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LIVERUR

Living Lab Research Concept in Rural Areas

DELIVERABLE 3.1:

Report of Case studies on rural living lab's definitions

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EXECUTIVE SUMMARY

Purpose

The living lab movement is emerging globally as an approach by its methodologies and tools for economic and social development at the local and regional scale, giving great opportunities for rural, urban and regional development, to all actors in the **Quadruple Helix innovation**, such as governmental organisations, Higher Education Institutions and Research organisations, civil organisations, business (large companies and SMEs), leveraging their sustainable competitiveness. It finally giving a new role in promoting, facilitating and co-creating innovation in case of the **LIVERUR** project, in rural innovation.

The Task 3.1 task summarizes the existing cases of the Rural Living Labs by the creation of a large repository and giving insight on how living labs are differentiated on the basis of three main characteristics (Almirall and Wareham, 2008): *user involvement, real-life contexts, and public-private-people partnership* (PPPP). The outcome would be a new academic definition of Living Lab concept in rural context. Given the fact that the intrinsic nature of Living Lab is participatory, the task was built strongly with

a bottom-up approach. **A set of offline and online Survey helps us to make the best interpretation about and reflection on the Rural Living Lab definition**.

In WP3 **LIVERUR** Partners follow a guideline in order to understand the RLL approach in all aspects: the advantages and impacts of the Rural Living Labs. One of the main objectives of the data collection in T3.1 Task was a *learning process*. Some project partners confirmed that they learnt a lot about **the Rural Living Lab scheme and operational mechanism** from the desk-research and/or data collection from the stakeholders (see D2.1).

Design/methodology/approach – *First, it is explored how Living Labs have emerged, at the intersection of Governance model, Open innovation and User-involvement in real-time product/ service development. It is then suggested that the Survey could be a complementary tool in Rural Living Lab definition*. In T3.1 this approach contains two main elements: **Living Lab impact at macro level, and Open Innovation at micro level** and their interlinks in relation of **Stakeholders, Real-time innovation and Early-stage user involvement particularly in Rural Circular economy.**

Findings – *The survey helped identify the most important elements: identification of the organisational structure, stakeholder segments, product and service portfolio, various business models, ICT infrastructure, methods etc. in order to learn from the Rural Living Lab cases towards long-term "sustainability.*

Originality/value – *This Survey will be of value to refine the next tasks in WP3. It could as well help living labs to reflect on how to set-up and keep a rural living lab alive.*

Keywords *Open innovation, Business models, Quadruple Helix model, Rural Living Labs.*

INTRODUCTION

LIVERUR project aims at bringing rural innovation along with high impact to the wide spectrum to **the agricultural activities, entrepreneurship, job creation, digital skills improvement, shared and circular economies along new business models and prototypes for better decision-making and community engagement.**

LIVERUR combines relevant rural topics (Agriculture, Tourism, Innovation, Energy & Environment, Food, Water, Mobility, Entrepreneurship, Social Innovation etc) for **future challenges in rural/remote/mountain areas** to give them real and sustainable perspectives in order not to force them to leave their living areas.

Why Living Labs?

We are collaborating on a unique initiative and open innovation approach (called Living Lab) providing knowledge transfer from our research results, reusable/ replicable methods and tools to carry out such a transformation (technological, socio-economic, human centric) for all partners in their targeted territories.

Living Labs are composed of heterogeneous actors, resources, and activities that enable and support innovation at all phases of the lifecycle, and all are collaborating for creation, prototyping, validating, and testing of new technologies, services, products, and systems in real-life contexts.

Why Rural Living Labs?

LIVING LAB is an instrument (open lab & tool & methodology) **to develop products, services , physical and virtual networks/ systems, based on the economic & social needs of people**. The Living Lab have unique **technical and socioeconomic influences and benefits to the targeted communities (users & stakeholders) in urban, peri-urban and rural level.**

In order to specify **the Rural Living Lab**, the RLL aiming at the development of **integrated technical and social open innovation** and simultaneously promoting the conditions of **sustainable development** (highest resource efficiency, highest user orientation, attractive and adaptable business models, Quadruple Helix governance etc.) in rural context. This approach allows **the development and testing of sustainable technologies improving the rural innovation at local, regional and cross-border level, while putting the user on centre stage in real life conditions.**

The research conducted in Rural Living Lab is innovative in several respects. First, it may contribute to **rural market innovation by producing breakthroughs in sustainable technologies** that will be easy to install, **user friendly and that meet environmental performance standards** *in real life*. Second, research from **Living Lab may contribute to rural innovation in practice by pioneering new forms of in-context, user-centred research, including long-term and cross-cultural research in rural circular economy** with added value in **socio-economic aspects**.

OBJECTIVES

By the DoW of **LIVERUR** in WP3 Task 3.1 is about “Definition of living lab concept in rural areas and identification of existing rural living labs (RLL)”.

A Rural Living Lab survey in T3.1. was designed **to establish basic information about the rural living lab phenomenon**. The further work on establishing new rural living labs within **LIVERUR** project lifecycle may include **the clear understanding of Rural Living Lab by its definition and main characteristics**. Mainly WP2, WP3 and WP4 give insights about the Rural Living Lab methodology implementation which should contain the preparation of technical infrastructure and platform deployment, the creation of local user communities and engaging them in the experimentation and evaluation process, the development and user-driven validation of collaborative applications, and the elaboration of business models for future sustainability. Each LIVERUR work packages (WP4, WP5 and WP6) could benefit from the key insights of WP3 T3.1. Rural Living Lab Database.

Across the living labs settings in the selected rural areas in Europe and beyond the point of departure are highly different as regards **available infrastructure, knowledge and experience, objectives of rural stakeholders and their support to the living labs activities**.

The Deliverable 3.1. offer a set of questions (30 questions) that were contextualized according to the basic needs and objectives of every rural living lab setting. The assessment of the database is based on a semantic analysis methodology and the main references of the Living Lab`s academic literature.

Lead Partner: TRA. **The Consortium role**: It was requested the contribution from every partner (except CEA as they had not allocated MM in T3.1) according to their expertise. Predominant role is

given to scientific partners (CESIE) and especially those with social inclusion and expertise regarding the different financing schemes (AWI, ZSI), entrepreneurial expertise (IED), territorial analysis expertise (AWI) or social innovation expertise (ZSI).

All the partners made data collection within the timeframe (17th of September until 8th of November 2018 feedback - from the territories as well as best practices examples of Rural Living Labs. 22 partners of 23 filled up the Survey of 30 questions (Part I and Part II) by online or sent back their surveys offline for further analysis.

It was expected to receive **5-5 filled Surveys on operational (not former) Rural Living Labs from their own territories by desk research and/or interviews**. In case of lack of sufficient numbers of still operational RRL cases in their countries, it was allowed to collect data from all over the world. The task leader gave individual supports to everyone, **a guideline, one fully filled survey as sample, a Declaration of Consent, an Information sheet on Consent, shared Google docs** from the updated results in the entire data collection period and direct links to the online surveys

1 WHAT IS LIVING LAB? IS IT A SINGLE DEFINITION? WHAT IS MEANING IN CIRCULAR ECONOMY AND RURAL CONTEXT?

1.1 Definition of Living Labs - Overview

'Living Lab' refers to a **user-centered, open-innovation ecosystem**[1] or a systematic approach, co-created by users, integrating research and innovation processes. According to the definition given by Professor William Mitchell (MIT), a Living Lab represents a user-centric research methodology for sensing, prototyping, validating and refining complex solutions in multiple and evolving real life contexts. The idea of a Living Lab has prevailed in Europe since 2005 and at present several Living Lab descriptions and definitions are available from different sources[2].

Living Labs often **operate in a territorial context** (e.g. city, agglomeration, region, rural/remote/ mountain areas)[3], integrating concurrent research and innovation processes within a **public-private-people partnership**[4]. Living Labs are also recognized as a multi-contextual research approach utilizing existing technology, which is **closed to the market in order to develop community-driven innovation.**

The Living Lab emphasizes **the involvement of users in the early stages** of research and development and innovation processes. In Living Labs, **users contribute to product/service innovation actively and continuously, as based on their social and cultural experiences. It can be said that Living Labs facilitate regional innovation in a global framework.** The differences distinguishing the Living Lab from traditional experimental tools lie in the **multiple aspects and outstanding ability to interact with users that the Living Lab approach provides.**

Through the Living Lab, researchers/innovators are able **to observe and understand user behavior patterns,** even those that are not immediately obvious. A Living Lab helps bridge **the gap between the conception of a company and that of a current market, resulting in products more in line with the demands of end customers** (even end user can become a co-creation of innovation for products and services).

Their use can also help industries **reduce costs associated with making poor decisions in product/service development, and find new technological solutions to social, cultural and economic paradigms.**

1 H. W. Chesbrough, Open innovation: The new imperative for creating and profiting from technology. Boston, Mass.: Harvard Business Review Press, 2003.

2 A. Schumacher and B. Feurstein, "Living labs — a new multi-stakeholder approach to user integration," in Enterprise interoperability II, R. J. Gonçalves, J. P. Müller, K. Mertins, and M. Zelm, Eds. London: Springer London, 2007, pp. 281-285

3 S. Caird and R. Roy, "User-centric innovations in new product development: Systematic identification of lead users harnessing interactive and collaborative online-tools," *International Journal of Innovation Management* (IJIM), vol. 12, no. 3, pp. 327-355, 2008. doi: 10.1142/S1363919608002072

4 M. Pallot, *Engaging users into research and innovation: The living lab approach as a user centred open innovation ecosystem*, Webergence Blog, 2009. [Online]. Available: http://www.cwe-projects.eu/pub/bscw.cgi/1760838

1.1.1 The Key Principles of Living Lab

Westerlund and Leminen define living labs as “physical regions or virtual realities, or interaction spaces, in which stakeholders form public-private-people partnerships (4Ps) of companies, public agencies, universities, users, and other stakeholders, all collaborating for creation, prototyping, validating, and testing of new technologies, services, products, and systems in real-life contexts” (Leminen, 2013; Westerlund & Leminen, 2011)..

In the literature, Westerlund and Leminen (2014) have found that a living lab has been variously perceived. In order to better present the evaluation of the various Living Lab definitions from 2005. T3.1 regrouped the key principles of the Living Lab as:

What a Living Lab is?	The key principles of the Living Lab
Innovation ecosystem	*A regional system* (cf. Oliveira et al., 2006). *An innovation system* (cf. Ballon et al., 2005; Eriksson et al., 2005). *An ecosystem* (cf. Lievens et al., 2011; Schaffers & Turkama, 2012; Tang et al., 2012). *A network* (cf. Leminen, 2013, 2015; Leminen & Westerlund, 2012; Leminen et al., 2014a, *forthcoming*; Nyström et al., 2014)
A methodology	*A combined approach* (cf. Dutilleul et al., 2010) *A context or a methodology* (cf. Almirall et al., 2012; Bergvall-Kåreborn et al., 2009; Dell’Era & Landoni 2014; Mulder & Stapper, 2009;)
An environment with early user involvement in real time	*An environment with embedded technologies and users* (cf. Bajgier et al., 1991; Intille et al., 2005; Intille et al., 2006)
Private-Public-People-Partnership	*An enhancement or implementation of public and user involvement*, such as for rural innovations (cf. Schaffers & Kulkki, 2007), regional innovations (cf. Juujärvi & Pesso, 2013), smart cities (Ballon et al., 2011), enabler-driven or user driven innovations (cf. Leminen, 2013; Leminen et al., 2012a; Leminen et al., 2014a; Leminen & Westerlund, 2012), public–private partnerships (PPPs) (cf. Lepik et al., 2010; Niitamo et al., 2006), and a public–private–people partnership (4Ps or quadruple helix) (cf. Arnkil et al., 2010; Ferrari et al., 2011; Molinari, 2011)
An approach to improve the commercialisation of the market ready product/services	*A development project* for products, services, and systems (cf. Bajgier et al., 1991; Bengtson, 1994; Lasher et al., 1991) *A business activity and operational mode* (cf. Schuurman et al., 2012, Schuurman et al., 2013; Veeckman et al., 2013)

Table 1. The key principles of the Living Lab.

As such, living labs are used by *Quadruple Helix communities and for innovation* in urban/rural context as well.

1.1.2 Characterizing Living Lab

The definition above highlights **seven key characteristics of Living Labs:**

real-life environments	The innovation activities take place in *real-life environments* (cf. Ballon et al., 2005; Intille et al., 2005, 2006).
public-private-people partnership	*Public-private-people partnerships* (4Ps) are formed by the participants, which include companies, researchers, authorities, and users (cf. Westerlund & Leminen, 2011).
importance of users	The *importance of users*, including citizens and customers, is emphasized (cf. Ballon et al., 2005; Følstad 2008; Leminen, 2011).
different from testbeds, field trials, and other forms of innovation	They are *different* from testbeds, field trials, and other forms of innovation (cf. Almirall et al., 2012; Ballon et al., 2005; Bergvall-Kåreborn et al., 2009;). They feature innovations that are more mature than in-house R&D, where prototyping and field trials are more appropriate, but the innovations are less mature than would be found in pilot projects (Ballon et al., 2005).
multiple stakeholders	*Multiple stakeholders* are employed in living labs (cf. Ballon et al., 2005; Leminen et al., 2014b; Leminen & Westerlund, 2012; Westerlund & Leminen, 2011).
multiple roles	*Multiple roles* are pursued by stakeholders in living labs (Leminen et al., 2014a; Nyström et al, 2014).
collaboration between stakeholders	*Collaboration* between stakeholders is an essential feature of living labs, which are grounded in the principles of open innovation (cf. Leminen & Westerlund, 2012; Niitamo et al., 2006).

Table 2. The seven key characteristics of the Living Lab.

1.2 How we describe the Rural Living Lab

1.2.1 Five major key success factors

The **Living Lab methodology** enables technology prototypes **to be developed more in line with the market (TRL 6-9)**, while academic research can also be accomplished through the industry. Living Labs connect **product suppliers and end-users efficiently, creating synergy and reducing costs of making poor decisions in the product development process**.

The lessons learnt during the Living Lab process suggesting five major key success factors:

(1) high involvement of users,
(2) versatile forms of communication,
(3) effective conversion of tacit knowledge,
(4) the building of a multi-disciplinary team, and
(5) cohesion of stakeholders

Figure 1. Rural Living Lab chart.

Some of the lessons learnt during the last years of working on few RTD projects (such as C@R and CoreLabs that could help implementing this strategy are the following:

It is necessary to foster local innovation ecosystems where people needs are driving the Research and Development and Innovation activities; this could be framed by those **communities** that will clearly benefit from new approaches to innovation as a **social process.**

In fostering these innovation ecosystems it must be considered five key pillars: **Society, Market and industry, ICT, policies and infrastructures** that should be well defined, balanced and mutually aligned.
It is necessary to experiment and develop new forms of systemic innovation, which are

Sustainable and well balanced regarding a representative participation from the side of legal associations and **public-private partnerships**.

Creating strong networks of stakeholders can increase and catalyze the benefits of

Living labs as regards rural innovation, ensuring the necessary critical mass for its sustainability while considering jointly the impacts of a globalizing economy and local daily life needs.[5]

1.2.2 Rural Living Labs across the globe

In Europe, many organizations promoting the concept of the Living Lab have been established. The European Union has also shown its support of large-scale international cooperation projects through the implementation of the 6th/7th and H2020 Framework Programme.[6] [7]

5 Schaffer-Merz-Guzman-Navarro: Living Labs and Rural Development: Overview of the C@R project,eJOV, 2009
6 CORDIS: FP7, European Commission. [Online]. Available: http://cordis.europa.eu/fp7/home_en.html "FP6 final review: Subscription, implementation, participation," European Commission, Brussels, 2008 Available: http://ec.europa.eu/research/reports/2008/pdf/fp6-final-review.pdf.
7 FP6 final review: Subscription, implementation, participation," European Commission, Brussels, 2008.

In 2006, the European Network of Living Labs (ENoLL) began to offer a unique and efficient platform in initiating cross-border cooperation, and finding new project partners. To date, over few hundred Living Lab projects have joined ENoLL 8, including Living Labs from Europe, North – and Latin America, Africa, Australia and Asia. However, analysing the members of this network it is visible that rural living labs are not well represented. The **LIVERUR** contributes to such network by providing specific knowledge about rural areas in the world.

The LIVERUR project is the first Research and Innovation project under FP6/FP7 and H2020 which providing a worldwide repository of the operating Rural Living Labs.

The following map (Figure 2) illustrates the geographical location and data sources of T3.1. Rural Living Lab database.

Figure 2. Map of RRL database.

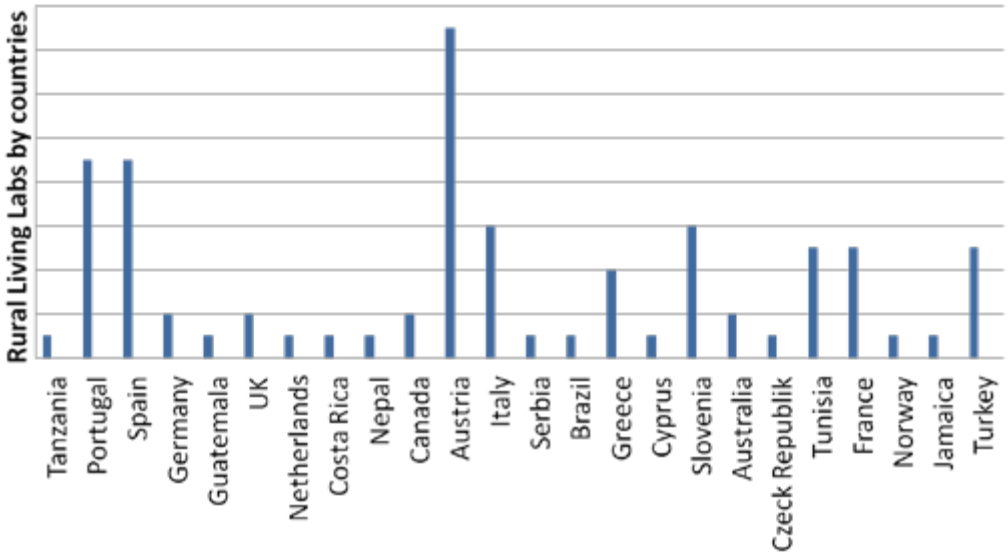


Figure 3. List of countries of RRLs in the LIVERUR database.

In a related question (Figure 3), when asked about the geographical location of the rural living lab, 24 countries were recognised.

Available: http://ec.europa.eu/research/reports/2008/pdf/fp6-final-review.pdf

8 The European Network of Living Labs: The first step towards a new innovation system, The European Network of Living Labs. [Online]. Available: http://www.openlivinglabs.eu

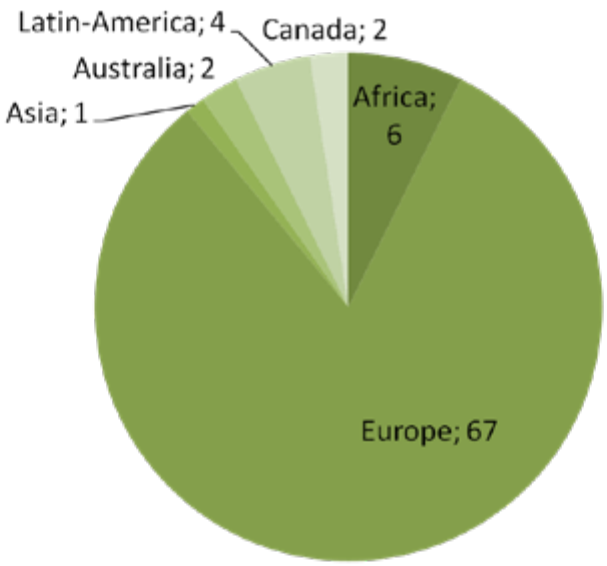
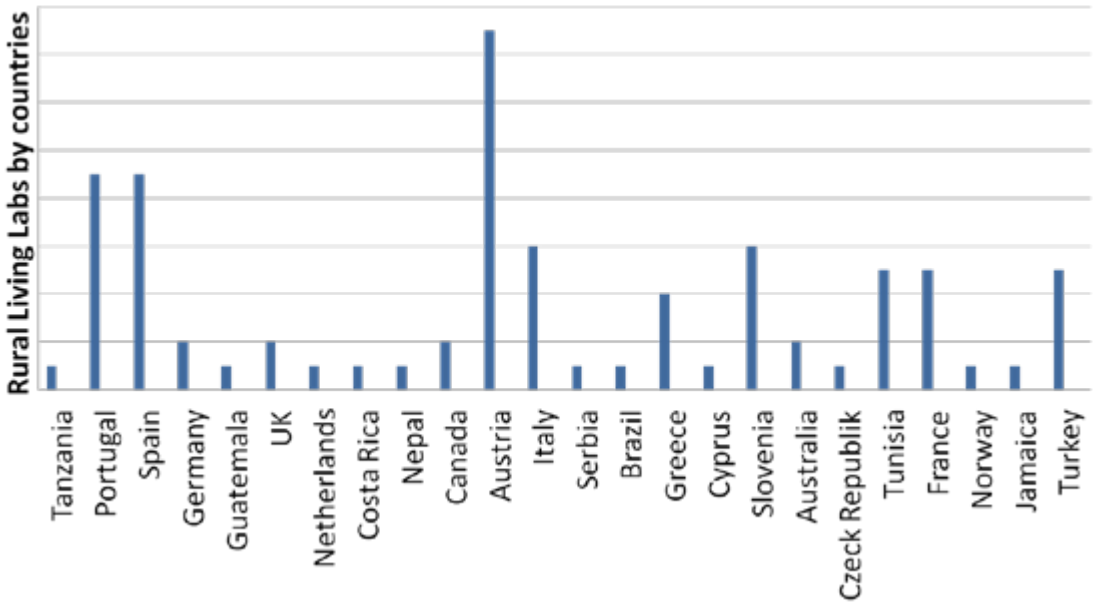


Figure 4. RLLs by countries.

The clear majority of rural living labs (77%) answered that they are located in Europe, the other 15 rural living labs (23%) have been established in other continents, like North-and Latin America, Africa, Asia and Australia (Figure 4).



CLEOPA	1 (joint)	1	1	1	1																			
TRA						1	1	1	1	1														
AWI											5													
ZSI											5													

ADRI			3																				
CESIE											1	1 (joint)	1										
IED														4	1								
UL																5							
E35											2	1 (joint)					2						
WRLS																		1					
DAR MARGOUM																			5				
ZSA/Latvia			1													1				1	1		
UHLAVA /CZ	1 (joint)			1		1																	
Zafer/TR																					1		
UCAM			4																				5
WTELECOM																							
UCT (supported by SOGESCA)											3									1 (joint)			
RMB										5													
FRCT																							
CAPdL									1											1 (joint), 3			
Total (82)	1	1	9	2	1	2	1	1	1	2	15	6	1	1	4	1	6	2	1	5	5	1	1	5

Table 3. Data collection of Rural Living labs by the LIVERUR partners from worldwide.

Respondents were then asked about the countries where the 82 rural living labs are located (Table 3), those labs from 24 countries has been assessed by 21 LIVERUR project partners, in 3 RLLs cases jointly. It means that or together or independently they assessed same rural living labs.

1.3 Rural Living Labs in the Circular Economy

1.3.1 Fostering open innovation through Rural Living Labs in the Circular Economy

The European Commission recently presented a new, ambitious circular economy strategy, in order to transform Europe into a more competitive resource-efficient economy, addressing a range of economic sectors (Katainen, 2015).[9]

9 KATAINEN J. (2015), Speech: Circular Economy: boosting business, reducing waste. Speech at the Circular economy stakeholder conference, Brussels, 25 June.

In rural context the implementation of the circular economy requires changes throughout **value chains, from product design to new business and market models, from new ways of turning waste into a resource to new modes of consumer behavior**. This implies systemic change and innovation in technologies but also in **organisation, society, finance methods and policies.**

Specific areas of intervention may include materials production and use, product design, distribution, consumption phase, public procurement, labeling and product information, waste management, development of markets for secondary raw materials (e.g. organic fertilizers), improving framework conditions in sectors such as sustainable chemical production, bio economy, food, construction, plastics, critical raw materials, water use, and improving cross sectoral cooperation, e.g. by the promotion of industrial symbiosis, repair and re-use and enabling **the development of new business models.**

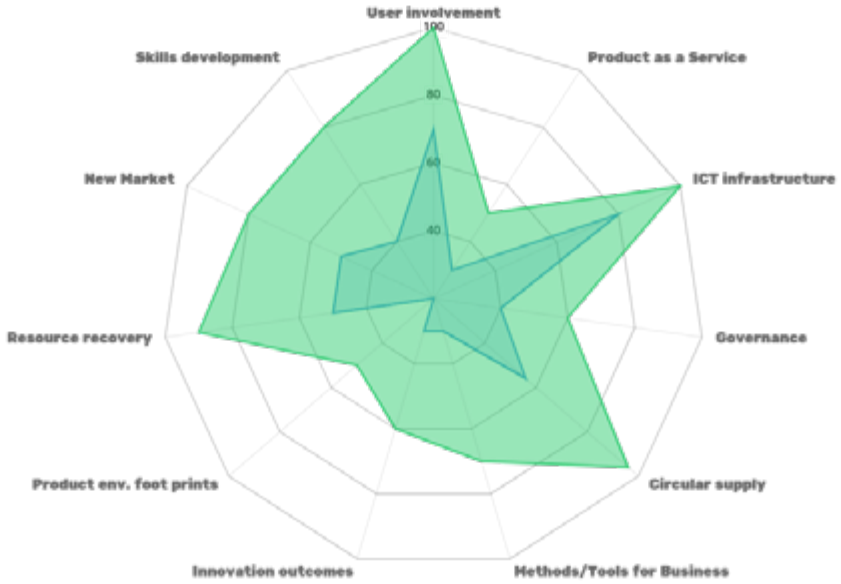


Figure 5. Circular Living Lab chart.

The Circular Living Lab chart (Figure 5) contains all the elements of the circular flow in the rural economy which includes the rural living lab specific infrastructure & tools & services, the optimal Governance model in the Quadruple Helix innovation and the required skills from the users & future costumers. **This complex approach is the first added value of LIVERUR project by the assessment about the potential of growth in the rural economies.**

1.3.2 How the "take-make-recycle" could be facilitated by Circular Rural Living Labs?

The **linear economy, which relies exclusively on resource extraction, is no longer a viable option. Circular Economy** aims at keeping t**he added value in products for its entire lifecycle and reduce waste by reusing parts that can be still create further value**. The objective is to move from "take-make-dispose" model to "**take-make-recycle**".

What can be the added value of the Rural Living Lab approach and impact into the rural circular economy?

The optimistic but realistic scenario should be based on four intertwined principles: **co-creation, trust, resilience and common values**. Co-creation in all sectors of society provides for manifold

opportunities to fully exploit it. **Co-creation builds on new forms of interaction among key actors in modern societies, involving citizens, the market and the state.** Collaboration between these actors should be organized to share information, knowledge and resources. Open data help to **co-create user-friendly, personalized and proactive services that lower the administrative burden and improve the user experience.**

The Survey (ANNEX 1) asked to select the used methods by the Rural Living Labs on the table of Question No. 26: **In which open innovation process phases are the users involved:** *front end (p-idea, p-concept) or in the back-end (p-development, market launch)?*

LIVERUR would also expect Open Innovation to be more prominent as framework for conceptualizing Living Labs. Living Labs should be able to **facilitate the process of exploitation** in small and large scale as well. Three Open Innovation processes of exploration, exploitation and retention (Lichtenthaler & Lichtenthaler, 200910 ; van de Vrande et al., 200911) can be considered in the circular economy:

Exploration: innovation activities to capture and benefit from external sources of knowledge to enhance current technological developments.
Exploitation: innovation activities to leverage existing knowledge or technological capabilities outside the boundaries of the organization.
Retention: maintaining, storing and reusing knowledge over time outside of an organization's organizational boundaries.

Besides the word **exploration** itself, we considered words such as **experimentation, study (of user behavior), testing, as indicators of exploration goals**. For **exploitation**, we regarded words and phrases like **'creating initial demand', adoption, technology transfer, implement, and business models** to refer to an exploitation goal. For **retention**, indicators such as **knowledge and information sharing, multi-stakeholder communication and rethinking** could be used.

1.3.3 Why LIVERUR project is a pioneer in the paradigm shift: linear vs. circular?

The model of Circular Economy Living Lab exists in Urban Context by now, but not yet in Rural context.

How we can describe and gives definition of Circular Rural Living Lab?

In order to give the most comprehensive definition about the main mission of the Circular Rural Living Lab, we have to understand the cycles of the natural world, a global change of "from the closed/isolated structure to open ecosystem".

The Open Source Circular Economy (OSCE) Days are organised since 2014 accross the globe, OSCE gave a new context and a new mission statement for a solution how to use open labs for product and service developments, open access for users & global alliances and the usage of **Open Source in the Circular Economy**, because as they say: **Circular Economy is much more than recycling.**[12]

10 Lichtenthaler, U., & Lichtenthaler, E. (2009). A Capability-Based Framework for Open Innovation: Complementing Absorptive Capacity. Journal of Management Studies, 46(8), 1315-1338
11 Van de Vrande, V., De Jong, J. P., Vanhaverbeke, W., & De Rochemont, M. (2009). Open innovation in SMEs: Trends, motives and management challenges. Technovation, 29(6), 423- 437.
12 https://community.oscedays.org/t/solution-how-to-equip-a-citizen-open-lab-with-the-circular-economy/268

“One way to illustrate the circular economy is to think of cycles in the natural world. A simple representation might be a seed, which grows in nutritious topsoil, becoming a strong adult tree – its body will eventually decompose to become part of the nutrient source for more trees to grow. But this paints too tidy a picture – living organisms have developed a vibrant, diverse ecosystem over billions of years, and it doesn’t work in tidy closed loops.

There are thousands of processes occurring in this simple picture – life cycles of bacteria, insects, and fungi, weather patterns, fruiting and pollination, competition with other organisms – the tree is constantly interacting with these systems and processes, all with their own inputs and outputs, and it’s the combination of *all of them* which produces a sustainable ecosystem. Similarly, when we think about design and manufacturing, **it’s extremely unlikely that individual companies can construct perfect processes in complete isolation**, where the components of just two or three elegantly designed products feed each other’s production cycles in a balanced, neatly closed loop. This is an immensely difficult, illogical way of designing a circular economy.

We need to look further afield, for outsider perspectives. We need **collaboration and open standards** across countries and industries. We need **transparency** in manufacturing processes and material production. We need **products that can be understood, taken apart and repaired. We need to share knowledge of how resources flow throughout our system.** And when good solutions are developed, we need to be able to use them, to build upon them, and to improve them, for the benefit of our planet and our society.”13- it comes from the Mission Statement of OSCE Days, as some key parts of the explanation.

13 https://oscedays.org/open-source-circular-economy-mission-statement/

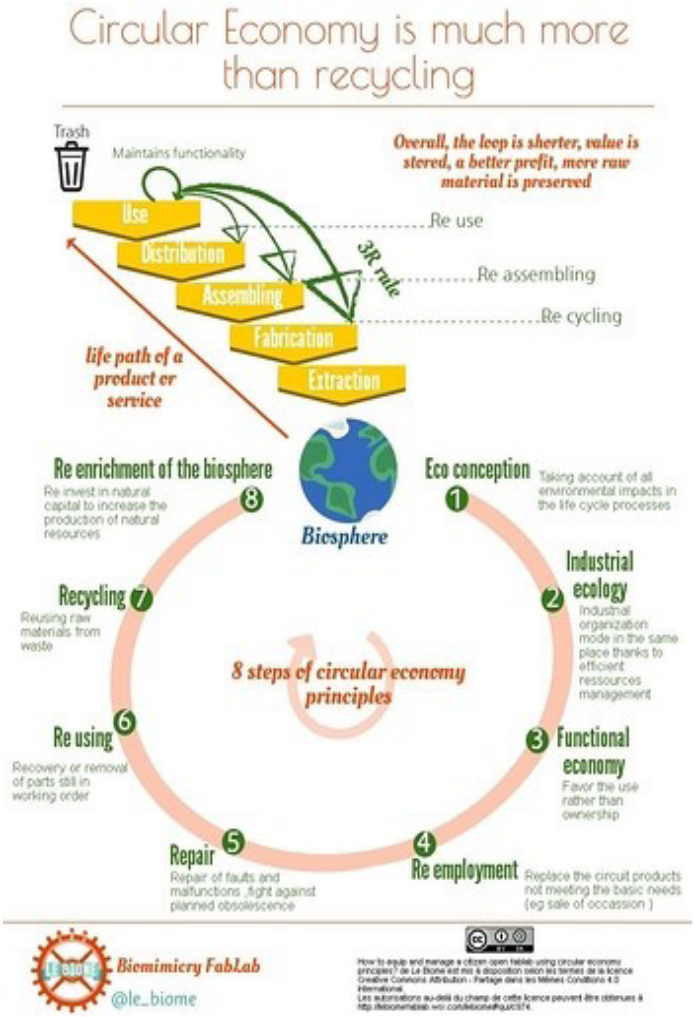


Figure 6. Circular Economy is much more than recycling (Infographic). Author: Xavier Coadic.[14]

LIVERUR share the vision of a circular economy with OSCA Days community: "**An idea for a truly sustainable future** that works without waste, in symbiosis with our environment and resources. A future where every product is designed for multiple cycles of use, and different material or manufacturing cycles are carefully aligned, so that the output of one process always feeds the input of another. Rather than seeing emissions, manufacturing byproducts, or damaged and unwanted goods as 'waste', in the circular economy they become raw material, nutrients for a new production cycle." **Circular Rural Living Labs will offering all the use cases, design, testing, evaluation and training tools, methodologies, experimentation sites in real-life context, circular rural business models and an open web based platform with OS data access. Circular Rural Living Lab will support any types of entrepreneurs, social & business partnerships in all regional and local rural territories through an user driven open innovation value chain. They will be the main drivers in conceptualisation of new products and services since early stage until their "ready to market" final phase. In order to taking this holistic approach to general understanding how different systems such as disruptive technologies (IoT,Big Data, AR, AI or robotics, Blockchain) can interact at the same regional and local innovation ecosystem, LIVERUR will get to grips with the challenges we're facing, LIVERUR will share "learning by doing" experiences, inspirations and a MOOC based rapid learning system openly within and beyond the future 13 Circular Rural Living Labs , by their various profiles to be interoperable, replicable and reusable all over the world.**

14 Xavier Coadic is Large Human Collider, biohacker, Biomimicry hactivist , www.lebiome.github.io, https://community.oscedays.org/u/Xavier_C/summary.

2 KEY ELEMENTS OF THE RURAL LIVING LAB - QUESTIONNAIRE (Part 1 and Part 2)

2.1 The main structure of the quiestionnaire

In **LIVERUR** we are targeting sustainable impact towards the rural socio-economic environment, it is essential to have an integrated, holistic view on the existing Rural Living Labs. RLLs are **the main drivers in technology development, user validation and deployment of solutions within a context of business and social innovation** in rural/remote and mountain areas. This requires a close **interplay between business actors (MSMEs), policy makers and rural users within the process of open innovation.** The actors (target users and beneficiaries) are **interacting through local/regional and cross-border innovation ecosystems** tailored to the demands and challenges of rural development. **Rural users and stakeholders are jointly developing and implementing innovations to accelerate socio-economic development.**

This task summarizes by the identification of existing examples how rural living labs are differentiated on the basis of three main characteristics (Almirall and Wareham, 2008)[15]: u**ser involvement, real-life contexts, and public-private-people partnership (PPPP)**. The outcome is a clear and standardize definition of Living Lab concept. Given the fact that the intrinsic nature of LL is participatory, the task will be built strongly with a bottom-up approach.

The main structure of the Questionnaire in T3.1 refers to the main 5 characteristics and interactions in Rural Living Labs innovation ecosystems as Fig 2 describe it.

Those are:

I. Small business networks, partnerships, linkages refers to: **Identification of the Rural Living Lab**
II. Business climate, entrepreneurial conditions refers to: **How does the Rural Living Lab work?**
III Infrastructure/conditions/education refers to: **Rural Living Lab ICT Infrastructure**
IV. Government actions (local/regional) refers to: **Methods & Tools**
V. Stimulating demand for new services: **Products/Services**

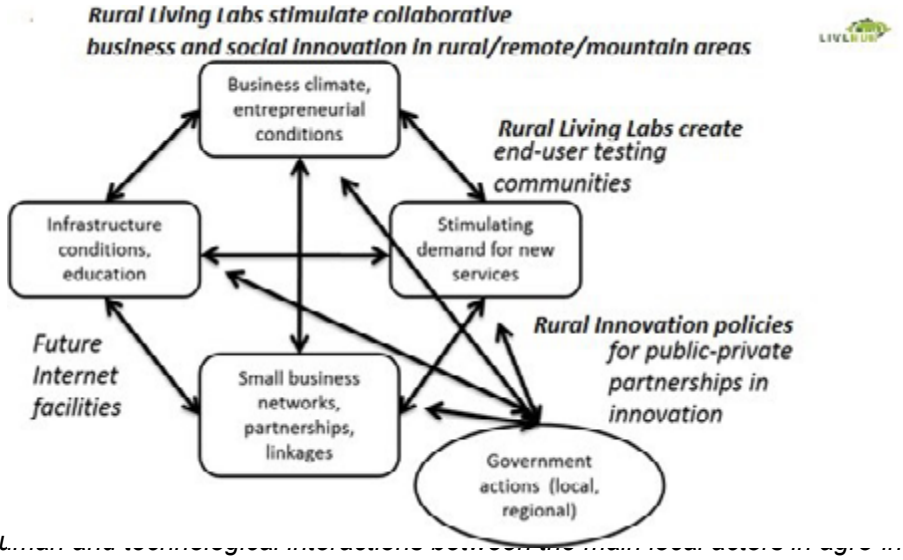


Figure 7. Human and technological interactions between the main local actors in agro-industry by RLLs. Author: Tunde Kallai.

15 Almirall, E., & Wareham, J. (2008). Living Labs and open innovation: roles and applicability. The Electronic Journal for Virtual Organizations and Networks,10(3), 21-46.

Key elements of the Rural Living Lab	Survey Part I-Part II
Identification of the Rural Living Lab	1) What is the Living Lab social constituency? Name and geographical location 2) What is the LL rural / agro-industrial constituency? 3) Who are the stakeholders of the Rural Living Lab? 4) What's the role of the different stakeholders? 5) What is the Rural Living Lab infrastructure? 6) What's the main focus of the Rural Living Lab?
How does the Rural Living Lab work?	7) What is the business model of the Rural Living Lab? What's the benefit of the Rural Living Lab? 8) How this benefit is generated (Product/Market Strategies)? 9) Earnings of the Rural Living Lab 10) How is the Rural Living Lab financed? 11) Who runs the Rural Living Lab? 12) What is the Living Lab legal entity and who are the owners? What is the legal framework of the Living Lab? 13) What is the governance structure of the Living Lab? 14) What are the approaches used to involve citizens in LL activities? Are community-like approaches used to enable self organized peer-to-peer LL stakeholders' interaction? 15) Duration of the Living Lab? 16) Openness? 17) Future perspectives of the Living Lab regarding..
Products/Services	18) Which products/services are offered within the Rural Living Lab? 19) What's the target market of the Rural Living Lab? (line of business) 20) Is the Rural Living Lab only Regional orientated or International orientated?
Rural Living Lab ICT Infrastructure	21) Are there any providers involved? Which one? 22) Which technologies are implemented in the Rural Living Lab? 23) How is the ICT infrastructure operated, maintained and developed? 24) Is the ICT infrastructure open to the different stakeholders?
Methods & Tools	25) Which Methods and Tools are used in the Rural Living Lab to integrate the end-user into the following product/service development process 26) In which process phases are the user involved? (front end (p-idea, p-concept) or in the back-end (p-development, market launch)[1] 27) Other Methods not mentioned 28) Which Methods are used to integrate the customer into the Rural Living Lab? 29) Does the Rural Living Lab use any Data preparation Tools (statistical Tools)? Which one? 30) Any smart ICT apps which could be interesting for the LIVERUR Community?

Table 4. Structure of the T3.1 RLL Survey.

1 Table of questions is attached to Annex 1

2.1.1 Rural Living Labs as a tool to open innovation in rural context

Rural Living Labs provide useful and measurable approach by its architecture, methodology and tool for establishing open innovation in rural context. They should investigate as networks, because open innovation has a similar role based on voluntary participation and every participants (Chesbrough & Crowther, 2006[16]; West, Vanhaverbeke & Chesbrough, 2006[17]).

The participatory aspect is so important factor, responsible for start & progress in the rural living lab activities.

At the same time with open innovation principle, **rural living lab demonstrates on individual or common ideas concept as a resource in innovation**. This approach supports innovation procedures which leads to usable services & products, as in a living lab process, researchers, companies, users, governmental partners & technological beneficieres are cooperating in real world environments (Bergvall-Kåreborn et al., 2009[18]). Bergvall-Karebornetal (2009) express the difference between the living lab and open innovation table (1) in 3 item.

This difference helps us to understand the main impacts of Living Labs at Macro level and the Open Innovation`s impact at Micro level. At same time the differences between Rural Living Labs and Open Innovation.

Open Innovation is a new paradigm based on a **Quadruple Helix Model** where government, industry, academia and civil participants work together to co-create the future and drive structural changes far beyond the scope of what any one organization or person could do alone. This model encompasses also **user-oriented innovation models to take full advantage of ideas' cross-fertilisation leading to experimentation and prototyping in real world setting** (di Valdarberom and B. Birnbaum, 2017)[19].

Living Lab	Open Innovation
Business to consumer with a clear focus on user involvement	Business to business
Focus on the product/service	Focus on the business model
External input in the whole innovation process	External input focuses on ideas and technology

Table 5. Living Lab compared to Open Innovation.

2.1.2 How the Rural Living Labs fostering the regional/local open innovation?

The concept of Rural Living Labs in closely related to the concept of open innovation as we mentioned. Although the established view of open innovation is innovation in cooperation with other end-users and potential customers (farmers cooperatives or local agro-companies or civil organisations), thus making the end-users and potential customers more open to external knowledge and ideas , we extend the concept in **LIVERUR to innovation happening in collaboration with society: democratic innovation, and innovation though mass collaboration in rural/remote and mountain areas.**

16 Chesbrough, H., Crowther, A.K., 2006. Beyond high tech: early adopters of open innovation in other industries. R&D Management 36 (3), 229–236

17 Chesbrough, H., Vanhaverbeke, W., West, J., 2006. Open Innovation: Researching a New Paradigm. Oxford University Press, London.

18 Bergvall-Kåreborn, B., Ihlström Eriksson, C., Ståhlbröst, A., & Svensson, J. (2009, December). A milieu for innovation–defining living labs. In 2nd ISPIM Innovation Symposium, New York (pp. 6-9)

19 "Towards a New Economy: Co-creation and Open Innovation" by di Valdarberom and B. Birnbaum published in 2017 in the book chapter of "Crowdfunding for sustainable entrepreneurship and innovation" edited by W. Vassallo (IGI Global, Hershey).

The idea of innovation should originate from end-users, who are considered as a source of innovation and creativity. Innovation reminds sometimes of the parable of the new wine in old bottles. Somehow, we are supposed to create innovation and still work the usual way. Using new sources of creativity, though, may require us to use new procedures, processes and styles of communication and interaction. In the case of Rural Living Labs, it means changes in the way of interacting, communication and working. In the Living Labs the roles of developers and users change, creating innovation in the rural environment (Zurita & Kallai, 2009)[20].

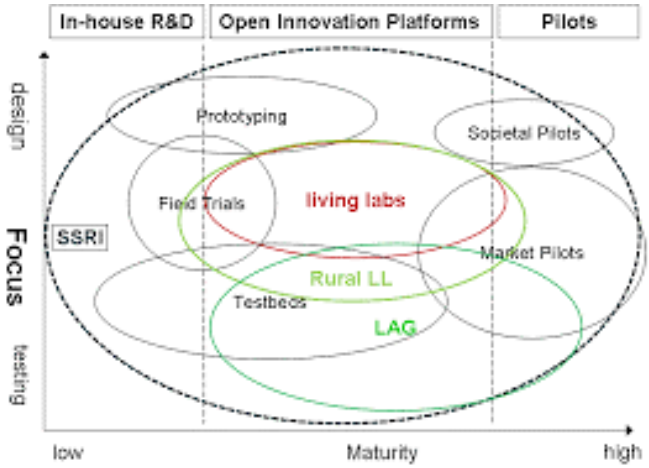


Figure 8. Living Labs for Rural Development by the C@R project.

20 Rural living labs- user based innovation for the rural areas L. Zurita1 and T. Kallai (EFITA Conference paper, 2009)

3 RURAL LIVING LABS DATABASE ANALYSIS

3.1 Methodology to collect data for Rural Living Lab database & guideline

Methodology: Mainly desk research and/or data collection from local/regional development agencies, LEADERS groups, agricultural communities (NGOs, cooperatives), university research groups.

Gantt chart of T3.1.

WBS	Tasks	Task Lead	Start	End	Duration (Days)	% Complete	Working Days	Days Complete	Days Remaining
1	Task 3.1Definition of living lab concept in rural areas and identification of existing rural living labs (RLL)	TRA	9.17.18	11.30.18	73	0%	55	0	73
1.1	Launch the Survey Part 1 and Part 2		9.17.18	10.30.18	43	0%	32	0	43
1.2	First draft of D3.1		10.30.18	11.17.18	17	0%	14	0	17
1.3	Peer review		11.17.18	11.25.18	8	0%	5	0	8
1.4	Final version		11.25.18	11.29.18	4	0%	4	0	4
1.5	Submission of D3.1		11.29.18	11.30.18	1	0%	2	0	1

Table 6. Gantt chart of T3.1.

Timeschedule:

Date to Launch the Online Questionnaire Part I and Part II: 17th of September 2018

Deadline to send back 5/5 Questionnaires by ALL Partners: 30th of October 2018 (extended deadline: 8th of November.2018).

First draft of D3.1: 22th of November .2018

Peer review: 22th of November.2018 – 28th of November 2018 (by AWI, ZSI and

Final version: 29th of November.2018

Submission of D3.1: 30th of November 2018.

In case of difficulties to access to the Online Survey, a Word template was available.

In case of offline work, it has a request to send back the doc files by the following format:

T3.1 _ partner short name_ RLL Case 1, T3.1_ partner short name_ RLL Case 2

T3.1 _ partner short name_ RLL Case 3. T3.1 _ partner short name_ RLL Case 4

T3.1 _partner short name _ RLL Case 5

All Partners received invitation to access to the online survey Part I and Part II. on 17th of September.2018. Additionally All Partners received the T3.1 Guideline how to fill up the Questionnaire and the T3.1 Questionnaire (composed by Part I and Part II) on Word format by email and a fully filled Survey from TRA as a sample. (More: in ANNEX 2).

3.2.1 Detailed Rural Living Lab database analysis

The **LIVERUR Rural Living Lab** survey was designed to establish basic information about the rural living lab phenomenon, which was 'born in the USA' but developed in Europe and beyond under the aegis of the European Network of Living Labs (ENoLL).

As of 8th of November 2018, when the survey was completed, there were 86 rural living labs presented from 24 countries in existence from all over the world.

In the different rural living labs the T3.1 task leader (TRA) and All Partners aimed to identify and study the different context variables that need to be taken into account to assess the open innovation environments. Emphasis of ICT-based innovation in these Rural Living Labs is on the domains of **life, work and leisure in rural and remote areas**, including the improvement of collaboration environments and the related business processes. More and more **on the creation of new products and services for the mass market** by active user involvement is in the middle of the assessment criteria. Therefore, **users and stakeholders of the rural Living Lab are those who are involved in creating innovation initiatives and in improving collaborative work and business processes.**

In the Rural Living Lab Database (Table 6) green color means the filled offline and online surveys.

Rural Living Lab Database (to T3.1)

LIVERUR partner	Rural Living Lab Name / Country No1	Rural Living Lab Name / Country No2	Rural Living Lab Name / Country No3	Rural Living Lab Name / Country No4	Rural Living Lab Name / Country No5	Rural Living Lab Name / Country No6
CLEOPA	Smart Farming LL Tanzania	Smart Seia Mountains Living Lab (PT)	Living Lab Campiña de Jerez (Spain)	Living Lab Digital Villages (Germany)	MIT D-Lab (Guatemala)	
TRA	Agroecosystem Living Lab of Rothamsted Research Centre (UK)	Living lab on behavioural change (Netherlands)	Ramcho Mastatal Permaculture Living Lab (Costa Rica)	Rural Innovation Lab (Nepal)	Living Lab en innovation ouverte (LLio) (Canada)	
AWI	Verband der Naturparke Österreichs (AT)	Agro Innovation Lab (AT)	Gutshof Heidensand (AT)	Weinviertler Ideenpool (AT)	OTELO (AT)	
ZSI	Murauer Energiezentrum (Austria)	Arche Noah (Austria)	KEMR Unteres Traisental (Austria)	Green Tech Valley (Austria)	Mobility Lab Upper Austria (Austria)	
ADRI	Smart Tourism Living Lab of Zumaia (ES)	RLL Pireneus (ES)	RLL Subbética Cordobesa (ES)	RLL GDR Valle del Guadalhorce (Málaga, Spain)	RLL GDR Sierra de las Nieves (Málaga, Spain)	RLL MENDINET (Álaba, Spain)

CESIE	Acadia LL (Canada)	Madonie LL (IT)	Climate Smart Villages (Northern Vietnam – Philippines)	PA4ALL (Serbia) (jointly filled with E35)	LabTAR (Brasil)	Co-Creation Hub (Nigeria)
IED	RLL of Centre for Research & Technology Hellas	RLL of Institute of Agricultural Research of Cyprus	RLL of Institute of Technology of Agricultural Products	RLL of Greek Agriculture Organization	RLL of Mediterranean Agronomic Institute of Chania	
UL	Padna (SLO)	Slovenske Konjice (SLO)	Kungota (SLO)	Logarska dolina (SLO)	Žalec (SLO)	
E35	Lunigiana Amica (Italy)	Limestone Coast Read Meat (South Australia)	PA4ALL Living lab in Precision Agriculture (Serbia) (jointly filled with CESIE)	LL Presidio territoriale Piattella Canavesana of Piedmont region (IT)	Blue Mountains LL (Australia)	
WRLS	Living lab Helsinki (Finland) https://rural-urban.eu/living-lab/helsinki	Living Lab Ede (Netherlands) https://rural-urban.eu/living-lab/ede	Lucca (Italy) https://rural-urban.eu/living-lab/lucca	Tukums (Latvia) https://rural-urban.eu/living-lab/tukums	Living Lab WIRELESS INFO (Czech Republic)	
DAR MARGOUM	ECO FARM de Mornag ecological lab, Tunisia	Acacias for all lab, Tunisia	DAR HLIMA lab, Tunisia	EL Mensej Lab, Tunisia	TNAGEM Kerkennah, Tunisia	Jinen Nefzawa, Tunisia
ZSA / Latvia	CIMLAB Caraïbe Innovation Martinique Living Lab (Martinique, France)	Agro Living Lab, Seinäjoki (Finland)	RuraisLAB GALICIA Living Lab (Spain)	Fredrikstad living lab for tourism and innovation (Norway)	T- Lab - Laboratory of Tourism Potentials (Slovenia)	
UHLAVA / CZ	Digitales Dorf Bayern in Spiegelau und Frauenau (Germany)	Manchester Cycling Lab (UK)	Smart Farming LL Tanzania	POMOC Tyn nad Vltavou (Czech Republic)	Jamadda Permacultural Park (Jamaica)	
ZAFER / TR	Invest4Land (Turkey)	S.S Dalbahçe Agricultural Development Cooperative (Turkey)	S.S Tariş Raisins Agricultural Sales Cooperatives Union (Turkey)	S.S Manisa Viticulture Research Institute (Turkey)	S.S Çamönü Agricultural Development Cooperative (Turkey)	
UCAM	Birdcenter Bird Living Lab (ES)	Guadalinfo Living Lab (ES)	Richwater (ES)	Alma Natura (ES)	ADISMONTA (ES)	
WTELECOM	BEIA Living Lab (Romania)	Penela Living Lab (Portugal)				

UCT (supported by SOGESCA)	Cooperativa Aurora LL - Magione - Perugia (IT)	Lab Innovation Territorial Auverge Rhone Alpes (FR)	PUCCIARELLA LL; Magione - Perugia - Umbria (IT)	Living Lab of Passignano sul Trasimeno (IT)		
RMB	Living Lab Vorarlberg - Fabrik der Zukunft (AT)	Living Lab - Energetikum - FH Pinkafeld (AT)	Living Lab Metropolitan Area of Styria (AT)	Greissler. Plus - ICT Platform for Local supply in Rural Areas - (Pilot project FH Technikum Vienna) (AT)	Das Erlebnisparadies Südburgenland (multisektoral cooperation of 50 SMEs in South Burgenland) (AT)	
FRCT	Go-On Incubator - Nonagon (PT)	Regia-Douro Park (PT)	I9 – INOOVE (PT)	Brigantia-EcoPark (PT)	IPN-Incubadora (PT)	i-Dahna Food Accelerator LL (PT)
CAPdl	Living Lab Terre et Cité (FR)	Ferme du Bec Hellouin LL (FR)	LAURA Living Lab (FR)	RLL Victoriaville on Quebec (Canada)	LIT grandes cultures Auvergne Limagne (FR) Jointly with UCT)	

Table 7. FInal RLL database.

Main activity areas of the collected Rural Living Labs

Type of activity	Europe	Africa	Australia	Latin-America	Canada	Asia
Agriculture (production/processing)	X		X		X	
Forestry	X					
Sustainable (eco) Tourism	X	X	X	X		
eInclusion	X					
Emergency system	X					
eGoverment	X					
Circular Economy	X			X		
Fishery	X	X				
Craft		X				
Social Innovation	X				X	
Gender issue	X					
Health services	X					
Green transport/mobility	X					
Natural heritage /nature parks in rural/ remote /mountain areas	X					
Ecological/ organic farming	X	X		X		
Social farming		X				

Trading, logistics, supplementary services	X					
AgTech (IoT, Big Data, Smart Farming)	X					
Bio-production engineering	X					
Renewable energies	X			X		
Environmental services/tech	X		X	X		
ICT/digital services	X					
Ambient Assisted Living	X					
Seed bank	X					
Eco-school				X		
GreenTech Valley	X					
Social entrepreneurship	X					
Growth of herbs (medical/cosmetics/ aromatic)	X					
Agro-ecosystem	X					
Clean Tech for housing				X		
Incubator for small businesses	X					
Leisure park: Sport, culinary: recreation	X					
Makerplace						X
Behavioural change	X					

Table 8. RLL database by activities.

Table 7 demonstrate which area or domain best describes the activity (or activities) of the rural living lab. The respondents had to choose a single domain to describe their activity and perhaps those living labs who operate across several domains selected the most representative domains in which they work.

Several said that they have “activities in many domains and classified themselves as “Regional and Territorial”. Several domains that were given by living labs included: “Agriculture”, “Agro industry”, “Sustainable Development”, “Environmental Policies and Practices”, “Rural collaboration and support to SMEs”, “Rural territory development” , “Social innovation”, “eService provisioning for rural communities”, “eco-housing”, “eco-tourism” and “innovation techniques for organizational transformation” among the others.

3.2.2 Rural Living Lab survey results

The following sections present the results of the survey.

LIVERUR RLLs Database statistics: **The number of RLLs based on the list received from the LIVERUR partners is: 100. The number of filled offline and online surveys is: 86**, online survey: 41 (2 cannot be identified, **39 valuable**), offline survey: 54 (**47 valuable**, 6 duplications - online/ offline).

Final number of Rural Living Labs: 82. The response rate is: 86% . The number of the listed countries: 24.

3.2.2.1 Who are the stakeholders of the Rural Living Lab?

The question about the governance model of RLL gave a large variety by the RLL stakeholders.

Historically living lab innovation has engaged legal entities (government and private entity or research institute and private entity) and it **has been characterised as a linear process**, driven and controlled mainly by the industrial developers of products for the marketplace.

Today, more and more it is evolving **from a linear model towards a network model** involving partners supporting innovation, often focused on cycles of innovation activity. These partnerships of interaction can take many forms but one model that is increasingly being used is a triple-helix model engagement, where the three types of stakeholders are **industry, government and Academia**, often also called academic-public-private partnerships.

The newest is **quadruple helix model, where the industry, government, Academia and civil community partnership forms a private-public-people-partnership (PPPP)**. The majority of those who gave 'Other' (25%) as an answer for the legal status of their lab were labs formed as public-private-academic-people partnerships, under or the triple-helix or quadruple helix model.

This question was about the governance structure of the rural living lab. They are governed by a mixture of public sector organisation and private companies of some kind, but the primary purpose for asking respondents this question was to learn **about the degree of penetration of triple-helix and quadruple helix partnerships in the stakeholder mix for living labs operational activities.**

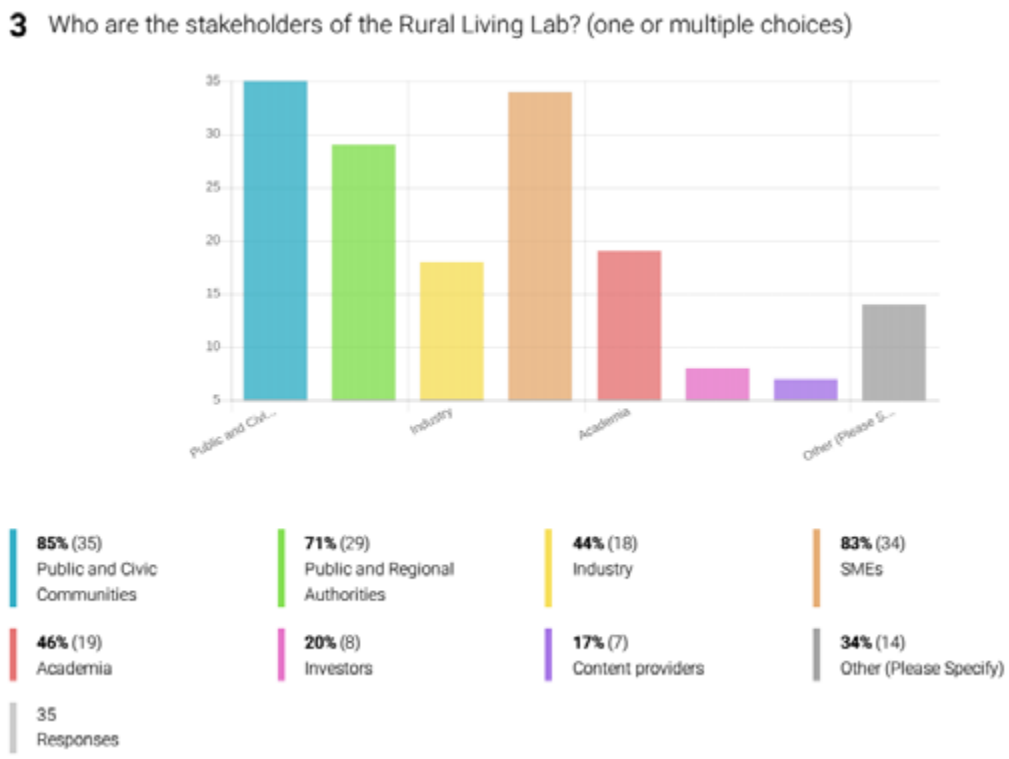


Figure 9. Major stakeholders in Rural Living Labs.

3.2.2.2 What is the Rural Living Lab infrastructure?

When asked if the buildings, facilities labs of rural living lab can be used the local stakeholders, the largest percentage- answered 'Yes' (75%). Another 57% answered for the usage of the ICT infrastructure and 20% are using virtual network.

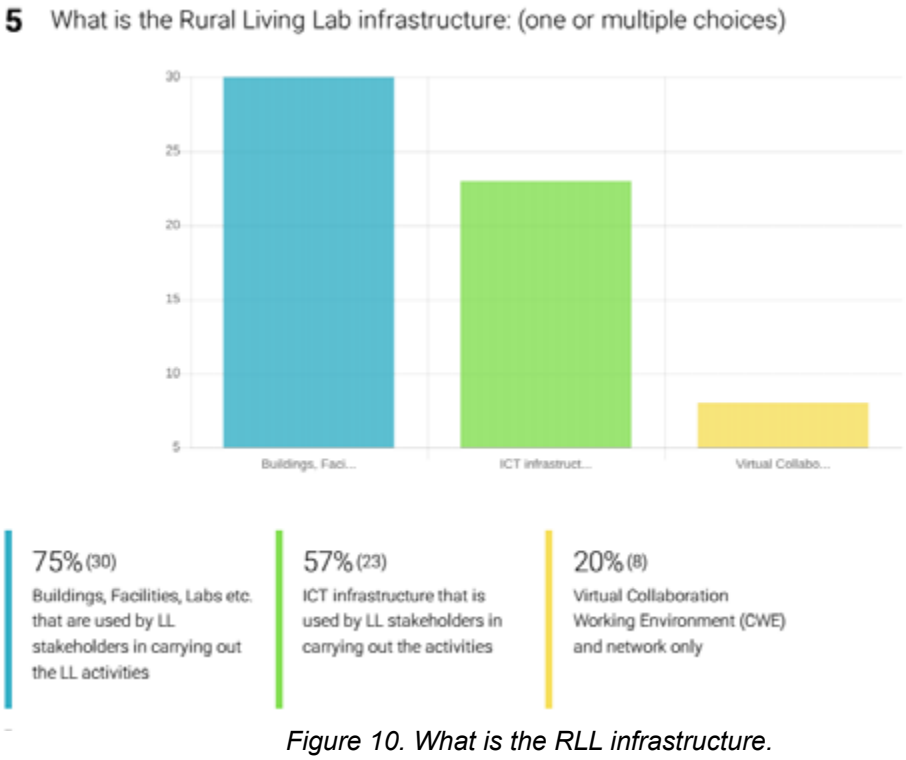


Figure 10. What is the RLL infrastructure.

3.2.2.3 What's the main focus of the Rural Living Lab?

The main focus is a service driven innovation (68%), the product driven innovation is represented in case of 60%, process driven (57%), methodology driven (50%), technology driven (48%) and organizational driven innovation in the listed Rural Living Labs.

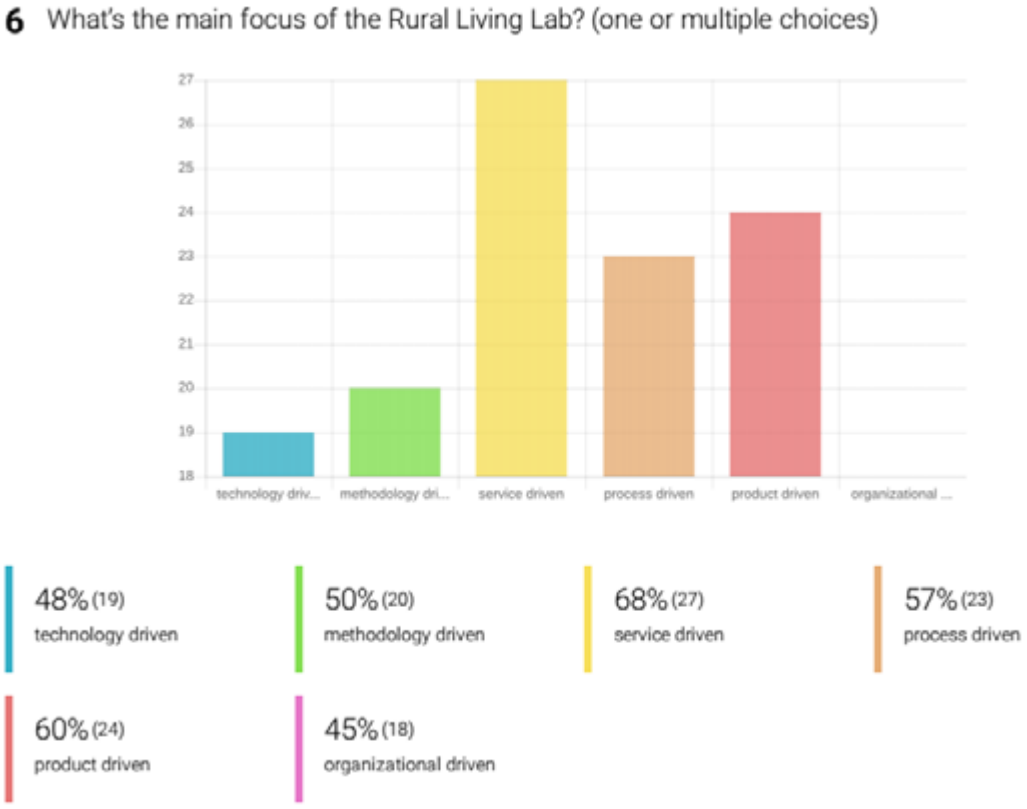


Figure 11. What is the main focus area of the RLL.

3.2.2.4 How does the Rural Living Lab work? What is the business model of RLL?

The **most respondents spoke of benefit for end-users (95%)**, another high percentage goes to the benefit for other stakeholders (68%), 48% is associated the benefit for government and 43% to the agro-industry.

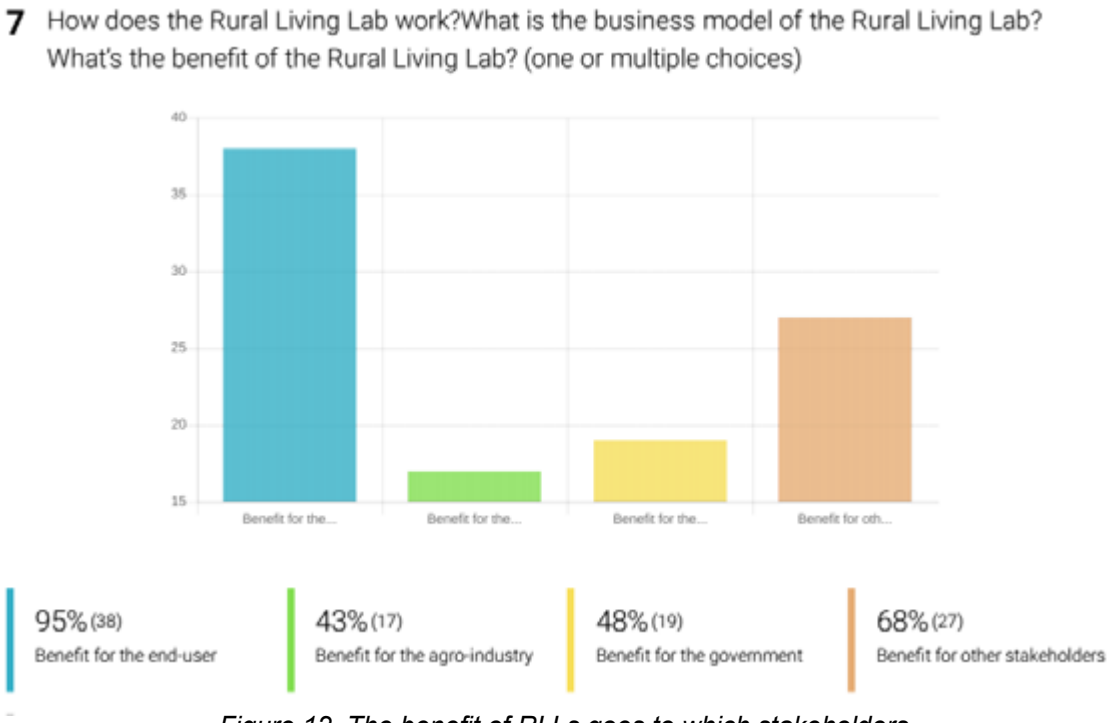


Figure 12. The benefit of RLLs goes to which stakeholders.

3.2.2.5 Duration of the Rural Living Lab

The main reason of this question was to know: the RLL does have permanent structure (physical facility, management team etc.) or it is project orientated or it`s operated by another form? 66% of the answers declare permanent structure, 44% said project orientated and 12% only “Other”. “Other “means: e.g. lease agreements with the tenants are on a temporary basis.

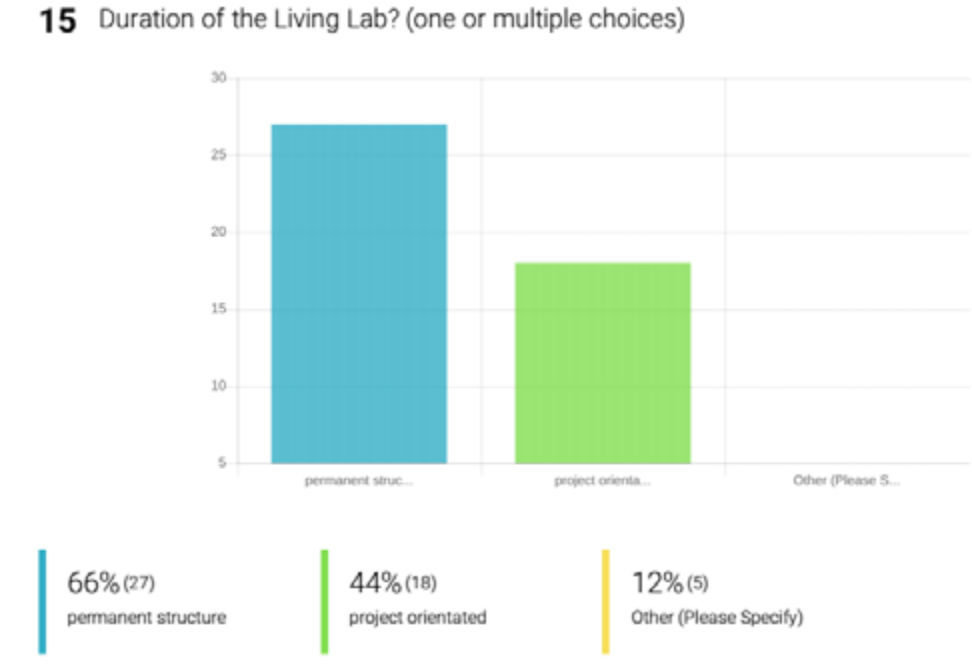


Figure 13. The duration of the RLL.

3.2.1.6 How is the Rural Living Lab financed?

This question in the Survey (Figure 14) was the most critical **in the aspect of the sustainability of the Rural Living Labs. If the RLL is financed by public/private funding (65%) mainly EU funding**, means that in the longer time horizon of 3-5 years and beyond 5 years the surviving period is strongly depending to the access to funding and therefore the key issue in the future for rural living labs will relate to sustainability. The RRL are financed by PPP in case of 63%, 18% only by universities and 30% is by "Others" (e.g. Membership fees, project promotion, sponsorship).

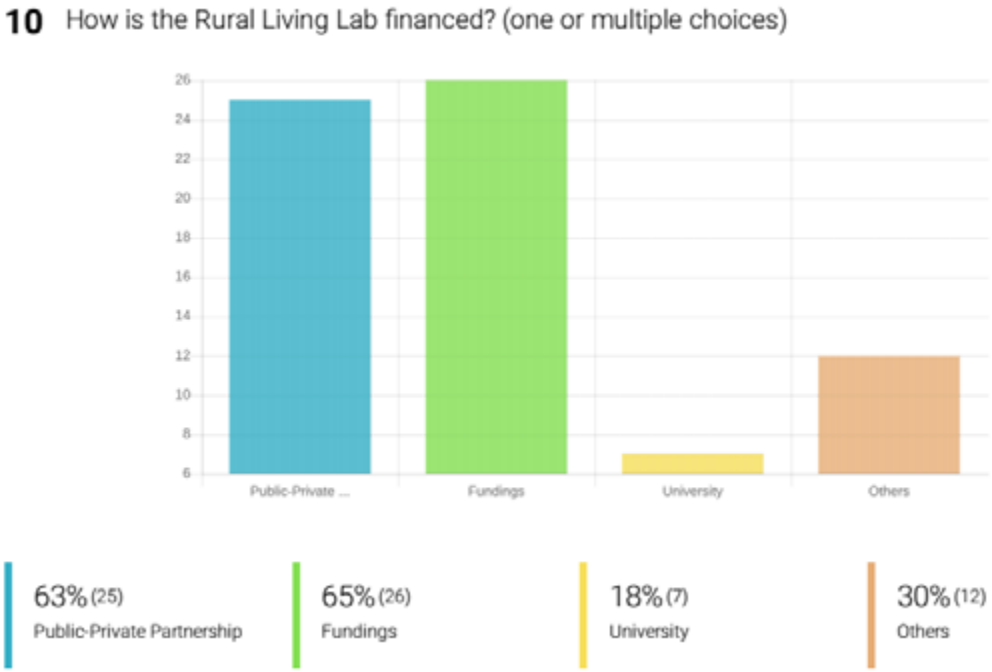


Figure 14. How the RLL is financed.

3.2.2.7 Who runs the Rural Living Lab?

The ownership associated with living labs were explored and 33% of respondents said that a their rural living lab owned by governmental organisation while 25% said that individuals governed their lab. 20% by University,10 % cooperatives or 40% as "Other" (eg. Foundation, UN programme. association of private-public members, chamber of commerce, LAG, etc.).

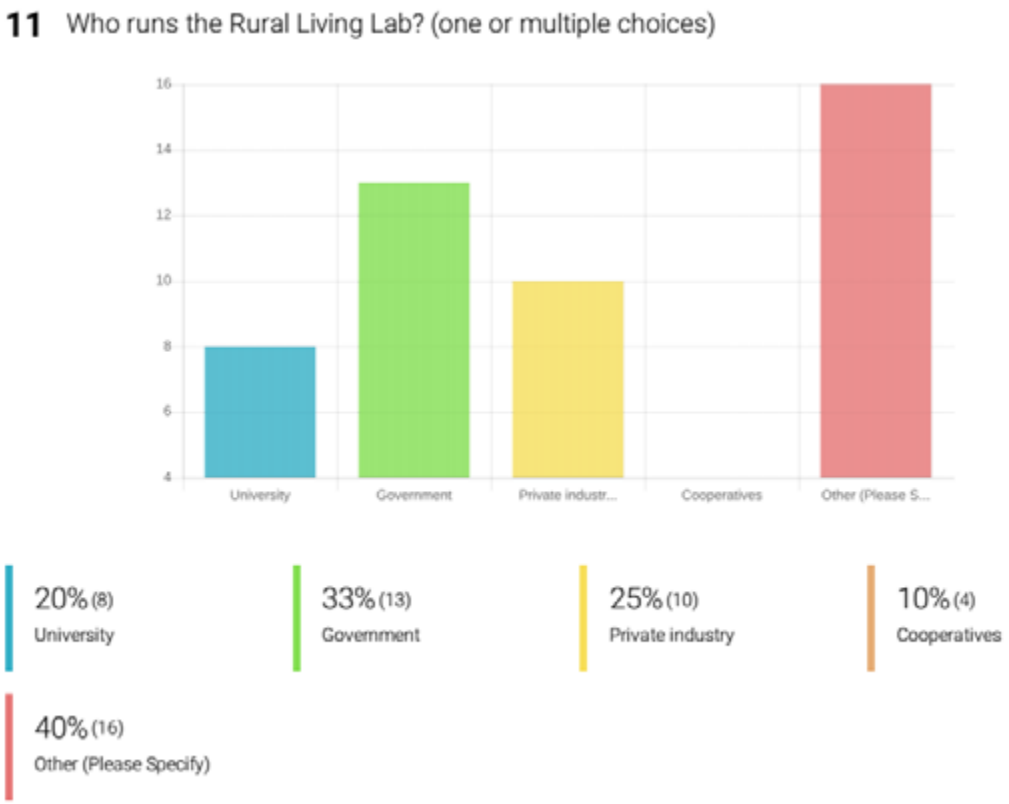


Figure 15. RLL ownership.

3.2.2.8 Openess

When asked if the openness of their rural living lab (Figure 4) regarding results and partnership. The high rate shows that 93% of the RLLs are open to share their results and their governance model is open to attract new stakeholders.

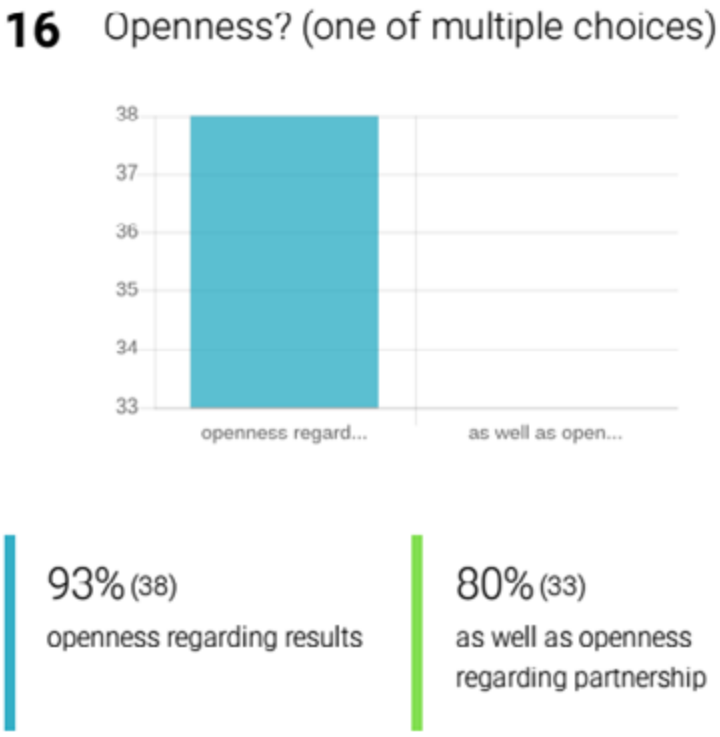


Figure 16. Openess RLL.

3.2.2.9 Future perspectives of the Living Lab, its role/position/impact to the regional or local economy.

The future perspectives of the RLLs would be reflected in further development (75%), new business models (57%) and stable financing (40%).

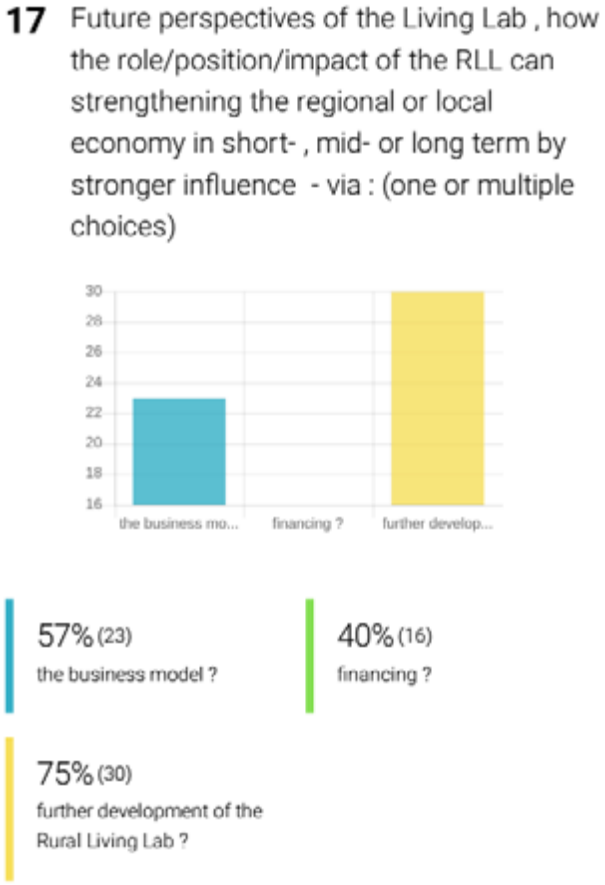


Figure 17. Future perspectives of RLLs to the economy.

3.2.2.10 Which technologies are implemented?

To the question which communication infrastructure and technologies are implemented in the RLLs , the most used is **the mobile network (61%), the wireless network also (55%), the satellite network (34%), 5% radio base network and Other** (29%) cannot be assessed because the answers to specify the other technologies are wrong !

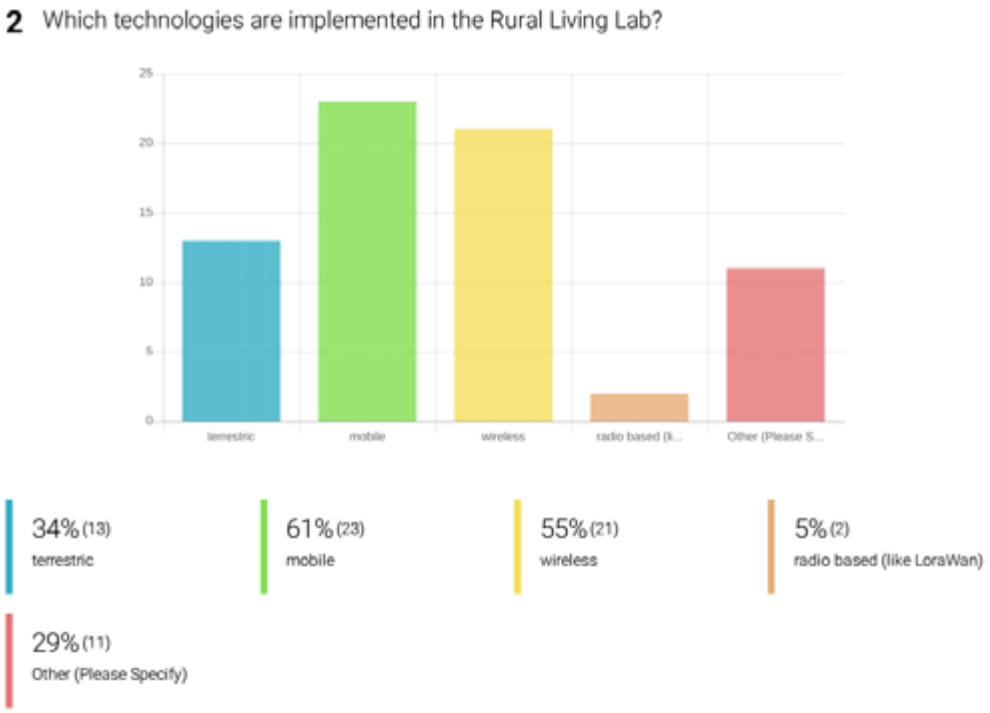


Figure 18. Communication infrastructure of RLLs.

3.2.2.11 Which methods and tools are used in the RLL

The majority of respondents described **the involvement of end-users in the product or service development (76%), product/service concept (70%), product/service idea (68%) and market launch (57%) that the RLLs supports.(Figure 19).**

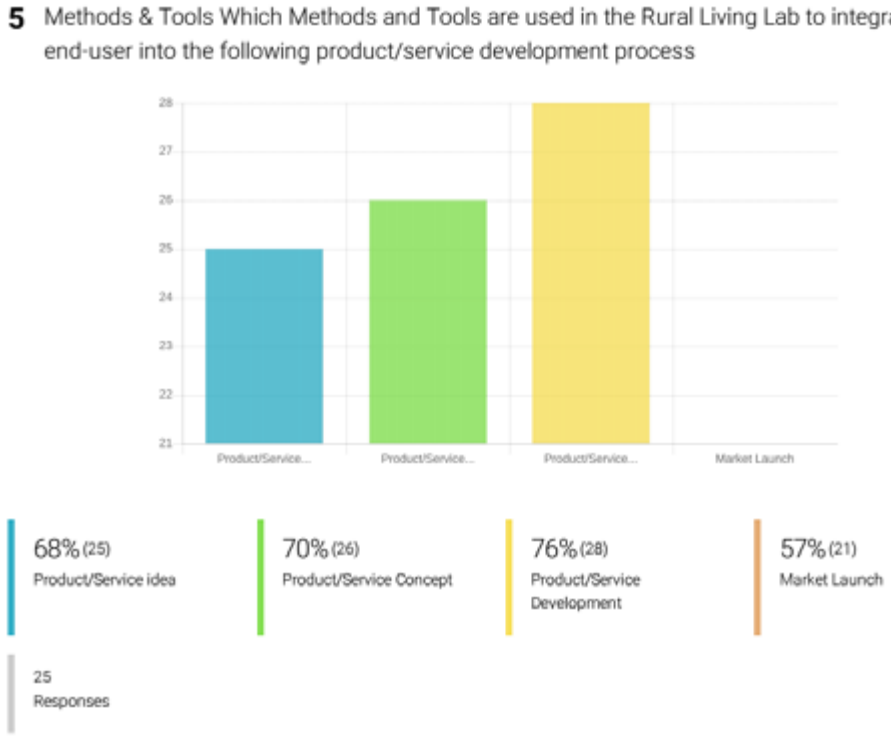


Figure 19. MEthods and Tools to integrate the end-users.

3.3 Monitoring sheet (proceeded by ADRI)

The T3.1 have been started as a “desk research” and combined by Internal Desk research (also called: Primary research) and Secondary research. The team of All Partners started to collect the basic data by the Internet based research, than based on the primary data and sources, they analyzed the valuable data coming from published academic papers, government documents, statistical databases, and historical records. The second phase of the data evaluation requested from all partners an “action research” by filling up Online Survey (Part I-. Part II) by the support of their local contacts, making phone calls and email correspondences with them.

The actual T3.1 gave challenge to the partners and some of them made strong efforts in order to complete this non-traditional data collection.

Region/Area	Organization	Name of the RLL	Contact	web link	Telephone	Questionnaire	Answer received and comments
Badajoz, Spain	Rural Action Group *CEDER La Serena*	Social Space of Innovation and LL *CEDER La Serena* (Award received in 2010)	ceder@laserena.org	http://www.cederlaserena.es/	924 772 408	Sent	Innactive LL, no info/La Serena presented its candidacy to Social Space of Innovation in 2009 and to Living Lab in 2010. Their candidacy was justified in terms of the methodology they use for the implementation of the LEADER initiative in our territory. They are not connected anymore with the working grouos and networks in LL fields.
Murcia, Spain	INTEGRAL, Association for Rural Development	Social Space of Innovation and LL *Integral (Award received in 2010)*	Jesús Ruíz integral@integral.es	http://www.integral.es/	968 65 44 34	Sent	Innactive LL, no info/ They were not able to fill out the requested questionnaire due to the lack of information. They received an award that qualified its organization as Living Lab eight years ago, the manager of the organization has changed, the current manager is not aware of this information.
Córdoba, Spain	Rural Action Group *Subbética Cordobesa*	Social Space of Innovation and LL of *la Subética Cordobesa (Award received in 2010)*	Carmen Pérez del Río 667 65 86 84 gruposubbetica@gruposubbetica.com	http://www.gruposubbetica.com/actividades/en-ejecucion/living-labs/	957 529 271	**Sent/filled out**	**Filled out (part I).**
Málaga, Spain	Rural Action Group Valle del *Guadalhorce*	Social Space of Innovation and LL of *la Subética Cordobesa (Award received in 2010)*	info@valledelguadalhorce.com	http://www.valledelguadalhorce.com/seccion_asociacion.php	952 483 868	Sent	They confirmed the reception of the questionnaire. They have been contacted several times by phone. Until today we have not received the questionnaire.
Málaga, Spain	Rural Action Group *Sierra de las Nieves*	Social Space of Innovation and LL of *Sierra de las Nieves(Award received in 2010)*	agdr@sierranieves.com	http://www.sierranieves-desarrollo.com/	952 488 511	Sent	No answer yet
Álaba	MENDINET Asociation	Social Space of Innovation and LL of MENDINET	mendinet@mendinet.org	http://www.mendinet.org/default_es.html	945 410 309	Sent	Innactive LL, no info/ They confirmed the reception of the questionnaire. They have been contacted by phone.
Catalonia, Spain	Forest Technology Center of Catalonia	Rural Living Lab Pirineus	Sara Bastien Henri sara.bastien@ctfc.cat (Asistente de dirección); Laia Ximenis (laia.ximenis@ctfc.es) ; imma.clop@ctfc.es	https://rllp.wordpress.com/about/ ; http://www.ctfc.cat/es/personal.php ; https://es.slideshare.net/puntlic/rural-living-lab-pirineus	973 48 17 52	**Sent/filled out (desk research)**	Innactive project. The questionnaire have been re-sent to three different services because they said the data maybe will be available in a different department of the center. The person who was in charge of the project doesn't work there any more. Besides, the declaration of consent to fill out the questionnaire have to be sign by the manager of the department and it is currently in at administration level. **The questionnaire have been Filled out (part I) through desk research, no info por part II.**
Valencia, Spain	Polytechnic University of Valencia	Urban-rural LL Valencia (H2020 ROBOUST Proyect)	Javier Esparcia Dr. in Geography and in Sociology. Polytechnic University of Valencia Javier.Esparcia@uv.es	http://rural-urban.eu/ ; https://rural-urban.eu/sites/default/files/user_uploads/Publications/Living%20Labs%20in%20the%20ROBUST%20project.pdf	Tel. +34-96 3864237 (dpto.); Tel. +34 96 3864764 (directo)	Sent	The Project has recently started, there are not data yet. There is no online information about the LL because it has not developed yet.
Valladolid, Spain	Open Smart Rural Fundación	Open Smart Rural LL	Pepe Casado, CTO Fundador osr@opensmartrural.com	http://www.avebiom.org/es/nuestros-asociados/list/show/fundacion-open-smart-rural-577	619461614		Innactive email address at the webpage. We couldn't stablish contact with the person in charge, not by phone neither by mail.
Basque Country, Spain	Zumaia Municipality	Zumaia Lab	Igor Calzada (Oxford University) igor.calzada@compas.ox.ac.uk	https://www.igorcalzada.com/tag/living-labs/	00 44 7887661925 UK 00 34 630752876 Spain	**Sent/filled out (desk research)**	E-mail received which contains the links to article papers published about Zumaia Lab and other publications from Igor Calzada. **The questionnaire have been Filled out through desk research.**
Canada	University of Alberta and Western University	ALBERTA'S LIVING LABORATORY PROJECT	wetlands@ualberta.ca	http://restoreourwetlands.ca/	7'802'481'073	Sent	No answer yet
Canada	Algonquin College	Algonquin College Perth Campus Rural Living	Centre: Applied Research at Perth Campus. Managing Director: Kerry Milford /Cristina Holguin-Pando Director. Applied Research & Innovation, 613-727-4723 ext. 6694 holguin@algonquincollege.com	http://www.algonquincollege.com/arie/project-examples/	613 727 4723 ext. 6694	Sent	No answer yet

Table 9. Monitoring sheet for data collection (ADRI).

CONCLUSIONS

The T3.1 Task Leader with the involved Partners within WP3 faced with a unique challenge as **by today no one created a repository about Rural Living Labs** in any EU or nationally/regionally or privately funded projects or programs.

The LIVERUR Rural Living Lab Database is the first kind pioneering data collection about operational rural living labs from Europe and beyond.

The other challenge was the fact, that **Living Lab as an user driven open innovation methodology and tool to assess the innovation value chain in urban/rural context, territorial/regional and rural dimension is young research domain, there is no consensus or standard guideline yet regarding supporting theories and frameworks**. (D. Schuurman , D. Mahr , L. D. Marez , P. Ballon, 2015[1]). Even it has recorded a high number

1 D. Schuurman & D. Mahr & L. D. Marez & P. Ballon: A Fourfold Typology of Living Labs: an Empirical Investigation amongst the ENoLL Community, 2015. https://www.researchgate.net/publication/272566534

and wide variety of projects and approaches being called 'Living Labs', **the clear conceptualization and definition of Living Lab (urban/rural) is still in progress.**

Within this task (T3.1) we have been collected data from Rural Living Labs based on a literature review and validated by an empirical investigation of the characteristics of **82 Rural Living Labs by a structured Survey** (30 questions: 20 questions has been in Part I and 10 in Part II). **The data collection was based on desk research and literature review mainly and in certain cases personal/email based interviews were conducted with the Rural Living Lab stakeholders.**

Only a small part of the RLLs coming from the largest European Network of Living Labs . **Within the 320 certified Living Labs there are lots of Rural Living Labs in the historical database of ENoLL which are no longer active**. Therefore, on a theoretical as well as on a practical level, a further delineation of the Living Lab-concept remains a task in progress.

The main findings from this first major survey of rural living labs have provided a ground truth of information about **their structure, mode of operation, focus of vision and their fears and aspirations**. What is remarkable about the findings is **the diversity of purpose and scope of the rural living labs surveyed**. Discussing the collected data of his survey in detail and placing the results in context of the further Tasks within WP3 will be made available in the next Deliverables.

In D3.1, we will add to the current literature **by constructing a typology of Rural Living Labs based on a literature review and empirically validating this typology by means of an analysis of 82 active Rural Living Labs from all over the world, from 24 countries.**

There will be access to the offline filled Surveys as well as the online Surveys in printed version from the survey`s server and database

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ANNEXES

ANNEX 1: Survey Part I - II Question

Research Executive Agency

H2020 Research and Innovation Action

Living Lab research concept in Rural Areas – "LIVERUR"

WP3 - T3.1 Definition of living lab concept in rural areas and identification of existing rural living labs (RLL) (M7)

Questionnaire

Part I (20 questions) :

Key elements of the Rural Living Lab

Identification of the Rural Living Lab

1) **What is the Living Lab social constituency?** (short description)

(i.e. the geographical territory of the social setting on which the Living Lab is established – a city, a region, a virtual village…)

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2) What is the LL rural / agro-industrial constituency? (short description)

(i.e. the companies that are involved in Rural Living Lab activities – e.g. an SME network, an agro-industrial district, a virtual district)

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3) Who are the stakeholders of the Rural Living Lab? (one or multiple choices)

- Public and Civic Communities
- Public and Regional Authorities
- Industry
- SME's
- Academia
- Investors
- Content Providers
- Others (please specify)

4) What's the role of the different stakeholders? (short description)

---

5) What is the Rural Living Lab infrastructure: (one or multiple choices)

- Buildings, Facilities, Labs etc. that are used by LL stakeholders in carrying out the LL activities
- ICT infrastructure that is used by LL stakeholders in carrying out the activities
- Virtual Collaboration Working Environment (CWE) and network only

6) What's the main focus of the Rural Living Lab? (one or multiple choices)

- technology driven
- methodology driven

- service driven
- process driven
- product driven
- organizational driven

How does the Rural Living Lab work?

7) What is the business model of the Rural Living Lab?
What's the benefit of the Rural Living Lab? (one or multiple choices)
- Benefit for the end-user
- Benefit for the agro-industry
- Benefit for the government
- Benefit for other stakeholders

8) How this benefit is generated (Product/Market Strategies)? (short description)
---
9) Earnings of the Rural Living Lab (short description)
---
10) How is the Rural Living Lab financed? (one or multiple choices)
- Public-Private Partnership,
- Fundings
- University
- Others

11) Who runs the Rural Living Lab? (one or multiple choices)
- University
- Government
- Private Industry
- Cooperatives
- Others (please specify)

12) What is the Living Lab legal entity and who are the owners?
What is the legal framework of the Living Lab (short description)

(i.e which legal agreements are signed by all the involved stakeholders)
---
13) What is the governance structure of the Living Lab? (short description)

(for both strategic management and operational management)
---

14) What are the approaches used to involve citizens in LL activities? Are community-like approaches used to enable self organized peer-to-peer LL stakeholders' interaction?

(i.e. marketing strategies towards citizens) (as opposed to managed vertical interactions such as one-to-one citizen interviews)? (short description or please use the WORD template and its table)
---
15) Duration of the Living Lab? (one or multiple choices)
- permanent structure
- project orientated
- Other (please specify)

16) Openness? (one of multiple choices)
- openness regarding results
- as well as openness regarding partnership

17) Future perspectives of the Living Lab regarding: (one or multiple choices)
- the business model
- financing
- further development of the Rural Living Lab

Products/Services

18) Which products/services are offered within the Rural Living Lab? (short description)
---
19) What's the target market of the Rural Living Lab? (line of business) (short description)
---
20) Is the Rural Living Lab only Regional orientated or International orientated? (short description)

Part II. (10 questions)

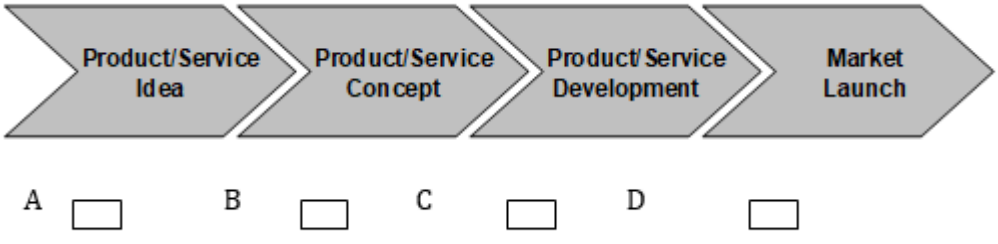
Rural Living Lab ICT Infrastructure

21) Are there any providers involved? Which one? (short description)
---
22) Which technologies are implemented in the Rural Living Lab? (one or multiple choices)
- terrestric
- mobile
- wireless
- radio based (like LoraWan)
- Other (please specify)

23) How is the ICT infrastructure operated, maintained and developed? (short description)
---
24) Is the ICT infrastructure open to the different stakeholders? (short description)

Methods & Tools

25) Which Methods and Tools are used in the Rural Living Lab to integrate the end-user into the following product/service development process (one or multiple choices)



26) In which process phases are the user involved? (front end (p-idea, p-concept) or in the back-end (p-development, market launch

(Interviewer/Partners goes through the template) (please fill up the template)

Product/ Service -Idea	Methods	Yes/ No	Comments
Traditional Methods:	Collection and Analysis of Customer complains		
	Interviews _orally _written _telephone		
	Paper and Pencil/Point-of-Sale (POS) Interviews		
	Focus Groups		
	Empathic Design		
	Participatory Design		
	Story Telling		
	Customer Suggestions		
	Idea Generation with Lead Users		
	Creativity Groups		
CWE-based Methods:	Market Intelligence Services		
	CAPI (Computer Assisted Personal Interview)		
	CATI (Computer Assisted Telephone Interview)		
	CAWI (Computer Assisted Web Interview)		
	Online Interviews		
	Online Focus Groups		
	Suggestion Box		
	Customer Advisory Panels		
	Online Creativity Groups		
	Log behaviour, social network analysis		
Product/ Service - Concept			
Traditional Methods:	Conjoint Analysis		
	Quality Function Deployment		
	Concept Tests with Lead Users		

Collaborative Working Environment (CWE) -based Methods:	Web-based Conjoint Analyses		
	User Design		
Product/ Service -Development			
Traditional Methods:	Workshops with Customers		
	Product Testing		
	Prototype Tests		
	Usability Tests		
	Engineering Contests		
	Pre-commercial procurement		
	Behaviour logging, social networks		
CWE-based Methods:	User Toolkits		
	Virtual Prototyp Tests		
	Web based CAD		
Market Launch			
Traditional Methods:	Product Testing		
	Test Markets		
	Usability Tests		
CWE-based Methods:	Virtual Product Tests		
	Virtual Market Tests		
	Virtual Reality		
	Augmented Reality		
	Eyetracking		
	Time-motion-studies, controlled observation, direct observation, field observation		
All process Phases			
	Virtual Communities		
	Discussion Forums		
	Chatrooms		
	Weblogs		

27) Other Methods not mentioned (short description)
---

28) Which Methods are used to integrate the customer into the Rural Living Lab? (short description)
---

29) Does the Rural Living Lab use any Data preparation Tools (statistical Tools)? Which one? (short description)

---

30) Any smart ICT apps which could be interesting for the LIVERUR Community? (short description)

Thank you for your answers!

Please let us know if you need a Consent agreement to collect data from your user communities!

Tunde Kallai
WP3 leader of LIVERUR
TR Associates Ltd.
Email: tkallai60@gmail.com
Skype: tkallai, Tel.: +41 78 8343104

ANNEX 2: Web links to database and survey

Final List of RLLs have been updated on Google docs

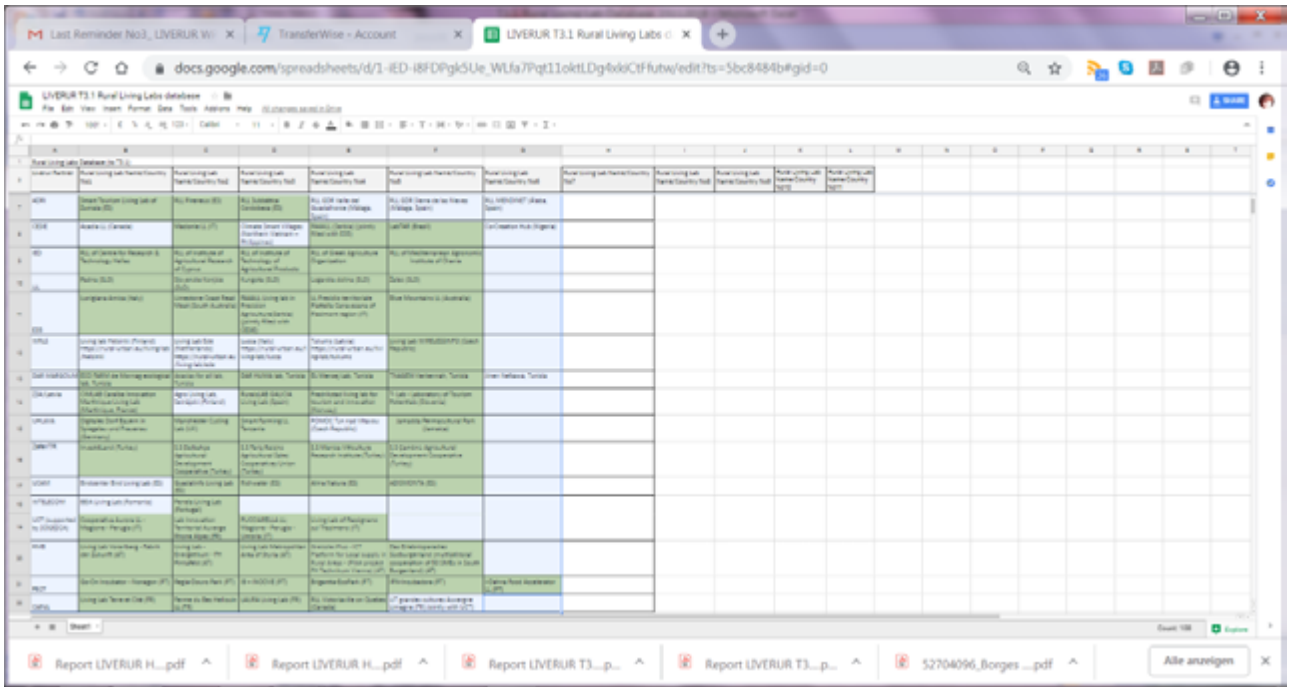


Table 10. Extract of Google doc of RLLs.

Weblink:

https://docs.google.com/spreadsheets/d/1-iED-i8FDPgk5Ue_WLfa7Pqt11oktLDg4xkiCtFfutw/edit?ts=5bc8484b#gid=0

Links to Surveys:

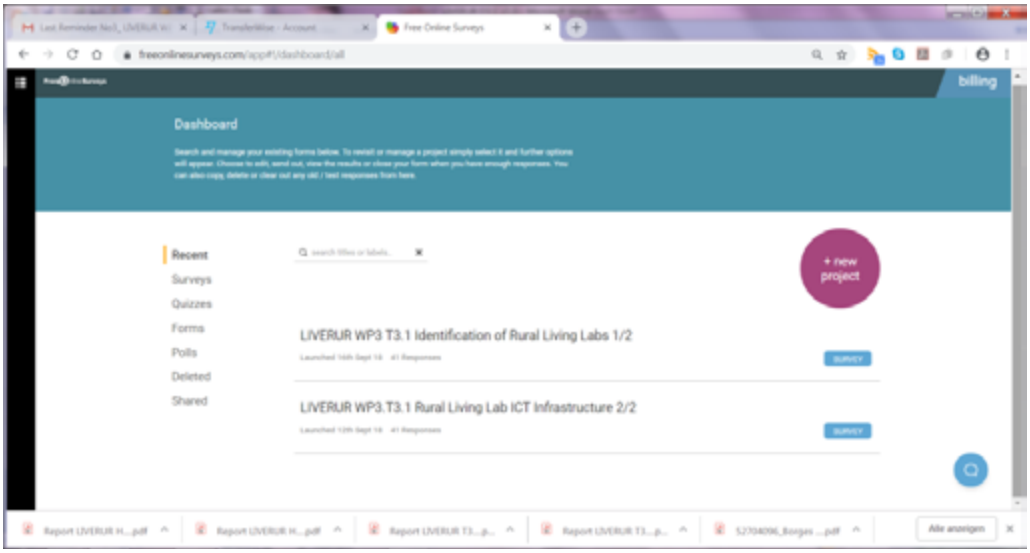
Part I (20 questions) :

https://freeonlinesurveys.com/s/3lHA7ai6#!/0

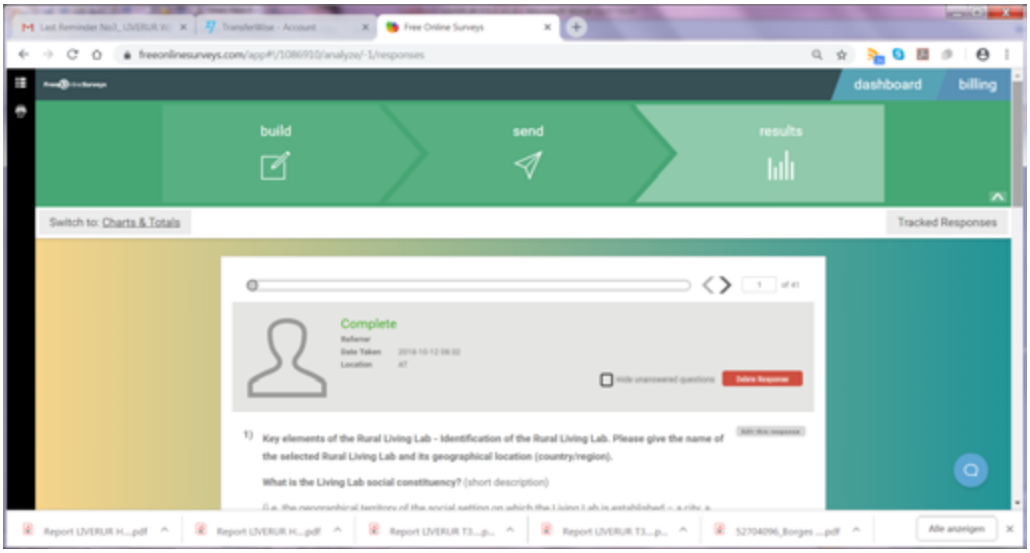
Part II (10 questions):

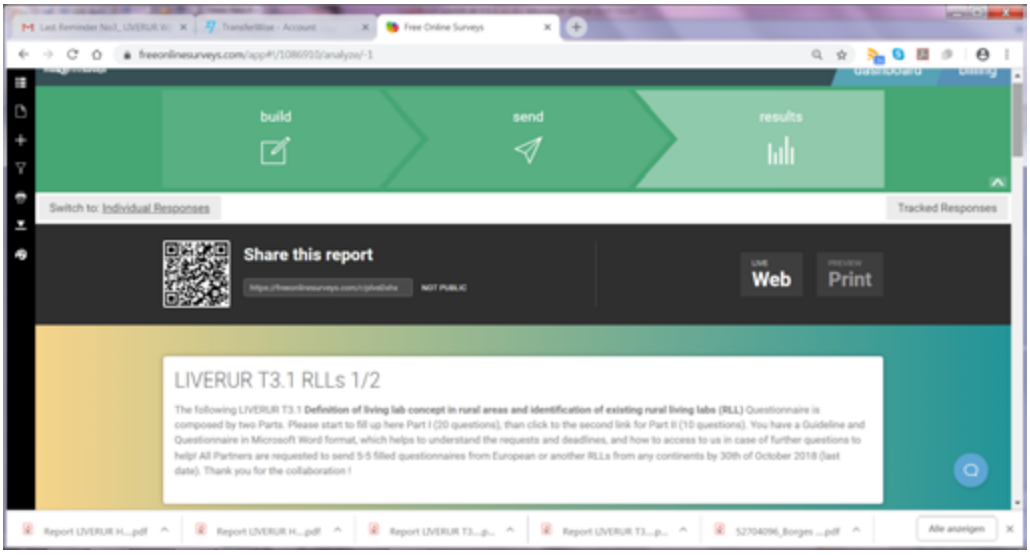
https://freeonlinesurveys.com/s/iPLgoETI#!/0

Dashboard



Charts/Totals vs Individual responses




build
send
results
Switch to: Individual Responses
Tracked Responses
Share this report
Web
Print
LIVERUR T3.1 RLLs 1/2

ANNEX 3: Informed Consent

Project Name: "Living Lab research concept in rural Areas - LIVERUR"

PROJECT TITLE	Living Lab Research Concept in Rural Areas
PROJECT ACRONYM	LIVERUR
GRANT AGREEMENT NUMBER	773757
CALL AND TOPIC	Call H2020-RUR-2017-2
FUNDING	Research and Innovation Action (RIA)
PROJECT DATES	1st of May 2018 - 30th of April 2021
COORDINATOR BENEFICIARY	Fundación Universitaria San Antonio (UCAM)
WEBSITE	www.liverur.eu

1. INTRODUCTION

You have been invited to take part in a research study of the project **LIVERUR**. Before making a decision on whether you want to participate or not, please read this document carefully. Please ask all the questions you may have so you can be completely sure that you understand the scope and procedure of the study, including risks and benefits. This informed consent document might also include words that you may not understand. In these cases, please ask the contact researcher or any other staff of the study to fully explain the meaning of the word or piece of information you do not understand. You may take a copy of this consent to think about it or talk to your family before making any decision. At all times, we assure the compliance of the current legislation.

2. OBJECTIVE OF LIVERUR

LIVERUR aims at expanding an extremely innovative business model called Living Labs among the rural regions. Living labs are user-centred, open-innovation ecosystems often operating in a territorial context, integrating concurrent research and innovation process within a public-private-people partnerships. Living Labs as innovative business models that are currently developing in rural areas, and it will undertake socio-economic analysis to identify, describe and benchmark differences between the new Living Lab approach and more entrepreneurial traditional approaches (mass production, development of prices, optimising the cost structures with the enterprises, rationalisation). **LIVERUR** project pays particular attention to Rural Living Labs, since they foster a more sustainable mobilisation of resources, improved cooperation between operators along the value chain and lead to new services in relation of circular economy.

3. PARTICIPATION IN THIS STUDY

LIVERUR project consortium kindly request your voluntary participation in this research study. This informed consent document includes information on the following research study. The consortium would like to assure that you are perfectly informed about the purpose of the study and what your participation implies. Please, do not sign before being sure that you have understood all the aspects of the study and its objectives. Please ask to clarify any section in this informed consent document you do not understand. The participation in this study is totally voluntary. You can quit at any moment without any sanctions. (see VII. Confidentiality).

Participation criteria:
- Age: 18-55+
- Countries: Anyone from EU Member States, Associated Countries and Third Countries who are taking part in H2020 program (2014-2020)
- Sex: Any
- Profession: Any

4. PROCEDURE OF THIS STUDY

The main goal of this study is to complete online Survey Part I (20 questions) and Part II (10 questions) in order to identify the existing examples how rural living labs are differentiated on the basis of three main characteristics: **user involvement, real-life contexts, and public-private-people partnership (PPPP).**

This requires a close interplay between **business actors (including SMEs), policy makers and rural users** within the process of open innovation.

The actors (target users and beneficiaries) are requested to share their experiences, daily practices and interacting through local/regional and cross-border innovation ecosystems tailored to the demands and challenges of rural development. Rural users and stakeholders shall jointly develop and implement innovations to accelerate socio-economic development in their own living and working environment in rural, mountains and remote areas.

5. BENEFITS OF THIS STUDY

The benefit from participating in this study is a definition of Living Lab concept. Collecting Rural Living Lab examples from Europe and beyond. Given the fact that the intrinsic nature of Living Lab is participatory, the task will be built strongly with a bottom-up approach.

6. RISKS OF INCONVENIENCE

Your participation in this study does not pose any risks or any kinds of inconvenience for you.

7. PRIVACY AND CONFIDENTIALITY

The recorded information of your responses will not include any personal identification data or names of other persons / organizations mentioned during the study that might lead to your identification. All provided personal data will be stored in a local file that can only be accessed by involved partners of **LIVERUR**. Recorded information will be processed anonymously during the phase of data analysis and will be included in project internal reports or later in scientific publications. None of the provided personal data will be handled out to third parties.

The authorization for use and access to this information for study purposes is completely voluntary. This authorization is valid until the end of the study unless you decide to cancel it before. If you should decide to deny your consent, please contact the leading investigator and let her/him know of your intention to quit the study. From the moment you withdraw from the **LIVERUR** project, your data will not be used in any further phase of the project. However, documents that have already been published or are parts of the already finished studies cannot be withdrawn.

Your decision to give authorization for the use of the information provided by you is completely voluntary. However, if you do not provide us with your authorization now or if you cancel it in the future, you will not be able to participate in this study.

8. CONTACT PERSON

For further information about your rights as a participant in the study, or if you have any question or complaint during the study, please contact the Workpackage leader:

Tunde Kallai
WP3 leader of LIVERUR
TR Associates Ltd.
Email: tkallai60@gmail.com
Skype: tkallai, Tel.: +41 78 8343104

PROJECT H2020
"Living Lab research concept in rural Areas – LIVERUR"

Declaration of consent

on investigations, recovery, operating and storage
of scientific and personal data collected for the purpose
of analysis, research and testing

I agree to provide my personal data, collected for the purpose of scientific and technical assessment, under the *LIVERUR H2020 project - Living Lab research concept in rural Areas* (2018-2021).

The evaluation and test is conducted at no cost to me by the consortium of **LIVERUR** or authorized third parties.

I also give my consent to store, evaluate, order and systematize my data, so it can be used repeatedly in any form whether for scientific research. They are stored at no cost in the database of the **LIVERUR** project consortium. I also consent from that day, that in case of termination of **LIVERUR** project, the data will be destroyed by the project consortium or transferred to another database on the same terms and objectives.

I agree that the data collected about me, always at no cost to me, may be disclosed and used for research purposes to third parties (non-paying services) within the framework of scientific cooperation or individual orders. In this case, to use the collected data can be permitted only in accordance with the legislation on data protection and individual privacy. I expressly deny any involvement, which are out of the efficient use of scientific results.

I am aware that at any time and by mail, I can withdraw my consent to the consortium of **LIVERUR**.

If canceled, I can claim only that the destruction of my data, rather than transferring it to myself or a third party, it can be designated by me. Their destruction will be notified me by a simple written confirmation.

Place and date

_____
Name and Last Name in big letters

_____
signature