challenges and practices, techniques of analysis and data collection across local actors, Labs, researchers, civil servants, policy makers the Cross-Visit methodology consisted of:

- Presentation of local context and challenges.
- Field visits to relevant initiatives and projects.
- Meetings with local stakeholders.
- Facilitated discussion and reflection sessions.
- Identification of transferable lessons and opportunities.

⚙️ Description of the method, tool, or approach

A total of 7 Cross-Visits were organised involving 133 participants from Living Labs and Replication Labs.

Host	Participants
Val di Cecina	23
P10	30
PPM	23
KUT	13
Sweden	13
Spain	22
Scotland	9

Table 6: Cross-visit host territories and numbers of participants. Source: UVIGO.

Stakeholder groups represented:

- Researchers and universities
- Local and regional authorities
- Rural development agencies
- Farmers and rural entrepreneurs
- Community organisations

- Environmental organisations
- Tourism actors
- Policy practitioners
- Living Lab and Replication Lab facilitators

Testing and application in Living Labs / Replication Labs

The methodology was tested across multiple territorial contexts including Spain, Scotland, Sweden, Poland, Italy and France.

The visits explored diverse themes including:

- Rural mobility
- Rural wellbeing
- Sustainable tourism
- Short food supply chains
- Natural resource management
- Rural proofing
- Data and digital tools
- Governance and participation

Despite territorial differences, participants identified common challenges and opportunities related to rural resilience, sustainability and evidence-based policymaking. What participants observed most consistently was that the transferable element is rarely the practice itself but the conditions that allow it to work: who convenes the actors, what data they hold, and how decisions are taken. Traces of transfer are visible in the Labs' later work, where survey designs and engagement formats first seen during a visit were adapted elsewhere, and hosting Labs revised their own practice in response to visitors' questions.

Lessons learned and practical recommendations

Lessons learned

- Rural territories are highly diverse but face many shared challenges.
- Direct interaction with stakeholders generates deeper learning than online exchanges.
- Combining local knowledge with data and evidence strengthens policy design.
- Peer learning helps identify practices that can be adapted rather than simply replicated.
- Living Labs provide an effective environment for experimentation and mutual learning.

Recommendations

- Include a balance between field activities and structured reflection.
- Ensure participation from multiple stakeholder groups.
- Focus discussions on transferability and adaptation.
- Document lessons systematically to support wider dissemination.

Scalability and replicability

The methodology is highly replicable and can be applied in different rural contexts.

Key conditions include:

- Local host organisations.
- Stakeholder engagement.
- Clear thematic focus.
- Structured facilitation.
- Documentation of lessons learned.

The methodology integrates other GRANULAR outputs including [Rural Proofing exercises](#), the [Rural Compass](#) and the [GRANULAR Digital Platform](#).

Further information

- Multi-Actor Labs cross-visit dossiers: <https://www.ruralgranular.eu/news/granular-releases-multi-actor-labs-cross-visit-dossiers-from-across-europe/>
- Cross-visit on rural mobility in France: <https://www.ruralgranular.eu/news/granular-kicks-off-first-cross-visit-on-rural-mobility-in-france/>
- Cross-visit in Scotland: <https://www.ruralgranular.eu/news/exploring-rural-futures-granular-cross-visit-in-scotland/>
- Project website: www.ruralgranular.eu

5.7. Reflexive cluster (Living Labs)

What makes data usable in a rural place? Lessons from sixteen Multi-Actor Labs

Lead partner(s): University of Pisa - Italy

Contributing partners: Living Labs and Replication Labs

Summary for EIP-AGRI

Rural actors often cannot get hold of the data they need, or cannot use it once they have it. GRANULAR put a direct question to its Multi-Actor Labs, the Living Labs and Replication Labs running the project locally: what would make data genuinely usable in a rural place?

Despite differing in history, membership and priorities, the Labs converged on three ways of working. They began with desk research on existing databases and secondary data, to establish what already existed and where the gaps were. They worked with research partners to refine what they actually needed and to build a shared vocabulary and went into the ground using workshops, interviews, focus groups and surveys, presenting results through several supports as word clouds, tables and maps rather than raw figures.

The Labs were clear that they struggled when working alone, and that support from research partners made the difference, provided those partners' objectives were aligned with their own. They also flagged a mismatch that is easy to overlook: research timetables and practitioners' agendas run at different speeds, and that gap causes frustration.

◆ **Recommendations:** plan engagement for the long term, with explicit objectives and timelines; involve end users as co-designers rather than as consultees; invest in trust and soft skills before data collection begins, trust is what lets people take ownership of data; combine quantitative and qualitative evidence and bring local knowledge into interpreting it; think on the design collection so data can be aggregated or disaggregated later, in order to reach different decision-makers or territorial actors; identify the right support for transferring the knowledge and close with an event that hands the data, maps and findings back to the territory.

Methodological context and rationale

Rural actors struggle to access and use data for understanding rural dynamics and to effectively take decisions. Through the GRANULAR MALs the following question was addressed: *in what way data can be meaningful and easy to be used in local rural contexts?*

The MALs pointed out their needs not only for access data, but also for developing actors' capacity, attending trainings, and learning from other Labs. In addition, it is necessary to be able to present data in an accessible way for local stakeholders, supported by project tool (e.g. story map), "visually" appealing and accessible, and collect feedback from practitioners.

Concepts, data and tools developed during the project can be supportive in contextualising rural challenges, but they must be readapted for the context and try to show their tangible opportunities. The timeliness of the research outcomes, particularly the gaps between the research timetable and the practitioners' agenda, was highlighted by partners as a critical issue that needs to be addressed. Continued involvement of MALs and sustained collaborations, guided by clear objectives and timelines, are essential to avoid frustration. Consequently, this process requires time, commitment and cooperation.

Description of the method, tool, or approach

In terms of data, indicators, and tools, MALs highlighted the need to generate dynamic data to identify territorial trends at appropriate scales, and their drivers both in qualitative and quantitative terms. Given the exploratory nature of the process through which MALs and partners identified data needs, and engaged into: (i) discussions on data needs and their integration in the project activities, and (ii) knowledge exchanges about methodologies, tools, and already existing data sources.

Despite their heterogeneity, in terms of history, actors, organisation and priorities, MALs developed individual strategies for organising data collection, analysis and representations. These strategies can be grouped in three main, and in some cases simultaneous, actions:

- desk research with a preliminary research/analysis on existing databases, secondary data and the identification of data gaps;
- interaction with partners across the convergence and refinement of data needs and methods, while building a common language;
- field activities with the involvement of territorial actors through workshops, semi-structured interviews, focus groups, surveys and mixed-methods approaches, supported by a variety of data representations (e.g., word cloud, tables, reports).

Testing and application in Living Labs / Replication Labs

Overall, MALs experienced greater difficulties when carrying out activities independently. Instead, the tools they received, the teamwork and assistance from academic collaborators, along with the alignment of their objectives with those of the MALs, proved to be extremely beneficial. Indeed, MALs Identified effective triangulation between research needs and local actors as a key principle of the effort, pointing out the benefits of such an approach.

Collaboration is also important for obtaining feedback on activities implemented locally, accessing new data sources and methodological approaches, and supporting decisions on how to conclude specific work streams and advance subsequent activities. Furthermore, MALs emphasized that effective interactions require sufficient time for explanations and discussions. In this regard, they highlighted the relevance of engaging parliaments and municipal authorities to better capture the dynamics in rural areas, identify new data and evidence to inform policy development, and address potential issues related to representation in decision-making processes.

Prioritizing the development of soft skills, before the data collection activities, can enhance community resilience and cohesion, leading to more effective outcomes in the use of data and tools for policymaking. More broadly, the process of building trust is closely related to local stakeholders' capacity to access, understand, and make use of data (data appropriation), as well as to their opportunities to participate in European networks and collaborative initiatives.

An immersive approach proved necessary to gain a deeper understanding of the dynamics characterizing rural areas. In this context, cooperation with academic partners was perceived simultaneously as a challenge and a solution. On the one hand, engagement with the scientific community was sometimes regarded as a source of complexity and rigidity by certain categories of stakeholders participating in the MALs. On the other hand, stronger collaboration and exchange of knowledge, ideas, and expertise were considered essential for fostering innovation and identifying effective solutions to emerging challenges. The cluster produced more than discussion. It changed how the Labs worked, prompting adjustments to engagement formats and to how results were presented to local audiences, and it fed the project's guidance and training materials on data collection. Its central finding, that trust and soft skills have to precede data collection rather than follow it, is itself a reusable design rule for anyone setting up a Multi-Actor Lab.

Lessons learned and practical recommendations

Informed decision-making relies on availability and access to the right mix of both qualitative and quantitative data. It is also crucial to ensure that the data is reliable, credible, and sufficiently robust to support informed and evidence-based decision-making. This can be achieved by including local knowledge in data interpretation, and in training stakeholders on how to identify robust data.

Practical recommendations

- Ensure stakeholders' engagement for the long run throughout any multi-actor program.
- Consider all skills that could be helpful to keep stakeholders motivated and actively engaged.
- Include end-users as co-designers to ensure their involvement throughout the process, thus building capacities.
- Combine the different types of data, maps and results in a closing event to foster the data appropriation process and identifying how much this process reflects the experiences of territorial actors, what recommendations MALs or researchers can draw from this to generate input into territorial strategies and policies.

► Scalability and replicability

Reliability and integrity of the data is critical for ensuring the credibility of information. In this context, the integration between science and society, within an effective science-society interface, is needed to make research more applicable and beneficial. Data transparency and accessibility are recommended to enhance trust and usability, by working with reproducible tools and approaches supported by capacity building activities. At the same time, bottom-up data transparency is suggested to involve grassroots-level contributions for more comprehensive insights, in a mixed-methods approach.

MALs observed that data collected at the local level may not always be directly comparable or relevant to higher-level policy processes, leading to potential misalignment of needs. To address this risk, the data collection and analysis methodologies must be designed accounting for scalability since its inception, thus allowing for aggregation or disaggregation of information as needed. This would facilitate the integration of local insights into broader policy debates while ensuring that local specificities are not lost in the process.

Further information

The Deliverable D6.2 “Guidelines and training materials for data collection” is available in <https://zenodo.org/records/18984171>

5.8. Reflexive cluster (Replication Labs)

Replication is adaptation, not copying: transferring rural methods to data-scarce territories

Lead partner(s): ERDN (European Rural Development Network), Poland

Contributing partners: The nine GRANULAR Replication Labs (Albania, Finland, Greece, Italy, Latvia, Lithuania, Moldova, Romania, Serbia).

Summary for EIP-AGRI

GRANULAR's nine Replication Labs joined the project later than the rest, to test whether the data, tools and methods developed in the Living Labs would work somewhere new. Across Albania, Finland, Greece, Italy, Latvia, Lithuania, Moldova, Romania and Serbia they met the same wall, and it was not analysis but data. Unified, fine-grained local data was scarce, and reliable information on what residents and stakeholders think was largely missing.

Their answer was consistent. Each Lab began with desk research on official statistics, to find out what already existed and where the gaps were, then filled those gaps by treating local knowledge as data in its own right. The Lithuanian Lab combined national statistics with interviews with municipalities, architects and service providers. The Greek Lab built detailed datasets on services and tourism and added the project's accessibility and mobility data. The Finnish Lab paired national statistics with a visitor survey, and the Romanian Lab combined official data with a Delphi exercise among producers.

Two findings stand out. The Labs made least progress when working alone, and tools, teamwork and support from project partners were decisive. And replication proved to be adaptation rather than copying, because every method had to be reworked for its new context.

◆ **Recommendations:** start from your data needs rather than your data ambitions, and reuse existing sources before collecting anything new; triangulate official statistics with local knowledge, and invest in people's ability to interpret both; engage municipalities and local authorities early; and design data collection so it can be aggregated or disaggregated later, so local detail still reaches national and EU policy.

🌀 Methodological context and rationale

GRANULAR's nine Replication Labs, in Albania, Finland, Greece, Italy, Latvia, Lithuania, Moldova, Romania and Serbia, joined the project at a later stage with the task of replicating its approach in new territories, testing and adapting the data, tools and methods first developed in the project's Living Labs. For most of them the binding difficulty is not analysis but data itself, since many territories lack unified, fine-grained local data and reliable information on residents' and stakeholders' views is often missing. Coming in later, and starting largely from scratch on data, the Labs met this challenge especially sharply. The reflexive cluster therefore looked at their experience with data: how they worked out what they needed, where they found it, and what made it usable, around one practical question, in what way can data be made meaningful and easy to use in local rural contexts where it is scarce or fragmented?

⚙️ Description of the method, tool, or approach

Despite their heterogeneity in history, actors and priorities, the Labs developed comparable strategies for organising data collection, analysis and representation. These can be grouped into a few main, and often simultaneous, actions:

Desk research on official statistics and secondary sources, with an explicit identification of data gaps; one Lab, for example, reviewed several national data sources before collecting anything of its own.

Interaction with project partners to refine data needs and methods and to build a common language, including collaboration with the project's data teams on satellite and social-media mobility data.

Field activities engaging local actors through interviews, focus groups, surveys, a World Cafe and design-thinking workshops, supported by accessible data representations such as maps, tables and reports.

Throughout, the Labs treated local knowledge as a data source in its own right, combined qualitative and quantitative evidence, and adapted tools developed earlier in the project to the specifics of each new context. What was tested, concretely, was the transferability of the project's instruments: the Action Plan template, the monitoring tool with its reflective fields, the thematic Practice Abstract templates, and data approaches first developed in the Living Labs, from visitor surveys to accessibility analysis.

📍 Testing and application in Living Labs / Replication Labs

Applied across the nine Labs, the approach consistently paired official statistics with local knowledge. The Lithuanian Lab combined national statistics with interviews and discussions with municipalities, architects and service providers; the Greek Lab built fine-grained datasets on services and tourism and added the project's accessibility and social-media mobility data; the Finnish Lab drew on national statistics alongside a visitor survey; the Romanian Lab combined official statistics with a producer Delphi. The Labs reported that they made least progress when working alone, and that tools, teamwork and support from project partners were decisive, helping them adapt approaches developed earlier in the project to their own contexts.

A consistent pattern emerged across very different territories: the same scarcity of unified local data and the same gap on stakeholders' views, which made triangulation with local knowledge, and the engagement of municipalities and authorities, central to producing usable evidence. Adaptation followed a consistent pattern across the nine Labs: each kept the structure of the instrument but rebuilt its evidence base, replacing data assumed to exist with what was actually available locally, and reading the results against the dimensions of the GRANULAR Rural Compass rather than against a single indicator.

📄 Lessons learned and practical recommendations

Lessons learned

- In replication, data rather than analysis is the binding constraint: the recurring obstacle was a lack of unified, fine-grained local data and of stakeholders' views.
- Data becomes usable through triangulation: combining official statistics with local knowledge, and building stakeholders' trust and capacity to use data themselves (data appropriation).
- Informed decisions rely on the right mix of qualitative and quantitative data, and on its reliability, which including local knowledge in interpretation helps to secure.
- Replication is adaptation, not copying: joining later and working in new territories, the Labs had to rework the project's methods, tools and data approaches to fit each context.

Recommendations

- Start from data needs, not data ambition, and reuse existing secondary data before collecting anything new.
- Triangulate official data with local knowledge, and invest in stakeholders' capacity and soft skills so they can access and interpret it.
- Engage municipalities and local authorities early to capture rural dynamics and to inform decisions.
- Include local actors as co-designers and share results back to them to consolidate data appropriation.

► Scalability and replicability

The approach is transferable to other rural territories and projects, provided a few conditions are met. Reliability and accessibility of data are essential, supported by reproducible tools and by capacity building so that local actors can use the data themselves. Most importantly, because data collected locally is not always comparable with higher-level policy processes, methodologies must be designed for scalability from the outset, allowing aggregation and disaggregation as needed, so that local insight can feed broader policy debates while preserving local specificity.

As later entrants adapting existing approaches, the Replication Labs also show that transfer works best when methods are treated as a starting point to be reworked, not a template to be copied. These lessons feed the project's wider objectives directly: they establish the conditions under which GRANULAR's data, tools and methods survive transfer into territories with thinner data and smaller budgets, which is the test that matters for anything intended to outlive the project.

Further information

- Universal Design for inclusive rural development, GRANULAR in the Ignalina region: <https://www.ruralgranular.eu/news/universal-design-for-inclusive-rural-development-granular-in-ignalina-region-lithuania/>
- Peer-reviewed article behind the Lithuanian Lab's work (Sustainability, 2025): <https://www.mdpi.com/2071-1050/17/18/8311>
- South Savo Visitor Survey 2025: https://www.ruralgranular.eu/wp-content/uploads/2026/02/GRANULAR-South-Savo-Tourism-Survey-2025_v2.pdf
- GRANULAR Deliverable D6.2 Guidelines and training materials for data collection: <https://zenodo.org/records/18984171>
- GRANULAR Digital Platform: <https://www.ruralgranular.eu/news/granular-platform/>

6. Conclusions

This deliverable presents the second batch of the Practice Abstracts. It brings together 16 abstracts based on the work of the seven Living Labs, nine Replication Labs and project partners. The thematic abstracts show how common rural challenges take different forms across territories. The methodological abstracts show how data, local knowledge and participatory processes can support rural actors in responding to these challenges. Together with the seven abstracts in Deliverable D6.3, this batch completes the project target of 23 Practice Abstracts.

Overall, the sixteen abstracts support a number of consistent conclusions on the conditions needed for the Labs and the project to contribute to the wider objectives of GRANULAR and to the Long Term Vision for Rural Areas.

First, the granularity of the evidence is not a technical detail but the decisive factor in whether rural actors can act on it. Across very different themes, the same pattern recurs: municipal averages and EU-level indicators can hide the differences that matter, while evidence produced at village, municipal or establishment level, for example bus frequencies, telecare records, centenarian counts, turbine locations, and visitor reviews, makes differences visible and supports more targeted action.

Second, much of this evidence can be produced at relatively low cost. The methods documented here use free satellite imagery, open software, official statistics read below their usual level of aggregation, administrative records already held by public services, and small surveys within the reach of a Local Action Group or municipality. This does not mean that data work is cost-free. It still requires time, basic analytical capacity and support for local actors to interpret and use the results.

Third, data becomes usable when it is interpreted with local knowledge. Official sources identify patterns and allow comparison across territories, but they need local actors to explain what these patterns mean in practice. Local knowledge also identifies issues that are not visible in existing datasets. The role of the Labs was therefore to translate data into usable knowledge for planning and policy, and to connect local findings with the institutions that make decisions at regional, national or European level. Cross-visits supported this process by allowing actors to compare methods and findings across different rural contexts.

Fourth, methods travel as adaptations, not copies. The experience of the Replication Labs, including Labs outside the EU statistical system, shows that transfer works when the basic logic of a method is kept but its data, institutional arrangements and stakeholder process are adapted to what is locally available. GRANULAR thus provides practical approaches that rural actors can adapt to their own priorities, capacities and governance context.

Fifth, capacity decides whether any of this happens. The methodological abstracts on data capacity building, coordination and the two reflexive clusters converge on the same point: data and methods only produce local benefit where people have the skills, trust and time to use them, and building that capacity, through training, facilitation and peer exchange, is as much part of the method as the data itself.

Finally, none of these approaches works without a local structure that takes ownership of the process and the results. This may be a Forest Charter, a LEADER group, a park administration, a municipality or a network of municipalities. These structures bring together local knowledge, data providers and decision-makers, and they help ensure that evidence leads to action. The experience of the Labs also shows that smaller organisations need adequate time, facilitation and resources if they are expected to participate fully.

The abstracts show the core contribution of GRANULAR. Rural diversity is often hidden when evidence is too aggregated or disconnected from local experience. Combining official statistics with administrative records, geospatial and mobility data, online-platform data, surveys, interviews and local knowledge helps rural actors identify differences within their territories and respond to them. This provides a stronger basis for place-based public action and for ecological, digital and social transitions in rural areas. The summaries will now be submitted to the EIP-AGRI database via the EU CAP Network platform, making the methods, findings and practical recommendations available to rural actors and policy-makers beyond the project.

Read together, the abstracts show what GRANULAR set out to demonstrate: that the ecological, digital and social transitions of rural areas can be supported with evidence granular enough to respect their diversity, and that place-based data, in the hands of local actors, is a working instrument of those transitions rather than a by-product of research.

7. Acknowledgements

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