PROJECT H2020

LIVERUR

Living Lab Research Concept in Rural Areas

DELIVERABLE 3.3:

Report of analysis of the implementation challenges

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773757.

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

DELIVERABLE NUMBER	D3.3
DELIVERABLE TITLE	Report of analysis of the implementation challenges
WORK PACKAGE	WP3. Study of the living lab technique. Feasibility assessment on the integration process in the consortium territories
LEAD PARTNER	TRA
AUTHOR(S)	Tunde Kallai
TYPE	Report
DISSEMINATION LEVEL	Public
DELIVERY DATE	30/04/2019
LAST MODIFIED DATE	22/04/2020

HISTORY OF CHANGES

Date	Content	Author
22/04/2019	Core text	Tunde Kallai
26/04/2019	Peer review	Jelena Mazaj, Caterina Impastato (CESIE)
22/04/2020	Last version updated	Tunde Kallai
15/05/2020	Doc. design, grammar and spelling changes	Communication Team

TABLE OF CONTENTS

FIGURES

1 European Network of Living Labs (2017). What are Living Labs. Available at: http://www.openlivinglabs.eu/node/1429 (Accessed 27 April 2017).

TABLES

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**. Governmental organisations, Higher Education Institutions, civil organisations, large companies and SMEs are joining and demonstrating a new role in promoting and facilitating innovation in case of LIVERUR project.

The main objectives of T3.3: Multi-stakeholder participation is an overarching issue of LIVERUR and, as such, forms a foundation to foster innovation at all levels and at all piloting sites. Specifically T3.3. Service innovation – Stakeholder participation through Living Labs is dedicated to employ a Living Lab approach as key mechanism of local stakeholder involvement for the purpose of successfully accompanying the intended Circular Rural Living Labs' design, planning, implementation and evaluation. (Lead role: TRA).

Consortium role: Every partner contributed according to their expertise.

Activity: T3.3 performed an analysis between three different and interacting systems that comprise the view of living labs as a part of socio-technical change in rural areas: **(1) The living lab innovation system; (2) The living lab building system; (3) The rural development system.** Based on the highlights on Open Innovation through workshops and discussions, it was concluded that the following six views upon a Living Lab communicate the essentials: User involvement, Service creation, Infrastructure, Governance, Innovation outcomes, and Methods & tools whch refers to the mentioned three systems. In WP3.3. LIVERUR consortium partners have been following **a specific Guideline and workflow in order to support the workshops** with both internal and external project stakeholders of the new 13 circular living labs. This work was organised by the twinning partnerships of academic and non-academic partners of the LIVERUR project.

Design/methodology/approach: All project partners were asked to follow these steps:

- **Step 1.** To watch again the slides of T3.2.
- **Step 2.** The Living Lab Harmonization Cube concept a) study 2 basic slides b) then fill up each 6 slides or table in word document (The LL Cube concept is the main outcome of Collaboration@ Rural & COLLABS FP6/FP7 projects)
- **Step 3.** What LIVERUR should add to The Living Lab Harmonization Cube concept?
- **Step 4.** The improved Living Lab Harmonization Cube concept by LIVERUR: transition to Circular Rural economy by filling up the circular model.

Findings – Deliverable 3.3. directly recommends living labs as an experimentation and innovation instrument for ICT enabled applications in such areas of rural economies (such as agriculture, renewable energy, tourism or micro-businesses for MSMEs) to encompass societal and innovative development within public-private-people partnerships. This report provides a strong background for the development of management strategies to effectively engage different stakeholders throughout the implementation of living lab projects at macro/mezzo and micro level.

Originality/value – the Task 3.3 is dedicated to the circular economy and sustainability using the Living Lab Harmonization Cube concept. Knowledge developed by T3.3 is gathered and further exploited as a part of the LIVERUR WP2, WP3, WP4 and WP5 activities.

Keywords *Open innovation, Quadruple Helix model of stakeholders, Rural Living Labs, Circular Economy, PPPP, The Living Lab Harmonization Cube.*

INTRODUCTION

Considering complexity of living lab activities and relationships between different stakeholders, LIVERUR further distinguished between three different levels of analysis within the living lab phenomena. The levels of analysis as suggested by Schuurman (2015)[3] are: **macro, mezzo and micro level**.

Level	Description	Research Paradigm
Macro	Living lab constellation consisting of organized stakeholders (PPP partnership) and/ or infrastructure	Open Innovation: knowledge transfers between organizations and other innovation actors
Meso	Living lab innovation project	Open & User Innovation: real-life experimentation, active user involvement, multi-method and multi-stakeholder
Micro	Living lab methodology consisting of different research steps	User Innovation: user involvement & contribution for innovation

Table 1. Living Lab levels of analysis by Schuurman (2015).

To fully embrace the living lab approach, the Consortium has considered and assessed Tasks in WP3 following these three interrelated levels of analysis. In this report, the partnership presents our circular rural living lab approach as seen from the macro perspective, but also at mezzo- and micro levels.

In **LIVERUR** the consortium has considered the following characteristics as essential and defining for rural living lab activities as described in D3.1. and D3.2. as well.

Figure 1. Common elements in living labs (European Network of Living Labs, 2017)[1]

OBJECTIVES

The objective of T3.3 is: Analysis of implementation challenges by involvement of stakeholders, understanding of the techniques, legal and institutional barriers and financing opportunities.

This report summarizes the LIVERUR project approach to living labs. It describes the main considerations we make under the establishment of 13 new LIVERUR circular rural living labs and presents the implementation plans for each living lab.

In addition, it discusses the key elements we are considering to design our rural living lab pilot projects by the visualisation of The Living Lab Harmonisation cube.

Active user involvement

The engagement of users is fundamental in living lab activities in order to develop products and services that meet user needs and represent social values.

The insights from the previous research, what we learnt, that the users have different expectations, engagement, and intentions with their participation in different communities; hence, it is important to understand what is important for the users in that specific context (Ståhlbröst and Bergvall-Kåreborn, 2011)[2].

Real-life setting

Rural Living Labs indicate activities that take place in a "real-life" environment as opposed to a laboratory setting. Both researchers and practitioners have recognized the importance of evaluation and testing of products or services in such environments.

1 European Network of Living Labs (2017). What are Living Labs. Available at: http://www.openlivinglabs.eu/node/1429 (Accessed 27 April 2017).

2 Ståhlbröst, A. and Bergvall-Kåreborn, B. (2011). 'Exploring users motivation in innovation communities', International Journal of Entrepreneurship and Innovation Management, 14 (4), pp. 298-314.

As outlined by Veeckman et al. (2013)[3], users should be studied within a real-life context, which implies a familiar context that reflects users' natural environment as much as possible.

Multi-stakeholder participation

In the new LIVERUR circular rural living labs users and other partners from academia, businesses, and public sector will work together creating products and services in a way they match users' needs. LIVERUR will connect a great variety of different actors by facilitating collaboration and knowledge sharing between them. Multi-stakeholder participation provides opportunities to align different interests and expectations, as well as brings together multidisciplinary expertise and experience.

Developing an innovation is a process of understanding, learning and sharing among the involved stakeholders (Ståhlbröst and Holst, 2017)[4]. When creating a living lab ecosystem, it is important to create and share value within the ecosystem. As stated by Veeckman et al. (2013), there should be an added value for all partners involved, in order to create a long-term stakeholder engagement and identification with the living lab. Partnerships and collaboration networks are important aspects related to the sustainability of a living lab (Bergvall-Kåreborn et al., 2009)[5]. Successful collaboration builds on trust and takes time to build on. It fosters the sense of consensus and ownership of outcomes across the living lab community.

Multi-method approach

Living Labs involving different partners as co-creators in the innovation processes. Living Labs face challenges arising from different knowledge, expertise, and needs of involved actors.

Thus, methods and tools used by living labs for co-creation, collaboration and communication are substantial. Even more so, living lab effectiveness is directly related to the capacity of methods employed in mediating user insights and participation (Almirall and Wareham, 2008)[6].

Co-creation

Co-creation is the central process for value creation in living labs.

Different stakeholders have different value perceptions and propositions, creating heterogeneity across their value spectrum (Hagy, Morrison and Elfstrand, 2016). Co-creation however, links distributed sources of knowledge and creates value for the mutual benefit of stakeholders involved (Veeckman et al., 2013).

Greve K. et al. (2016)[7] have identified a list of factors that can facilitate a co-creation process based on their literature review. They include factors, willingness to co-create, social context, perceived relevance to the service/ product, capabilities, skills and motivation, type of service/ product, participation and involvement, expected benefits, dialogue and relationships, resources and facilities.

3 Veeckman, C. et al. (2013) . 'Linking Living Lab Characteristics and Their Outcomes: Towards a Conceptual Framework', Technology Innovation Management Review, 3(12), pp. 6-15.

4 Ståhlbröst, A. and Host M. (2017) 'Reflecting on Actions in Living Lab Research', Technology Innovation Management Review, 7(2), pp. 27-34

5 Bergvall-Kåreborn, B. and Ståhlbröst, A. (2009) 'Living Lab: an open and citizen-centric approach for innovation', Int. J. Innovation and Regional Development, 1(4), pp.356–370.

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

7 Greve K., et al. (2016) 'Facilitating co-creation in living labs: The JOSEPHS study'

1 PRAGMATIC PHASING APPROACH TO RURAL LIVING LAB DEVELOPMENT

In the preparatory actions of the row "setup" of the new circular rural living labs (highlighted in green in the figure below), the WP3 leader, TRA asked ALL Partners in **LIVERUR** to follow the pragmatic steps as described below, a set of actions, which contains **Stakeholder involvement, Vision building (vision workshops), user community building, Analysis of current ways of collaborative working, Innovative scenarios and uses cases, supported by users, Requirement analysis and definition of services**.

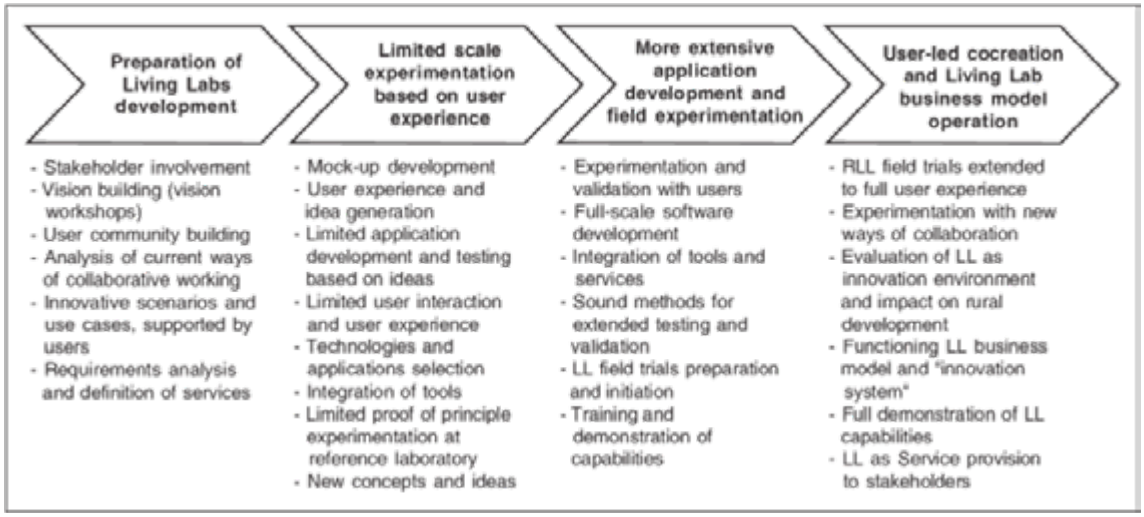


Figure 2. Step by step approach in row setup of new Rural Living Lab.

The step-by-step approach described in this report, how the key elements are implemented in the setup phase of the new LIVERUR circular living lab projects and by adapting The Living Lab Harmonisation Cube approach, how they can be used to design future projects and living lab activities[1].

2 THE INTEROPERABILITY CUBE FOR HARMONIZING LIVING LABS

The six sides of the cube (6x3x3) enables the definition of reference model used in the living labs such as: user involvement, service creation, infrastructure, governance, innovation outcomes, methods and tools.

1 REAL-WORLD INNOVATION IN RURAL SOUTH AFRICA Ingrid Mulder - Walter Bohle - Shela Boshomane - Chris Morris - Hugo Tempelman & Daan Velthausz, Telematica Instituut (Enschede, The Netherlands) Rotterdam University (Rotterdam, The Netherlands) Liaison Telematica Instituut & Meraka Institute (Pretoria, South Africa) Meraka Institute (Pretoria, South Africa) Ndlovu Medical Centre (Elandsdoorn, South Africa) InVivio (Doetinchem, The Netherlands), The Electronic Journal for Virtual Organizations and Networks Volume 10, "Special Issue on Living Labs", August 2008.

Figure 3. The Living Lab Harmonization Cube approach of Mulder et al (2008).

Based on the highlights on Open Innovation through workshops and discussions, it was concluded that the following six views upon a Living Lab communicate the essentials: User involvement, Service creation, Infrastructure, Governance, Innovation outcomes, and Methods & tools which refers to the mentioned three systems.

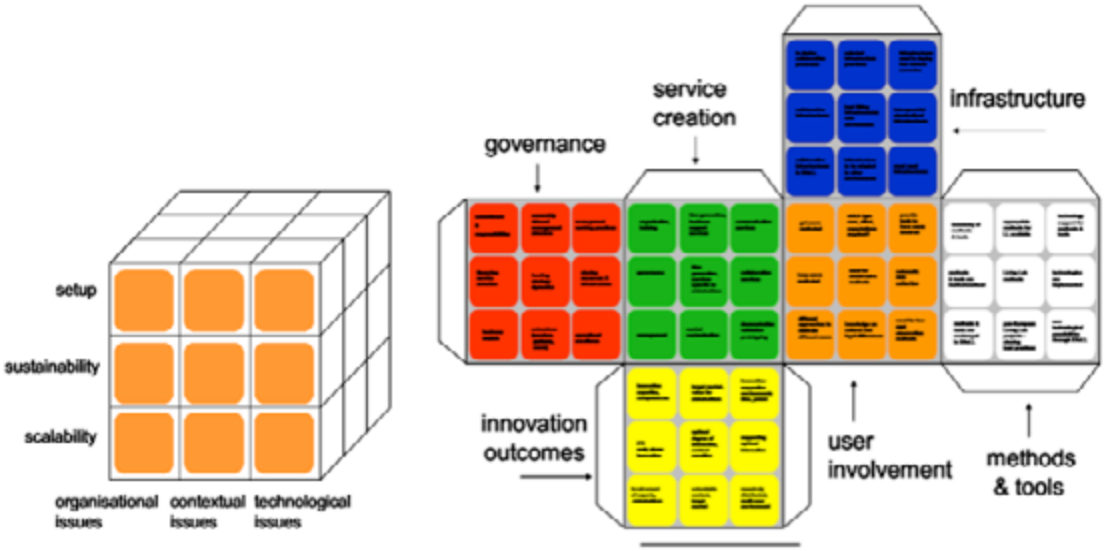


Figure 1: The Living Lab Harmonization Cube.

Figure 4. The 6 steps of the Living Lab Harmonization Cube.

The three columns of each cube side reflect the organizational, technical, and contextual issues of the Living Lab. In order to setup a Living Lab, **LIVERUR** partners could use the Living Labs Harmonization Cube for getting the right experiences and right expertise on board.

Each side of the cube facilitates interoperability between the phases of a Living Lab (setup – sustainability – scalability).

These phases are represented in the cube by the three rows.

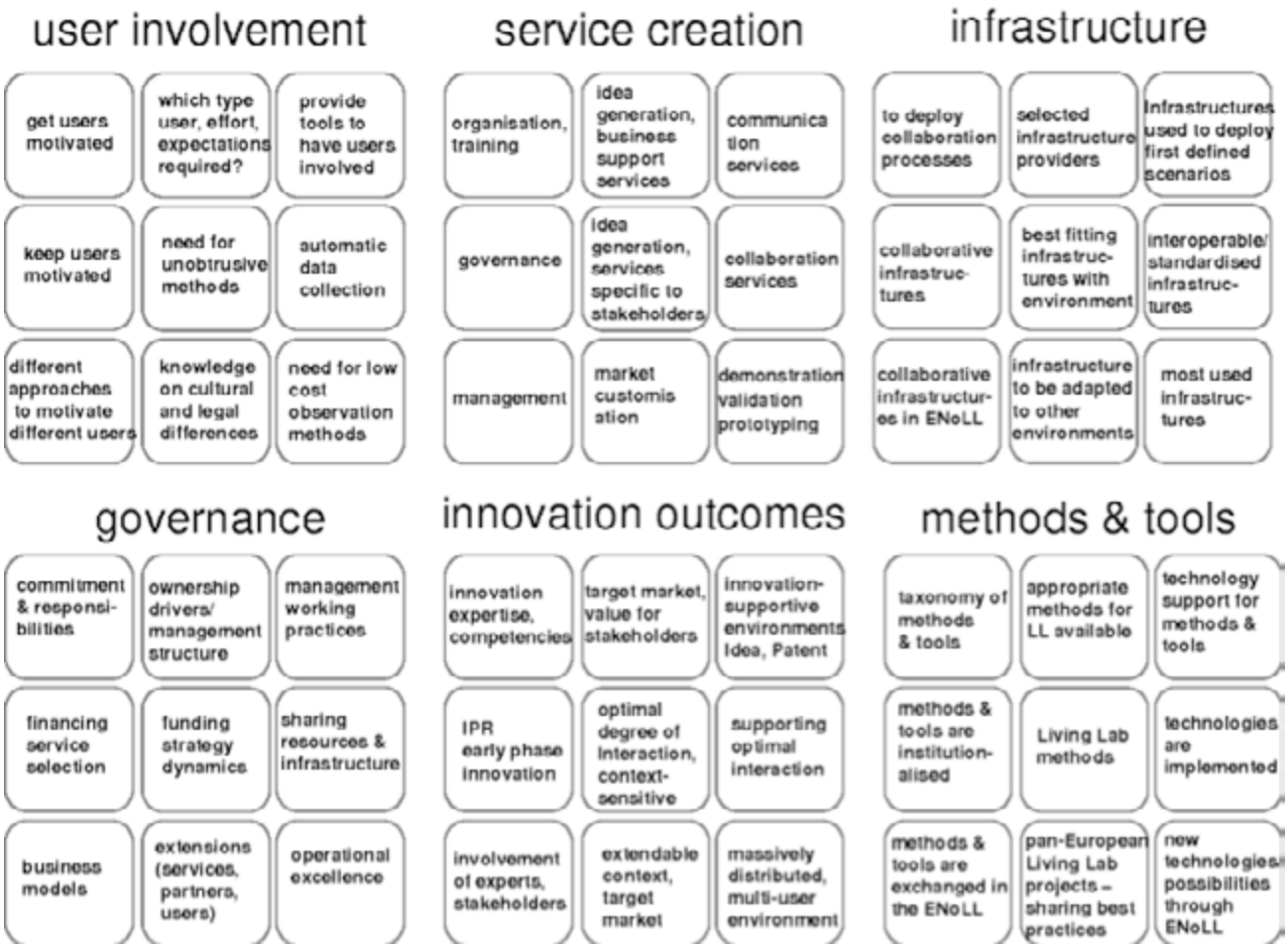


Figure 5. The 6 shapes and the basic instructions in each shape.

3 THE LIVING LAB HARMONIZATION CUBE - ROW "SET UP" IN LIVERUR (the Austrian sample by BAB)

3.1 LIVERUR Step 1 - the Austrian (academic-non-academic) practical approach

Based on the **T3.3. leader (TRA)** instructions through Skype- conference call, email exchanges and Guideline, a working-team of the **Federal Institute of Agricultural Economics, Rural and Mountain Research (BAB)** fro m Austria adapted a general view of the Harmonization Cube - based on their knowledge and literature review, brainstorming - not as a pilot region partner and therefore not on the hand of concrete projects in a certain environment.

This template has been used by ALL Partners as a model template for well harmonised academic and non-academic collaboration within the **LIVERUR** consortium partners.

Living Lab harmonization cube - row "setup"
Task 3.3 BAB, 2019 04 05

Organisational issues	Contextual issues	Technological issues
User involvement		
• Users should see a clear benefit • Users must feel that their opinion is heard and important • Users should have a certain responsibility • Don't overstrain the users (their commitment regarding time and own expenses) • Adopt the users' language • Clarify that there is no right or wrong • Don't only give them tasks to carry out, also ask users (e.g. what they would do, what product or service would make their lives easier) • Mark the end of certain tasks so there is a feeling of achievement	• Target users have to be clearly defined • Promote and value diversity (age, gender, origin, expertise, expectations etc.) • Have a plan B ready if users leave the Living Lab • Transparency is important	• Provide support for the IT infrastructure used in the Living Lab • Work with (hardware, software and physical space) infrastructure that is accessible to everyone involved in the Living Lab • Define a way to share information • Provide also physical space to meet for the co-creation, not only virtual • Thinkable: interviews (face to face, telephone), surveys, platform based methods, newsletters, e-mail, social media • Traditional ways of communication not to forget (mouth to mouth, notice boards in community centers, direct mails, municipal information sheets...)

Organisational issues	Contextual issues	Technological issues
Service creation "process of developing new ideas, testing these in the Living Labs and the use of the real-life user-data in the design processes"		
• Considerations about which services are necessary • Efficient and sustainable organization • Considerations how to achieve best trainings	• Formulate a vision • Consider not only developing innovative products/ services, but also advancing established products/ services using innovative and open co-creation processes and methods • Co-creation	• Using modern and traditional communication (see above) • Interactive communication (instead of one-way communication)
Infrastructure "The infrastructure perspective deals with the services and technologies needed to perform measurements and analyse the collected data. Examples of these are networks, servers, statistical tools, and end user applications performing the measurements. Infrastructure does not refer to the services and technologies under control of the Living Lab. Examples that do illustrate infrastructure are open networks that users are connected to and the sensors in a telephone."		

• Who is responsible for keeping the infrastructure up and running? • Qualified personnel or services needed • What is the critical infrastructure (i.e. the Living Lab cannot work without it)	• Which infrastructure is already available and which is to develop • Efficiency and sustainability of infrastructure • Clarify all questions regarding safety, storage and use of data, both for the time when the Living Lab is active and the time after	• Work with IT infrastructure (hardware, software) that is accessible to everyone involved in the Living Lab (user-friendly…) • Minimum requirements for the initial phase
Governance (only internal!) "organisation of the Living Lab as a whole and the interaction between its members"		
• Is everyone clear on, and ok with the responsibilities and roles, representatives, deputies, coordination, voting processes… defined in the Living Lab (rules of procedures)?	• Reflection and learning from mistakes, regarding outputs, outcomes of and the communication within the Living Lab • Efficient, sustainable structures	• Openness, transparency, periodic information • Innovative, user-friendly • Ongoing evaluation, improvements
Innovation outcomes		
• Develop expertise on working in Living Labs • Develop mutual understanding and awareness • Recognize existing needs (rather than create new ones) • Internal, external viewpoints • Qualified moderation	• Clearly defined target markets • Clear benefit fo stakeholders, users • transfer awareness, knowledge and experience from working in the Living Lab to work and life outside the Living Lab	• Periodic events, exchange • Sustainable implementation

Organisational issues	Contextual issues	Technological issues
Methods and tools		
• Interviews • Surveys • Workshops • World café • Trainings • Stakeholder analysis • SWOT • Cost-benefit analysis • Moderated activities • Co-creation • Intuitive designs • To reduce blind spots, work with a devil's advocate (someone who contradicts everything and points out the bad)	• Harmonisation cube (?)	• Easy to implement tools • User-friendly • Easy to understand • Language of the stakeholders and users • Practical and not too theoretical

Table 2. The Living Lab Harmonization Cube to be filled by All.

3.2 LIVERUR Step 2 - the Austrian (academic-non-academic) practical approach.

All Austrian partners (academic and non-academic) worked together as "twinning partners" with stakeholders during a workshop in the pilot-region organized by RMB.

In order to provide an additional more concrete version of Task 3.3. the new Circular Rural "**Living Lab Südburgenland**" provided a filled template, b**y the twinning partnership of Regionalmanagement Burgerland GmbH (RMB), Federal Institute of Agricultural Economics, Rural and Mountain Research (BAB) and Zentrum fur Soziale Innovation GmbH (ZSI)** from Austria.

Living Lab harmonization cube - row "setup"

Task 3.3 Living Lab Südburgenland, 2019 04 12, RMB, BAB, ZSI

Living Lab Südburgenland (LLSB) will be the first Living Lab implemented in the federal state of Burgenland. **The vision of the Living Lab is to achieve food sovereignty in the region of "Südburgenland" by stimulating product and service innovations mainly in the fields of agriculture and food production**. LLSB wants to achieve this ambitious goal by using available resources more innovatively and more efficiently and by promoting the principle of circularity in the local business cycle.

More specifically, the **challenge of food sovereignty shall be met by various initiatives like innovative use of fallow land, new forms of (technologically supported) regional goods distribution and use of existing potentials like in fruit production**. Awareness of regional resources, regional production, regional cycles as well as awareness of the relevance of food sovereignty and landscape amenities should be strengthened among potential consumers.

Initial work
Prior to setting up the Living Lab and working out the six sides of the harmonisation cube (user involvement, service creation, infrastructure, governance, innovation outcomes and methods and tools), the stakeholder groups also decided to discuss the following issues: • Take into account the broader picture (e.g. goals, processes and interlinkages, effects on society) rather than thinking in terms of a specific business idea only (e.g. achieve a certain sales revenue from a certain product). • Develop a long-term vision (e.g. 20 years) • Make benefits visible (e.g. improved convenience, improved availability of regional foods). • See if someone else is already developing a similar project.

User involvement
How – why: • Far-reaching awareness campaign – to raise awareness on food sovereignty in Südburgenland. • Intermediaries (e.g. LAG – Local Action Group manager) – to keep people motivated • Cooperatives and/or foundations – for financing the regular operation of businesses (e.g. fruit processing facility). • Trust-funds – for financing the Living Lab and its actions. Users to be involved: • Local communities • Local farmers.. • Entrepreneurs, businesses, large-scale buyers (e.g. hospitals). • Consumers (regular consumers, e.g. locals, diaspora/returners; occasional consumers, e.g. tourists). • Public institutions (e.g. kindergarten, schools, hospitals, nursing homes, various organisations).
Service creation
• Common marketing (e.g. one shop selling products of the participating regional producers) • Common processing of goods (e.g. filling of fruit juices). • Logistic solutions (e.g. doorstep food delivery, pre-order and pick up from a food collection point). • Develop further innovative solutions in the frame of the Living Lab. • Develop models for common employment contracts. • Increase involvement of public institutions (e.g. kindergarten, schools, hospitals, nursing homes, various organisations) in activities of awareness creation and sales markets.
Infrastructure
• Online vacancy network (collecting data on vacancy of vineyards and allow matchmaking). • Logistics software (connecting online shops, bringing goods to the people, assessing demand and production). • Available processing units (e.g. mobile fruit processing solutions).

Governance
• Cooperation of various actors in the region: - Municipalities, Chamber of Agriculture, LAG-Manager and other intermediaries, local businesses, farmers, association, Civil Society Organisations, Nature park managements. • Implement a new regional development fund pooling payments of the participating municipalities. All regional development activities are covered in this fund so municipalities have a single contact point. • A dedicated Living Lab manager is responsible for managing the funds from this new regional development structure and he/she needs the talent to persuade stakeholders of the activities developed in the Living Lab. • Incentives for stakeholders to participate (e.g. simplifying bureaucracy).
Innovation outcomes
• Access to regional food for all. • Access to information on regional production, processing and resources (e.g. vacancies of vineyards, existing orchards). • Regional demand should be satisfied but also export is an objective (e.g. Diaspora, Tourists) • High quality products, easy to recognise (e.g. using regional labels). • Regional added value.
Methods and tools
• Participatory processes and participatory organizational structure fostering ownership (e.g. cooperative). • Implement a new fund for regional development pooling payments of the participating municipalities. All regional development activities are covered in this fund so municipalities have a single contact point. • Crowdfunding. • Info-days. • Regular stakeholder meetings. • Making benefits visible.

Table 3. The filled template by the Austrian partners.

3.3 Task 3.3. template has been filled up.

The following table summarizes the filled up **Living Lab Harmonization Cube template by 22 LIVERUR Partners**. The templates are attached to Annex 1.

Partner name/acronym	The Living Lab Harmonization Cube template has been filled up
RMB - BAB - ZSI	1 template
UHLAVA- WIRELESS	1 template
CAPdl - CRAB	2 templates
ADRI - UCAM	1 template
ZEKA	1 template
ZSA	1 template
FRCT – TERINOV - CLEOPA	1 template
Dar Margoum Association	1 template
TRA	1 template
IED	1 template
E35 - CESIE	2 templates
UL	1 template
BCA	1 template
UCT	1 template
WTelecom	1 template

Table 4. The list of filled T3.3 template by LIVERUR Partners.

4 LIVERUR: TRANSITION TO CIRCULAR ECONOMY THROUGH RURAL LIVING LABS

The next step will be focused on the actions that the **LIVERUR** partners will be doing in the frames of the WP3-WP4 and WP5.

For **LIVERUR** this means **focusing on circular economy principles and how the LIVERUR partners can work with the designed & analysed supply chain and their actors & clients to develop models for various application areas** with high impact.

Additionally, **where the new Circular Rural Living Labs can retain value of raw materials/ production and resources in various rural context**.

4.1 LIVERUR added value to the Harmonisation Cube of RLLs.

To implement the mentioned actions, we need far more collaboration between clients (end-users), contractors and suppliers, farmers, cooperatives, service providers, logistic partners, local government and citizen.

Sustainability and circularity has to become a more common focus on our pilot projects and we need to engage early to be able to make it real. Working early in the design process (how to setup of new Rural Living Labs) **to design out route of sustainability** (from raw materials to waste), **to accommodate different phases of production/re-usage, to build in flexibility and design for deconstruction** are all solutions which we can implement today and will **reduce both cost and embodied carbon over the lifecycle of any activities in the rural economy**.

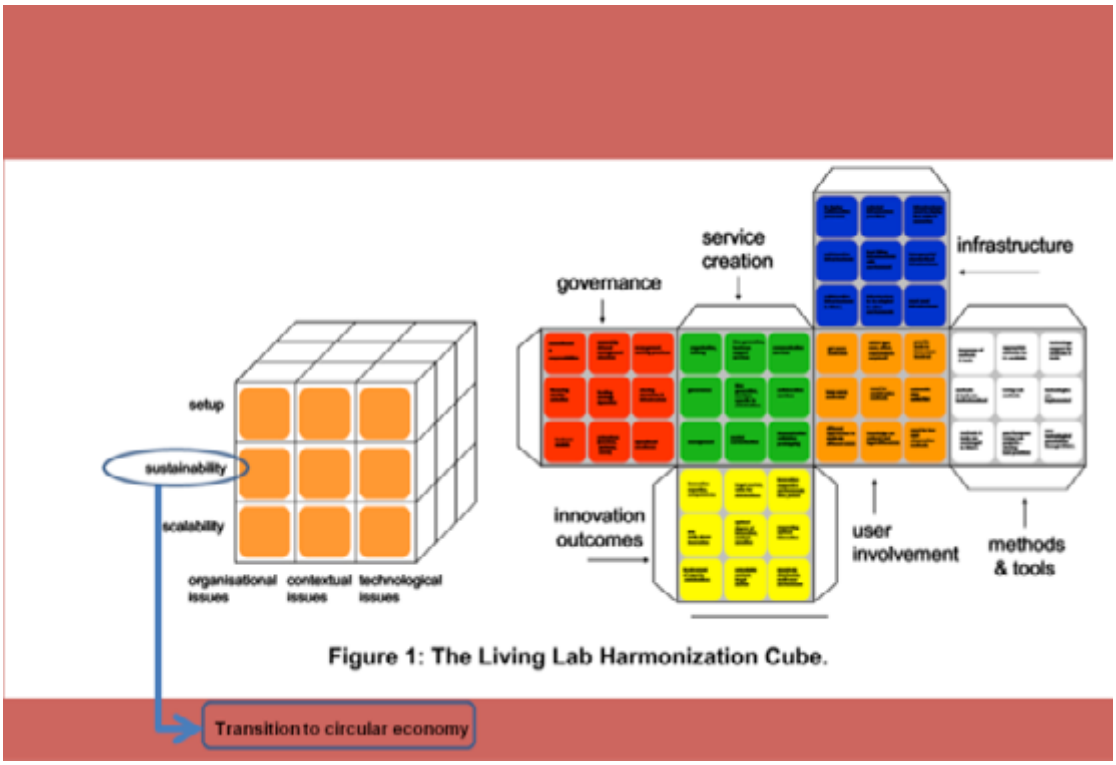


Figure 6. Transition to Circular Economy via the LL Harmonisation Cube.

4.2 The sustainability aspect and value of Circular Rural Living Labs

The further step is to design and assess the sustainability aspects and value of Circular Rural Living Labs. What is the correlation between Sustainability and Circular economy?

Sustainability is a **multidimensional concept**, that includes environmental, economic and social perspectives. **Circular economy is a model that aims at reducing the environmental burden through the valorisation of every material flow** (even those that are considered waste in a traditional scheme), and it certainly has impacts on each of the three pillars of sustainability.

Sustainability is the objective, while circular economy can be an instrument to reach this objective[2].

2 http://www.sciencedirect.com/science/article/pii/S0959652616318273

By the Italian researchers from Department of Engineering of the University of Salento[3], the Sustainability is about understanding ALL interactions between human, environmental, and engineered systems to preserve the current state. Under this perspective phenomena like population growth are fundamental. **The Circular Economy** instead is a way **to reinterpret the ECONOMIC paradigm with sustainability principles in mind**; hence it contributes to solve the complex challenges that threaten the integrity of life support systems of the planet, but is not a holistic approach.

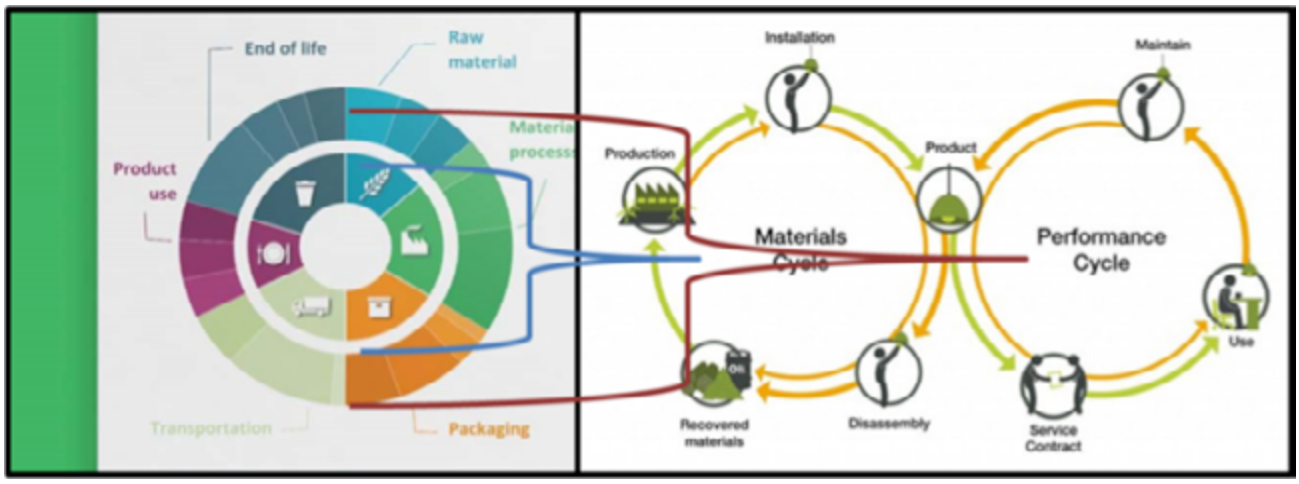


Figure 7. Sustainability in Circular Rural Living Labs.

Sustainability in the context of Circular Rural Living Labs would be assessed by the overall value chain of the selected app areas of the 13 new **LIVERUR** Circular Rural Living Labs.

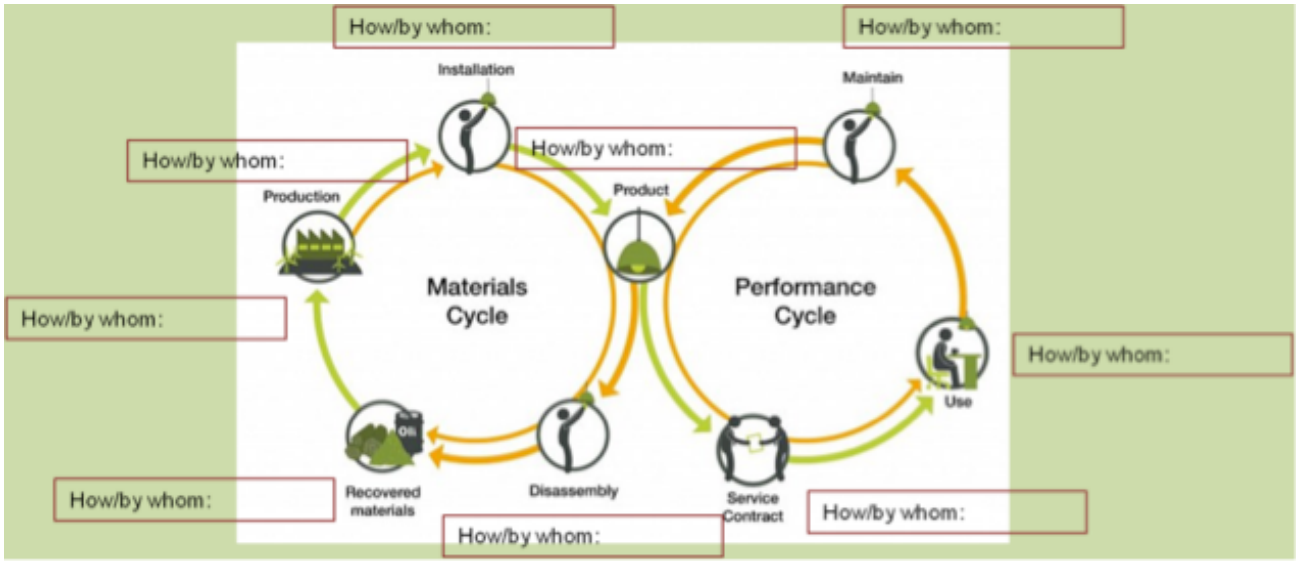


Figure 8. The value chain of the selected apps within LIVERUR.

3 Valerio Elia Maria, Grazia Gnoni and FabianaTor: Measuring circular economy strategies through index methods: A critical analysis (same link) (https://www.sciencedirect.com/science/article/pii/S0959652616318273?via%3Dihub#).

CONCLUSION

In D3.3. the key elements of the user driven Open innovation and Living Lab approach were considered to design the new LIVERUR circular living labs.

The approach described in this report, especially the key elements used to describe the living lab projects can be used to design future projects and living lab activities in the context of rural innovation in circular economy, with high impact to the sustainability.

Activities that have contributed to the development of this report include:

- Assessment of infrastructural and behavioural interventions, as well as identification of rural economies and territorial challenges and opportunities that have been carried out as part of the WP2 and WP3 activities to preparing the actions of WP4 and WP5.

- Direct involvement of the project partners and learning from the insights of previous experiences and knowledge of the Collaboration@Rural FP6 and Collabs FP7 projects via the Living Lab Harmonisation Cube scheme.

- Local/regional workshops with both internal and external project stakeholders (organized by academic and non-academic partners as new twinning partnership within LIVERUR), including information reported in the Deliverable 3.1 and Deliverable 3.2. and email exchanges, detailed ppt Guideline and Skype Conference call with All Partners and individual consultation by request with the WP3 leader, TR Associates.

There is a broad variety of methods and tools used to support innovation processes in Living Labs. According to Leminen and Westerlung (2017), more experienced living labs tend to use standardized tools but emerging living labs on contrary follow a more customized approach. In their paper, Leminen and Westerlung (2017) propose a framework for categorizing living labs based on their innovation process (incremental vs linear) and tools (standardized vs customized).

They further argue that:

1. Standardized tools decrease the complexity of innovation activities, and decreasing complexity leads to predefined incremental innovation outcomes in living labs.

2. A predefined linear innovation process decreases the complexity of innovation activities, and decreasing complexity leads to predefined incremental innovation outcomes.

3. Adopting an iterative, non-linear innovation process and customized tools for innovation activities increase the likelihood of an undefined and a novel innovation outcome (Leminen and Westerlung, 2017).

In D3.3. the proposed LIVERUR methodology was t**he Living Lab Harmonization Cube approach, which is an useful technique that enables the definition of a shared reference of methods and tools in order to perfectly visualise the correlation among the sustainability and circular economy by a rural living lab framework**.

ANNEXES

ANNEX 1: The Living Lab Harmonization Cube: the communicating living labs in rural context (filled templates)

No 1

Living Lab harmonization cube - row "setup"

Task 3.3 Uhlava - WIRELESS

Organisational issues	Contextual issues	Technological issues
User involvement		
• Easy "rules" should be followed to guarantee a kind of equity for each partner(user) and to require responsibility • Set easy- to -reach small milestones to motivate the co-opperating entities	• What sense and possible benefits does it have to be part of the RLL community • How much difference is there in different user groups involvement	• Use the easiest and most traditional means of communication for different groups of users • Rely mostly on local existing HW and SW infrastructure
Services creation		
• Define what key services and activities are needed, if these are well distributed in the pi-loting area or are completely missing • Update the information due to development of the area and society	• Make the users think of an ideal combination of activities(as well as production), services and accompanying infrastructure	• Use supportive technologies to promote the service (co) creation procedure (e.g. IT infrastructure, software, management information systems, etc.)
Infrastructure		
• Set up clear rules for connecting the relevant IT infrastructure and the levels of accessibility of existing data to different users	• Look for smart rural solutions to try to transfer some and introduce them step-by -step in the pilot region	• Start with IT infrastructure existing in the pilot area • With introducing new technologies always have a backing plan of supporting information exchange
Governance		
• Set up basic rules of running the RLL, responsibilities, management, archiving data • Share information, be aware of GDPR topics • Principles of evaluation	• Try to make up a sustainable independent structure regarding the changing socio-economic conditions	• Think of keeping the records and data, GDPR

Living Lab harmonization cube - row “setup“

Task 3.3 Uhlava - WIRELESS

Organisational issues	Contextual issues	Technological issues
Innovation outcomes		
• Depict the innovative steps, processes and outcomes • Search for understanding, development and acceptance of the new	• Transfer all possible positive outcomes in the pilot zone as well as other similar environments (rural areas) via cooperating networks and PR	• Search for new ways of dissemination through new technologies and adequate PR
Methods and tools		
• Vast number of methods and tools taking into account that mostly nothing is wrong, supporting active user participation and knowledge and opinion sharing	• Testing and evaluating the selected methods and tools in order to assess their suitability	• Insisting on user friendly environment and plenty of support • Practical approaches, user friendly language

No 2

Living Lab Harmonization Cube

T3.3. Derval/France by CAPdl - CRAB

Organisational issues	Contextual issues	Technological issues
User involvement		
The LL's marketing strategy • Reduce the energetic dependence of the territory of Derval by developing renewables energies or energy savings, by mobilizing the stakeholders which are present on the territory of Derval, The agricultural system based on breeding cattle pigs and poultry offers to the territory a large scale of opportunities.	*Interest of participants* • For ideation and experimentation (prototyping: experimental farm of Derval) • Agricultural school of Derval • Local Industries • SAS agri-méthane • Chamber of industry • National Institute for energy (ADEME) • Local authorities • CEA teh(French institute of research) • Citizens concerned by reducing their dependence of non-renewables energies by mobilizing associations • Departmental authorities of wastes management (SYDELA) • Chamber of agriculture	*Organization and implementation of events in order to raise awareness among the local community:* 1 Meeting b to b with the five main stakeholders in the month of May 2019. 2 Autumn 2019 organizing a visit of SAS agri-methane (just built during 2018 and in the beginning of 2019) For all farmers of Derval, Opened to the general public (all inhabitants of Derval) Collect their expectations about the thematic reduce the energetic dependence of the territory.
Services creation		
Services to be provide • Reduce the consumption of energy for farmers by developing "plot of land exchanges" in order to have a better • Organization of the works on the farm, and reduce the energy consumption and the production of GES. • Work with citizens, with school, and local authorities about mobility's, car , bus , about reduce the consumption of energy, and productions of renewables energies.	*Long term engagement* *Transferability of the developed services* *First success stories* • Support on the SAS agri-methane implemented in 2018 which manage a methanization tool with: farmers, the local authorities, the school of Derval, and some industrials which warm the swimming pool for inhabitants of the town of Derval, which warm the school of Derval in the fist times… • Regional level: 25 projects of methanisation associating farmers, and often local authorities.	• Creation of added value by valorizing new products like algae (sea-weeds) produced from digestat of methanization. • Creation of new types energies for agricultural engines(BIOGNV, Hydrogen). • Valorizing the wastes like resources, to produce new kinds of renewables energies, ex: production of biochar from wastes of wood.

Living Lab Harmonization Cube

T3.3. Derval/France by CAPdl - CRAB

Organisational issues	Contextual issues	Technological issues
Infrastructure		
Operating and maintaining the relevant infrastructure • The local authorities of Derval, which have in charge some equipment like the swimming-pool which is part warmed by biogas of SAS Agri-méthane. They will make available the places for meeting. • The school of Derval can be mobilized about places for meeting too. • Chamber of agriculture will take in charge the administrative tasks, and mobilized his data, cartographic data, about the territory of Derval.	*Efficiency and sustainability of infrastructure* • The experimental farm of Derval which is the regional tool for Chamber of agriculture to elaborate, to prototype. • Innovations about reducing the dependence about energy in farms.	• Mobilizing crow-funding about some opportunities.
Governance		
Role of public funding Balance between public and private involvement: • **Public involvement** by mobilizing, the local authorities of Derval, the departemental energetic institution of energy SYDELA, the CEA Tech. • **Private involvement:** by mobilizing industries, Chamber of industrie, by mobilizing citizens with local associations, by mobilizing the agricultural school of Derval. *Development of the LL's financial management and governance* • Beginning 2019/2020 with the Liverur funds and the public funds of Chamber of agriculture.	*Describing the relevant management structures and procedures: level of openness* • A "steering committee, with Chamber of agriculture, The local authorities of Derval, the school of Derval , the Chamber of industry, the associations gathering citizens, the local authorities of Chateaubriant, the energetic Departemental institution of energy(SYDELA), the CEA-tech. • A "Technic committee" gathering largely all stakeholders' technics, scientists, firms... His role: co-design the objectives decided in the first one in concrete actions: Who?, When,? What? How is it possible to carry out?	

Living Lab Harmonization Cube

T3.3. Derval/France by CAPdl - CRAB

Organisational issues	Contextual issues	Technological issues
Innovation outcomes		
Design the process for the development and the exploitation of the innovation outcomes: • It's proposed a way for stakeholders and users in which the living-lab offer opportunities to the people of the territory to implement for us new ways for reducing the energetic dependence, reduce the ecologic footprint and contribute to a new local renewable mix energetic.	*Transferability to other contexts and domains, platform scalability* • The experimental farm of Derval is the regional tool of Chamber of agriculture to elaborate, to test to promote innovations about reducing the dependence of energy for breeding farmers mainly. We have contact with French institutes of research which propose us some innovations joining the methanisation toll implemented a few months ago.	
Methods and tools		
Acquiring relevant user data. • **mobilizing living-lab** methods for associate stakeholders, • mobilizing co-design methods for ideation and for mobilizing citizens, • **mobilizing expertise** of CEA tech, French institute of research about innovations implemented about energylike hydrogen production, algae growing from wastes of methanisation non limitative possibilities, • **mobilizing data** about farms on the territory of Derval, and cartographic data about it, data from the Territorial Energetic plan (PCAET), and from the local authorities (Comunauté de communes)	*Testing the selected methods and tools in order to assess their suitability:* • Support on the SAS agri-methane implemented in 2018 which manage a methanization industry mobilizing farmers, the local authorities, the school of Derval, and some industrials partners.	*Enhancing visibility:* • Mobilizing data from territorial studies to implement the project: analysis of fermentable and woody bio resource.

No 3

Living Lab Harmonization Cube

T3.3. Pays de Retz by CAPdl - CRAB

Organisational issues	Contextual issues	Technological issues
User involvement		
The LL's Marketing strategy • Reduce the uses of phytosanitary products by the users of the water-shed: farmers, local authorities and citizens, and limit transfer to the nature • Territory concerned: littorals water-sheds of the town of PORNIC which bring water to two lakes used for potable water for inhabitants of the local authorities of PORNIC. • The water-shed concerned around one hundred farmers. *Motivation of the users involved in the LL* • Users of potable water represented by mobilizing environmental associations "FNE and Que choisir" • The local authorities of Pornic who asked some changes for agricultural practices • The dispenser of potable water "Atlantic Eau" who ask to farmers, changes about agricultural practices.	*Definition and Identification of interests of participants and stakeholders* • "Communauté d'Aglomération de PORNIC": the local authorities, which represent the public involvement and the citizens • "SYLOA" the French structure in charge of water (SAGE Estuaire): which give the rules and the quantitative and qualitative objectives for water masses. • Association of bay de Bourgneuf pour le SAGE de Bourgneuf, (Hydrlaulic Syndicat d'Aménagement Hydraulique du Sud Loire). • "Pole d'Equilibre Territorial et Rural", to support landscape questions and involvement's • Dispenser of potable water "Atlantic Eau" first engaged in the responsibility of water quality. He actually pays for preventive activities to improve water quality. • Farmers of the territory of the water -shed to improve their practicing's and contribute to the way to. • Citizens by mobilizing environmental associations "FNE and Que choisir".	*Organization and implementation of events in order to raise awareness among the local community* • Individual meetings with other users than farmers to present the Poppy project • For the agricultural community, an alternative weeding testing and demonstration platform is set up and an information day open to all farmers on June 19, 2019. • For agricultural partners organizing the platform, preparatory and debriefing meetings.

Living Lab Harmonization Cube

T3.3. Pays de Retz by CAPdl - CRAB

Organisational issues	Contextual issues	Technological issues
Services creation		
Designation and definition Services to be provided: • for farmers' individual visits: smoking plan, agronomic advices and politic agricultural commune PAC advices, • mobilize existing farmers groups, • "soil conservation "Ecophyto and GIEE soils and reduction of uses of phytosanitary.	*Establishment of a co-creation system* • Mobilization of a deck of cards allowing water actors to take someone else's point of view. • Local-regional-national backgrounds. We have a national reference with a method developed by **INRA/IRSTEA named "Brie'eau"** which had well mobilized farmers about water quality in the past few years. http://www.sage-estuaire-loire.org/articles/61-les-rendez-vous-du-sage.html	*Setting up the supportive technologies to ensure and promote the service creation.* • Group of farmers mobilizing **co-design process** • Mobilizing INRA/IRSTEA/ method about improving the quality of water Three steps of the process: 1. Share the diversity of the representations by different actors of the territory, 2. Imagine possible scenarios integrating changes of practices for farmers 3. Identification of brakes and Levers before engagement of actions in relationship with the changes imagined before.
Infrastructure		
Operating and maintaining the relevant infrastructure • Chamber of agriculture will be the administrative center, for managerial tasks. but meetings can't take place there, because of it symbolize only one part of stakeholders. • We proposed to gather stakeholders in the local authorities, but the COPIL will decide. • Local authorities of Pornic for meetings. • Tools: data bases, cartographic data bases, agronomics demonstration platforms.	*Efficiency and sustainability of infrastructure*	*Ensure the scalability and sustainability of the infrastructure*

Living Lab Harmonization Cube

T3.3. Pays de Retz by CAPdl - CRAB

Organisational issues	Contextual issues	Technological issues
Governance		

Role of public funding
 	
• Mobilizing Agence de l'EAU which can pay for preventive actions for quality of water
 	
Balance between public and private involvement.
 	
• **Public involvement** by mobilizing the local authorities of PORNIC, "Atlantic Eau"(the water potable distributor) and the administrative responsible of the quality water of masses (SAGE Estuaire).
  • Mobilizing the French national institutes of agronomic researchs INRA/IRSTEA.
 	
• **Private involvement** by, mobilizing cooperatives collecting agricultural products , milk ,meat, and furnishing farmers with phytosanitary products.
  • Mobilizing associations of farmers watering their lands.
  • Mobilizing associations of consumers.
  • Mobilizing associations of fishers.
  • Mobilizing oyster farmers.
  • Mobilizing environmental associations like "FNE".
	Describing the relevant management structures and procedures
	Level of openness.
	
	• A "steering committee" with water users, with Atlantic Eau,SYLOA, Local authorities, and Chamber of agriculture.
	Members of range one: ATLANTIC EAU (Departmental organization of potable water), local authorities of PORNIC, SYLOA (SAGE Estuaire), Chamber of agriculture and the citizen: "UFC que choisir "or/and FNE."
	• A "technic committee" gathering largely all stakeholders' technics, scientists, firms...
	His role: co-design the objectives decided in the first one in concrete actions: Who? When,? What? How is it possible to carry out?	

Living Lab Harmonization Cube

T3.3. Pays de Retz by CAPdl - CRAB

Organisational issues	Contextual issues	Technological issues
Innovation outcomes		
	Transferability to other contexts and domains platform scalability • Mobilize the sellers of phytosanitary products far from their officials representing which are participating to the movement to improve quality of water. • Involve the processing and commerce lines of agricultural firms, so indirectly the consumers. • Reassure farmers and users about the economic and technic risks-taking about the decreasing uses of phytosanitary products.	
Methods and tools		
Selection and description of the LL's methods and tools that will allow acquiring relevant user data on a large scale: • **Co-design process's** during meetings: using methodology INRA/IRSTEA/ about improving the quality of water Three steps of the process's: 1. Representation of problems. 2. Possible scenarios. 3. Identification of brakes and levers.	*Testing the evaluating methods and tools in order to assess their suitability*: • **One-on-one meetings** with non-farmers to present the project and measure their interest in contributing to co-construction: UFC which to choose, and environmental associations "Poppies, and Swallow." • Take advantage of the demonstration platform for crops conducted with few pesticides.	

No 4

Living Lab harmonization cube - row "setup"

Task 3.3 ADRI - UCAM

User involvement		
Get users motivated Organisational issues	**Which type user, effort, expectations required?** Contextual issues	**Provide tools to have users involved** Technological issues
• Users should see a clear benefit • Users must feel that their opinion is heard and take it into account • Users should have a certain responsibility • Don't overstrain the users (their commitment regarding time and own expenses) • Adopt the users' language • Clarify that there is no right or wrong • Don't only give them tasks to carry out, also ask users (e.g. what they would do, what product or service would make their lives easier) • Mark the end of certain tasks so there is a feeling of achievement • It is important to assure that the user has understood what is a living lab and what is the service that can be obtained • Emphasize the individual advantages that users achieve by being part of the LL • Ask users what are their motivations according to age groups and social profiles, and have a clear overview • Use workspaces where users feel comfortable and structure the place • Establish an involvement commitment and permanence	• Target users have to be clearly defined • Promote and value diversity (age, gender, origin, expertise, expectations etc.) • Have a plan B ready if users leave the Living Lab • Transparency is important • Maintain a space of open collaboration • Take into account users belonging to social exclusion groups • Users training in a regular way	• Provide support for the IT infrastructure used in the Living Lab • Work with (hardware, software and physical space) infrastructure that is accessible to everyone involved in the Living Lab • Define a way to share information • Provide also physical space to meet for the co-creation, not only virtual • Thinkable: interviews (face to face, telephone), surveys, platform based methods, newsletters, e-mail, social media, • Traditional ways of communication not to forget (mouth to mouth, notice boards in community centers, direct mails, municipial information sheets…) • Stablish ways of on-line data collection (online forms, surveys, opinion poll…) • Provide Training in the use of ICT • Stablish a support/adviser board to assure the user reach the information • The "intersectoral tables" provide a high value: all the agents involved, each having a piece of information, participate by contributing their point of view to a proposal based on their experience and knowledge • "Closed groups" on Facebook works very well to share ideas, information, etc

Living Lab harmonization cube - row "setup"

Task 3.3 ADRI - UCAM

Service creation ***"process of developing new ideas, testing these in the Living Labs and the use of the real-life user-data in the design processes"***		
Organisation, training Organisational issues	**Idea generation, business suport services** Contextual issues	**Communication services** Technological issues
• Considerations about which services are necessary • Efficient and sustainable organization • Considerations how to achieve best trainings • Use of Brainstorming method with an inspiring introduction to open debate • Establish an organization chart which clear functions for the application of the living lab	• Formulate a vision • Consider not only developing innovative products/ services, but also advancing established products/ services using innovative and open co-creation processes and methods • Co-creation • Will be necessary to define market strategies for the resulting products • Legal and business models types (e.g., IPR) • Take into account funding sources	• Using modern and traditional communication (see above) • Interactive communication (instead of one-way communication) • Collect all the necessary information in a database to be used by the participants • Address to all technological environments where the target audience moves • Establish communication methods for users with different capacities
Infrastructure "The infrastructure perspective deals with the services and technologies needed to perform measurements and analyse the collected data. Examples of these are networks, servers, statistical tools, and end user applications performing the measurements. Infrastructure does not refer to the services and technologies under control of the Living Lab. Examples that do illustrate infrastructure are open networks that users are connected to and the sensors in a telephone."		
To deploy collaboration processes Organisational issues	**Selected infrastructure providers** Contextual issues	**Infrastructures used to deploy first defined scenarios** Technological issues
• Who is responsible for keeping the infrastructure up and running? • Qualified personnel or services needed • What is the critical infrastructure (i.e. the Living Lab cannot work without it) • Ensure that the infrastructure endure in time (long-term infrastructure)	• Which infrastructure is already available and which is to develop • Efficiency and sustainability of infrastructure • Clarify all questions regarding safety, storage and use of data, both for the time when the Living Lab is active and the time after • Infrastructure costs • Maintenance cost	• Work with IT infrastructure (hardware, software) that is accessible to everyone involved in the Living Lab (user-friendly…) • Minimum requirements for the initial phase • Simple and easy to use • "Change" management and configuration of services / software tools

Living Lab harmonization cube - row “setup”

Task 3.3 ADRI - UCAM

Governance (only internal!) “organisation of the Living Lab as a whole and the interaction between its members”		
Commitment & responsibilities Organisational issues	**Ownership drivers/ management structure** Contextual issues	**Management working practices** Technological issues
• Is everyone clear on, and ok with the responsibilities and roles, representatives, deputies, coordination, voting processes… defined in the Living Lab (rules of procedures)? • Establish agreements with the specific and general conditions to be signed by the members living lab • Clearly determine channels of communication and frequency among the people involved in the organization	• Reflection and learning from mistakes, regarding outputs, outcomes of and the communication within the Living Lab • Efficient, sustainable structures • Establish clear goals of each involved organization • Establish periodic controls and define a control department and those responsible to assure the quality of the management	• Openness, transparency, periodic information • Innovative, user-friendly • Ongoing evaluation, improvements
Innovation outcomes		
Innovation expertise, competencies Organisational issues	**Target market, value for stakeholders** Contextual issues	**Innovation-supportive environments Idea, Patent** Technological issues
• Develop expertise on working in Living Labs • Develop mutual understanding and awareness • Recognize existing needs (rather than create new ones) • Internal-external viewpoints • Qualified moderation • Selection of the best innovation outcomes according to innovation expertise • Use adequate indicators, measurements and detection techniques to observe key processes and results • Take into account issues regarding collaboration of involved parties in relation to IPR	• Clearly defined target markets • Clear benefit for stakeholders, users • Transfer awareness, knowledge and experience from working in the Living Lab to work and life outside the Living Lab • Assure methods to work together with the involved parties and share results	• Periodic events, exchange • Sustainable implementation

Living Lab harmonization cube - row “setup”

Task 3.3 ADRI - UCAM

Methods and tools		
Taxonomy of methods and tools Organisational issues	**Appropriate methods for LL available** Contextual issues	**Technology support for methods & tools** Technological issues
• Interviews • Surveys • Workshops • World cafe • Trainings • Stakeholder analysis • SWOT • Cost-benefit analysis • Moderated activities • Co-creation • Intuitive designs • To reduce blind spots, work with a devil’s advocate (someone who contradicts everything and points out the bad)	• Harmonisation cube • Use of scale models, demo, mock-ups, prototypes…	• Easy to implement tools • User-friendly • Easy to understand • Language of the stakeholders and users • Practical and not too theoretical • Is the chosen tool easily accessible to users? Do they know how to use it? • Open-source

No 5

Living Lab Harmonization Cube

T3.3. ZEKA

Organisational issues	Contextual issues	Technological issues
User involvement		
• Design of the LL's "marketing strategy", • Motivation of the users involved in the LL	• Definition and identification of interests of participants and stakeholders • Sustainability of the users' involvement in the LL's procedures and activities • Exchanging contextual information between stakeholders	• Organization and implementation of events in order to raise awareness among the local community
Service creation		
• Design and definition of the services to be provided	• Long term engagement • Transferability of the developed services • Establishment of a co-creation system • First success stories • Local-regional-national backgrounds • Cultural backgrounds	• Setting up the supportive technologies to ensure and promote the service creation procedure
Infrastructure		
• Operating and maintaining the relevant infrastructure • Amount of resources	• Efficiency and sustainability of infrastructure	• Definition of the minimum requirements of the LL's infrastructure • Ensuring the scalability and sustainability of the infrastructure
Governance		
• Role of public funding • Development of the LL's financial management and governance • Balance between public and private involvement	• Describing the relevant management structures and procedures • Level of openness	• Development and/or application of management software, evaluation systems and methodologies, etc.

Living Lab Harmonization Cube

T3.3. ZEKA

Organisational issues	Contextual issues	Technological issues
Innovation outcomes		
• Design of the process for the development and exploitation of the innovation outcomes	• Transferability to other contexts and domains, platform scalability. • Adaptive innovation methodologies	• Ability to continuously respond to needs
Methods and tools		
• Selection and description of the LL's methods and tools that will allow acquiring relevant user data on a large scale	• Testing and evaluating the selected methods and tools in order to assess their suitability	• Enhancing visibility • Knowledge exchange • Interoperability

No 6

Living Lab Harmonization Cube - row "setup"

Task 3.3. Union "Farmers Parliament" by ZS

Organisational issues	Contextual issues	Technological issues
User involvement		
• Implementation of the idea/ aim • Common problem solving (environmental and economic objectives) • Regular meetings, follow up • Observation, synthesis • Informal communication in combination with formal • Field days in combination with lunch (coffee) • According to the target group (stakeholders) practical and/ or more theoretical	• Farmers, scientists, advisors, civil servants, traders, consumers • International exchange of experience, introduction with foreign similar organizational structures • Hosting experts/ interested persons	• Meetings/discussions • Importance of information – clearly and timely • Clearly defined problem/ target • Collect information/data from the State agencies • Automatically collected data • Low cost- according the list of the participants are the number grow or decline, young members appear, etc.
Service creation		
• Collaboration, communication practical skills • Legislation news • Weekly news • Quarterly magazine • Governance – open society for agriculture ecosystem and could serve/solve appropriate/actual needs	• Participation into the development of the legislation • Specific seminars for the fruits and vegetables sector • Experts services • Solving legislation gaps • Consumers requirements for more environmentally friendly grown food • Packaging – environmentally friendly • Integrated grown vegetables and fruits	• Weekly news • Social media • Establishment of the sectorial working group • Collaboration with similar sectorial/industry groups • Field demonstrations • Popularization of the methods through different channels
Infrastructure		
• Web page • Close to the decision-making systems and users	• Members and stakeholders' networks • Our members covering all territory of the country and we can reach easily	• Well-equipped office • Collaboration capability in different themes/subjects

Living Lab Harmonization Cube - row "setup"

Task 3.3. Union "Farmers Parliament" by ZS

Organisational issues	Contextual issues	Technological issues
Governance		
• Professional skills • Everybody brings for LL the own capabilities • Functions • Working practices	• Collaboration with no binding agreements • Voluntary participation and input/contribution • Subsidies • Consultancy • Services	• Representatives voted by members/users/farmers • Meeting, Board, Council, Office • Stay committed • Trust each other • Crucial effective practices • Creative culture/environment • Hold regular meetings
Innovation outcomes		
• Recognize existing needs • Innovation expertise • Cooperation • Environmentally friendly production • Agroenvironment	• Value – local production • Better production conditions • Increase competitiveness • Risk management	• Periodic events, exchange • Sustainable implementation Synthesis • Life circle
Methods and tools		
• Interviews • Surveys • Workshops • Trainings • Stakeholder analysis • Right questions in order to recognize the problem, needs identification • Web page • Information channels – magazine, weekly news, social media • Field days	• Methodology through the process • User needs for process improvement • Bringing farmers' needs with innovation developers	• Language of the stakeholders and users • Practical and not too theoretical • Certification of the organic farming • Already established training platforms (e.g. SmartFarming, Elma, FarmInc)

No 7

Living Lab harmonization cube - row "setup"

Task 3.3 FRCT - TERINOV - CLEOPA, 2019 04 15

Organisational issues	Contextual issues	Technological issues
User involvement		
• Clear idea of the Living Lab objectives and on how to sustainably manage it; • Speed up innovative ideas into market; • Comfortable and welcoming environment – no pressure! • Set the context for which one of the exercises/co-creation; • Use a time schedule for each task and go until the end; • Provide feedback – reports on the tasks – share all the information; • Use the people language! – forget the technical/scientific terminology; Cross-border collaboration is very important to accelerate innovation.	• Quadruple helix stakeholders'/ quintuple helix approach for the stakeholders' environment preservation and for a circular approach; • The LL as an "influencer" for innovation; • Clear goals • Informed participation (previous capacity building to increase participation) • Feedback (the lack of feedback on participation makes people leave); • Feeling of "family" or community (to increase voluntary participation); • Involvement since the beginning (designing strategies, preparing the physical space, designing an IT sharing platform, etc).	• IT tools accessible to everyone; • Clear definition of any IT tool that should eventually be integrated as new; • Increasing the comprehension of the IT components by all the stakeholders involved; • F2f brainstorm meetings work better; • A welcoming physical space is very important to provide the sense of "community" or "family" – "use the users" to build it!
Services creation ***"process of developing new ideas, testing these in the Living Labs and the use of the real-life user-data in the design processes"***		

Living Lab harmonization cube - row "setup"

Task 3.3 FRCT - TERINOV - CLEOPA, 2019 04 15

Organisational issues	Contextual issues	Technological issues
• Co-creation and improvement of innovative ideas; • Prior interviews to set needs of LL users and how to perform their innovations consultation/validation; • Stakeholders analysis; • Clear goals; • Clear services (co-creation portfolio and training portfolio); • Clear management; • Living Lab services "check or coupon" for innovation??!!	• Co-creation tools to bring out user ready innovation; • Ask the users their opinion before working on the product/service – it saves time and money; • Don't just ask stakeholders to help, also offer them services in exchange (free training, e.g.); • Programme carefully the Living Lab exercises, in order not to waste people time!	• IT is interesting, but in situ brainstorming sessions are more fruitful; • However, IT can be used to complement in situ sessions.
Infrastructure (IT and physical) ***"The infrastructure perspective deals with the services and technologies needed to perform measurements and analyse the collected data. Examples of these are networks, servers, statistical tools, and end user applications performing the measurements. Infrastructure does not refer to the services and technologies under control of the Living Lab. Examples that do illustrate infrastructure are open networks that users are connected to and the sensors in a telephone."***		
• Qualified services: home or outsourcing? • Type of IT infrastructure? – Collaborative? Existing platforms! • Cost of maintenance or royalties? • Sustainability of the platform - €€€	• Data protection and safety are ensured?! • ICT as a tool to facilitate new ways to co-create and develop innovations;	• Is it better to use an existing IT infrastructure; • Data safety is very important!; • User friendly IT platform; • The physical space is also very important.
Governance (only internal!) ***"organisation of the Living Lab as a whole and the interaction between its members"***		
• Clear and doable business model is fundamental; • Clear roles and responsibilities ease the management of the LL; • A team dedicated to get financing is fundamental to assure the LL sustainability and good work (training, co-creation, coaching, etc).	• Provide services that fit the Living Lab users/ stakeholders needs (consult them periodically about this); • Help them to get funding for their innovations/give the tools you have; • IPR issues – help and help funding.	• Provide a sharing and open environment to all the stakeholders, so they feel comfortable and welcome to share their ideas; • Transparency and openness are very important to make stakeholders feel part of the Living Lab; • Feedback – active consultation and conscience for better results.

Living Lab harmonization cube - row "setup"

Task 3.3 FRCT - TERINOV - CLEOPA, 2019 04 15

Organisational issues	Contextual issues	Technological issues
Innovation outcomes		
• IPR consultancy and funding is very important: many innovators are spin-offs or start-ups who don't have money to save their ideas; • Promote the involvement of experts in relevant areas for the Living Lab (IT, consultants, creatives, etc) for its faster growth).	• Set a climate of open communication and interaction between all parts in order to grow the "family".	• Open information on the Living Lab activities; • Constant reporting / Open reporting; • Multi-user "family" environment; • The Living Lab as "our place for innovation" – the groupie/ family sense to develop a supportive multi-actor environment.
Methods and tools		
• Support in creating clear concept, in developing prototypes and in market uptake for the final product or service; • Canvas Business Model; • SWOT analysis; • Training in financing, IPR and project management (PMI, SCRUM, etc); • stakeholders' analysis; • Result oriented co-creation exercises; • Capacity building workshops; • Creative thinking exercises; • Financing to provide all the previous points?!	• Meth• Feedback surveys for services improvement and innovation according to user's needs – dynamic process; • The stakeholders work and have family – never forget it.	• User friendly IT tools; • Result oriented; • Understandable language/ user friendly language.

No 8

Living Lab harmonization cube - row "setup"

Task 3.3 DAR MARGOUM Association

Organisational issues	Contextual issues	Technological issues
User involvement		
• A structured strategy of marketing that encourage the users to consume natural traditional carpets.	• The users that encourage the living lab concepts • The users that appreciate the traditional creations • Activities for all these users to get them motivated.	• To provide the technological tools websites, social media to communicate with users. • Create events to get closer to users and raise their awareness of the living lab's concept.
Services creation		
• All the organizations are involved with DAR MARGOUM • Artisans +dyeing company, spinning company public authorities.	• A living lab that contain a creation facility that coordinate between the parties.	• A network ,social media, websites to share, to communicate all the member's ideas.
Infrastructure		
• The disponibility of the information for all the living lab's involved stakeholders .	• An open platform that ease the transferability to develop the collaboration between the parties.	
Governance		
• A developed living lab the identify the responsibility of each stakeholder (financially, governmental, control .	• A structured management and procedures which ensure the reliability of work.	• Methodologies. • Social media.
Innovation outcomes		
• A structured process for more reliability of innovation outcomes.	• Innovation outcomes which respect all the users tastes and satisfy their needs.	• Provide the necessary technology needed to innovate.
Methods and tools		
• To select all the methods and tools needed for better coordination, innovation, governance.	• To control and observe the reliability of the used methods an tools. • To make sure that the used tools and methods are serving the living lab's goals.	• Ensure the development of methods and tools used.

No 9

Living Lab Harmonization Cube

Task 3.3. TRA

Organisational issues	Contextual issues	Technological issues
User involvement		
• Get users involved (farmers, farmers associations, suppliers, logistic partners) - **SETUP** • Keep user motivated - **Sustainability** • Different approaches for different users - **Scalability**	• Type of users, effort, expectations required – **SETUP** •Need for unobtrusive methods – **Sustainability** • Knowledge on cultural and legal differences – **Scalability**	• Provide tools to have users involved – **SETUP** • Automatic data collection – **Sustainability** •Need for low cost observation methods - **Scalability**
Services creation		
• Organization training - **SETUP** • Governance - **Sustainability** • Management – **Scalability**	• Idea generation, business support services - **SETUP** • Idea generation , services specific for stakeholders – **Sustainability** • Market customization - **Scalability**	• Communication services - **SETUP** • Collaboration services – **Sustainability** • Demonstration, validation, prototyping-**Scalability**
Infrastructure		
• Infrastructure to deploy first defined scenarios - **SETUP** • Interoperable/standardized infrastructure -**Sustainability** • Most used infrastructures - **Scalability**	• An Ownership drivers/ Management structure – **SETUP** • Funding strategy dynamics – **Sustainability** • Extensions (Services, partners, users) - **Scalability**	• Management working practices - **SETUP** • Sharing resources & infrastructure – **Sustainability** • Operational excellence – **Scalability**
Governance		
• A Commitment and responsibilities – **SETUP** • Financial service selection -**Sustainability** • Business models – **Scalability**	• ATo deploy collaboration practice – **SETUP** • Collaborative infrastructure - **Sustainability** • Collaborative infrastructure –i.e. ENoLL etc.- **Scalability**	• MetSelected infrastructure providers –**SETUP** • Best fitting infrastructure with environment –**Sustainability** • Infrastructures to be adapted to another environments - **Scalability**

Living Lab Harmonization Cube

Task 3.3. TRA

Organisational issues	Contextual issues	Technological issues
Innovation outcomes		
• Innovation expertise, competences - **SETUP** • IPR early phase innovation - **Sustainability** • Involvement of experts/ stakeholders - **Scalability**	• Target market, value for stakeholders - **SETUP** • Optimal degree of interaction, context sensitive – **Sustainability** • Extendable context, target market - **Scalability**	• Innovation, supportive environments, idea, patent - **SETUP** • Supporting optimal interaction – **Sustainability** • Massively distributed, multi-user environment - **Scalability**
Methods and tools		
• Taxonomy of methods &tools - **SETUP** • Methods and tools are institutionalized – **Sustainability** • Methods & tools are exchanged in e.g. ENoLL - **Scalability**	• Appropriate methods for LL are available- **SETUP** • Pan-European LL projects such as LIVERUR – **Sustainability** • Best Practices - **Scalability**	• Technology support for methods & tools - **SETUP** • Technologies are implemented – **Sustainability** • New technologies & possibilities through e.g. ENoLL - **Scalability**

No 10

Living Lab harmonization cube - row “setup“

Task 3.3. IED

Organisational issues	Contextual issues	Technological issues
User involvement		
• Design of the LL’s “marketing strategy”, including information on: i) the LL’s activities and objectives, ii) the benefits for the users produced through these activities and iii) how to motivate the users get involved in the LL’s activities	• Definition of the LL’s end users • Definition and description of the level of the users’ involvement in the LL’s procedures and activities as well as of the expectation of their involvement	• Development of the LL’s “company profile and image”: website, logo, social media profiles, etc. • Organization and implementation of local thematic events in order to raise awareness among the local community • Design and development of a CRM system for recording the users and the LL’s interactions with them
Services creation		
• Design and definition of the LL’s ecosystem of involved parties and organizations (public authorities, academic partners, enterprises, etc.)	• Design and definition of the open innovation services provided by the LL: technical services (communication, product design and innovation, etc), customer services (idea generation, training, business support, etc.), intra-network services • Transferability of the developed services • Establishment of a co-creation system	• Setting up the supportive technologies to ensure and promote the service (co) creation procedure (e.g. IT infrastructure, software, management information systems, etc.)
Infrastructure		
• Setting up the LL’s IT department for operating and maintaining the relevant infrastructure	• Open access to the LL’s infrastructure with different levels of credentials though • GDPR framework for accessing and processing user data	• Definition of the minimum requirements of the LL’s infrastructure • Ensuring the scalability and sustainability of the infrastructure

Living Lab harmonization cube - row “setup“

Task 3.3. IED

Governance		
• Development of the LL’s organization chart, describing the responsibilities of each party / member as well as the interactions among its members • Development of the LL’s financial management and governance • IPR arrangements and agreement	• Development of the LL’s “statute” describing the relevant management structures and procedures	• Development and/or application of management software, evaluation systems and methodologies, etc.
Innovation outcomes		
• Design of the process for the development and exploitation of the innovation outcomes	• Transferability and scalability of the innovation outcomes • IPR arrangements and agreement	• Setting up the supportive technologies for the promotion of the innovation outcomes
Methods and tools		
• Selection and description of the LL’s methods and tools that will allow acquiring relevant user data on a large scale	• Testing and evaluating the selected methods and tools in order to assess their suitability	• Design and development of the selected methods and tools ensuring user-friendliness, effectiveness and accordance with the LL’s objectives

Living Lab Harmonization Cube

Task 3.3. Edible Park by E35

Organisational issues	Contextual issues	Technological issues
User involvement		
Edible Park is a project for farmers but also for landowners in peri-urban areas, for citizens (from children to the elderly, without limitation of age and gender) interested in both attending the Edible Park activities and buying its products. **Users involvement** has been the backbone of the project since its very beginning. The main users are represented by the citizens of Reggio Emilia and in particular by the ***citizens of the neighbourhood*** where the Edible Park is located (Villa Canali). The stakeholders who first proposed the concept of the Edible Park – in the first place the ***CRPA Research Center on Animal Productions who is leading the Operational Group*** that has been created in order to apply for the funding of the *Rural Development Programme (RDP) of the Emilia-Romagna Region* – have been facilitated in their dialogue with the neighbourhood by the Municipality of Reggio Emilia, who organised a series of working tables and meeting in Villa Canali as part of the wider programme of citizen engagement called QUA-Quartiere Bene Comune/Neighborhood Common Good.	The park is freely accessible to all citizens every day. Besides product sales, educational activities are organised for a young and adult audience. Its *accessibility* is also favoured by the cycle paths built along the park, which make it an obligatory stop for those cyclists who cross the hilly area in the outskirt of the Municipality to reach Reggio Emilia downtown. Wider diversity promotion and enhancement is also granted by the inclusion activities that are carried out with *disadvantaged workers* who are employed by the social agricultural cooperative – Cielo d'Irlanda – who is formally in charge of the agricultural/production management of the Edible Park and part of the **Operational Group** that has been created in order to apply for the funding of the *Rural Development Programme* (RDP) of the Emilia-Romagna Region.	Edible Park wants to make sure the farm activities can continue after the end of the project. To make this agricultural model economically sustainable, The project is exploring ways to improve logistics and sales, for instance through a web platform to collect orders. This platform could ensure a greater customers' involvement in the planning and development of the project and allow them to express preferences about vegetables, food products or packaging choices. Currently users are informed about sales, activities and events organized by and within the Edible Park, first of all, through the website and Facebook page of the Edible Park. Moreover, the local TV channel of Reggio Emilia, *Telereggio*, actively share relevant events and broadcast 2 special episodes of their show dedicated to agriculture (*Agriset*) per year to the Edible Park since its opening. The CRPA is also working on spreading the concept and prototype of the Edible Park through a series of scientific and informative articles on journals and magazines.

Living Lab Harmonization Cube

Task 3.3. Edible Park by E35

Those meetings allowed CRPA to present their project to the wider public and to actively engage citizens and other local stakeholders of Villa Canali. In particular, the Edible Park engages in close collaboration activities with one elementary school and a kindergarden from neighbourhood as well as with the citizens from the Committee for Community Control of Villa Canali. Finally, another group of very relevant users is represented by the workers employed by the agricultural social cooperatives, who are involved in several inclusion activities that are carried out within the Edible Park. It is important to emphasize that the Edible Park is freely accessible and that all the citizens that are enthusiastic about it can – and have been so far – involved into the project.		Finally, the Edible Park organises open day/ guided tours open to the public during the *Open Neighbourhoods Days* organised by the Participation Department of the Municipality of Reggio Emilia. Educational guided tours are also freely organised for interested schools and summer camps.
Services creation ***process of developing new ideas, testing these in the Living Labs and the use of the real-life user-data in the design processes***		
Edible Park has set up an agroforestry-based farm that supplies fresh produce to people from the city. The farm spans about 1 ha of farmland, with 80 mulberry trees planted in rows between the crops. This enhances biodiversity and helps to main-tain the traditional rural landscape of the area. Therefore, the *current services* offered by the Edible Park are: • *Product sales*: local and seasonal vegetables that sold directly to the interested consumer	The current *market strategy* of the Edible Park is mostly based on direct sale to the customer from a small log cabin that is open every Saturday morning. The CRPA, in cooperation with the cooperative Ortolani – also a member of the Operational Group of the Edible Park – created an Edible Park brand, that will be soon used to experiment new supply chain models, taking into account the evolution of consumer needs. In particular, those labels will be put on a product developed by Coop Ortolani who, by collecting a part of the Edible Park production along with its surpluses, will offer consumers a package of packed	Currently there is no wireless/WiFi internet connection available in the Edible Park area. Nevertheless, CRPA and the Operational Group are considering of the demanding the activation of the public WiFi of the Municipality of Reggio Emilia – called *Guglielmo* – in the area of the Park, considering that the green area where it is located belongs to the Municipality of Reggio Emilia. Besides allowing for greater users' engagement, the WiFi could also be functional to the creation of a customers' web platform

at the Park; • *Educational activities*: open to and organized in collaboration with schools and summer camps; • Actions aimed at *ethical and social sustainability with the inclusion of disadvantaged workers* and educational/recreational initiatives in the park; • *Environmental and public good services* thanks to the contribution of *agroforestry* to carbon sequestration and biodiversity enhancement. In deciding which types and varieties of both crops and trees to plan, the Operational Group/ CRPA has been supported by two agricultural cooperatives (***Cielo d'Irlanda and Coop Ortolani***) – who are also members of the Operational Group and who are currently managing the agricultural production of the Park, and by the Italian Association of Agro-Forestry. In the framework of the implementation of the LL pilot, the training areas in which improvements can be made are: • Technological/ICT integration (also with a business perspective) • New forms of marketing for modern agricultural enterprises.	vegetables ready for the preparation of a home-made soup. Finally, provided that the *demand from consumers* of Reggio Emilia for local, healthy and low environmental impact products remains steady or increase, the Edible Park has potential for scaling up in terms of number of producers and consumers involved. At the same time, the synergies created by the implementation of the LL, could allow to replicate the idea of the Edible Park in other peri-urban areas of Reggio Emilia where citizens' committee and agricultural cooperatives are already carrying out experiments of urban agriculture and would	to collect orders as well as to the installation of agronomic sensors to monitor and improve agronomic cultivation conditions (testing of *precision agricultur*e techniques).

Infrastructure
"The infrastructure perspective deals with the services and technologies needed to perform measurements and analyse the collected data. Examples of these are networks, servers, statistical tools, and end user applications performing the measurements. Infrastructure does not refer to the services and technologies under control of the Living Lab. Examples that do illustrate infrastructure are open networks that users are connected to and the sensors in a telephone."
No statistical tools are currently employed to collect and monitor users' experience. All collected data are those related to agricultural production and sales as well as those data about social, economic and environmental impacts of the project (particularly in terms of carbon footprint). Those data are periodically monitored and collected on the field by the CRPA and then processed. Nevertheless, the Operation Group, lead by the CRPA, is currently considering to install a series of sensors for agronomic/environmental monitoring that using a WiFi could both collect and transmit data for irrigation, fertilization, improving in this way cultivation conditions along with the optimization of water and fertilizer management. This experiment could be carried out in collaboration with Universities and start-ups, trasforming the Edible Park in a field experiment for testing *precision agriculture* techniques. Besides that, the installation of a WiFi system could allow the creation of a customers' web platform to collect orders in order to foster greater users' engagement.

Governance		
Initiative carried out under the regional rural development program 2014-2020 - Type of operation 16.1.01 - Operational groups of the European innovation partnership: "productivity and sustainability of agriculture" - Focus Area 2A - Modernization and diversification. The Operational Group is coordinated by ***CRPA - Research Center on Animal Productions.*** The daily management of the land cultivation and sales of the Edible Park produce is entrusted to the agricultural social cooperative "Cielo d'Irlanda", with the support for the part of agro-processing and distribution of the cooperative "Ortolani". The project is also supported by the Municipality of Reggio Emilia, that with resolution no. 153 of 20/07/2015 approved the "Strategy for the enhancement and promotion of urban and peri-urban agriculture" of Reggio Emilia, proposing	Park is an innovative concept aiming to strengthen the integration of farming activity within the local socio-economic context. It is based on a renewed interest in agroforestry systems as sustainable production model and will bring to local consumers high quality food products while stimulating societal engagement in the farming activity and considerably reducing environmental impact. Keywords: Plant production and horticulture; Landscape and land management; Supply chain marketing and consumption; Farming/ forestry competitiveness and diversification; Agroforestry Description (problem addressed and solution offered for a certain user case) (max 2.000 characters):	Since CRPA, that is the coordinator of the Operational Group, is a public controlled entity as a result all relevant legal and financial relevant documents about the management of the Edible Park are published on the transparency section of the CRPA website.

to develop projects aimed at pursuing: the fight against energy and land waste, the reconstruction of the citizen bond territory, the reduction of the environmental impact, the increase of biodiversity, the protection and the improvement the aesthetic quality of the landscape. For these purposes, the Municipality of Reggio Emilia first promoted the project and granted afterwards the Operating Group the land on which to conduct the pilot experience in peri-urban horticulture and agroforestry.	"Edible Park" was inspired by the Milan Urban Food Policy Pact (EXPO 2015) and now is an EIP Operational Group project funded by the Rural Development Programme (RDP) of the Emilia-Romagna Region and supported by the Municipality of Reggio Emilia, Italy. It aims to realize a model of multifunctional farm in peri-urban areas which is environmentally and economically sustainable, and that has potential for scaling up in terms of number of producers and consumers involved.	

Innovation outcomes		
The innovation outcomes expected by the Edible Park as a result of the implementation of LL pilot can be summarized as follows: • Further strengthening of the cooperation and engagement of the citizens of the neighbourhood; • Elaboration of new educational activities for the greater public, including the creation of activities to engage retired people in the management of the Edible Park; • Further spreading of rural culture through educational activities related to both the gardening and the breeding of silkworms with mulberry leaves (tyical activity of Reggio Emilia in past centuries	The pilot of the Edible Park - now at the end of the second out of three years of activity – provides an operational and replicable model where the dynamics among the economic (farming and food selling activity), environmental (biodiversity) and social (citizens and consumers) dimensions and their impacts are assessed in a real-life setting.	WiFi and the application of a sensoring system could an added value to bring into the pilot LL.

• Fostering the dialogue with other realities of peri-urban/short food supply chain experiences both in Reggio Emilia, in order to lay the foundation for testing a second „Edible Park“, but also at EU and international level.		
Methods and tools		
Open days of the Edible Park will continue to be organized at local level for citizens, visitors, tourists or anyone interested in their paradigm and those will certainly represent a good occasion to disseminate the best practices of the LL. Furthermore, direct dialogue with similar realities through the LIVERUR project platform will allow to exchange best practices. As a beneficiary of the Rural Development Programme (RDP) of the Emilia-Romagna Region, the Edible park is also a member of the **EIP-AGRI**, the agricultural European Innovation Partnership that brings together Operational Groups and Innovation Support Services funded by and/or supported by the European Rural Development policy or the EU's research and innovation programme Horizon 2020. The membership within this networks, and several others of which the CRPA is member, further guarantees other possibilities to the Edible Park to select and exchange best practices at international level.	Evaluation of LL activities of the Edible Park at local level, as well as of their current initiatives and every day management as Operational Group, is already ensured by the CRPA, who is the coordinator of the project. Moreover, the instruments of active citizens participation provided by the Municipality of Reggio Emilia within its project QUA-Quartiere Bene Comune/Neighborhood Common Good will support in-situ evaluation together with the support oft he E35 Foundation.	In the framework of the LL pilot, the Edible Park could study and test new tools – both on and offline – for improving citizens' participation, as for instance a web platform for managing orders and requests from the Edible Park customers.

Living Lab Harmonization Cube

Task 3.3. Community Cooperatives by E35

Organisational issues	Contextual issues	Technological issues
User involvement		
Users are mainly motivated to take part to the co-creation process through the following traditional tools: • Participatory design • Story-telling and emphatic design • Customer suggestions • Idea generation with lead users. In particular, **users** from the two community cooperatives are represented by: local inhabitants of the two villages where the cooperatives are located (Succiso for the "Valle dei Cavalieri" and Cerreto Alpi for the "Briganti del Cerreto"); tourists (coming from Italy but also from abroad); all the people that make use for recreational purposes or leisure of the forests and woods surrounding the two villages; all the people that are involved into education As a consequence, according to their diverse nature users can be motivated to engage in the LL through the organisation of: • ***Participatory community meetings/ discussion groups/working tables***, with regards to local users/inhabitants oft he villages or surrounding areas; • ***Recretation and cultural activites*** aimed at revitalizing those areas that are scarcely populated;	Community cooperatives are born as bottom-up experiences of participation and regeneration of rural and remote areas in response to the local needs of citizens who lives in territories that face problems of depopulation and progressive disappearance of economic activities and primary services. In the same way, the two cooperatives Valle dei Cavalieri and Briganti del Cerreto were created by members of their local communities with the aim of working for the communities themselves in order to allow citizens to live there in a sustainable way. Consequently, the engagement of the inhabitants from the two villages – some of which are formal members of the two cooperatives – will be strategic for the implementation of the pilot LL. Inhabitants from the two communities have always been engaged in the in co-creation of the services provided by the two cooperatives through the participation to community meetings/working tables etc and the same processes can be guaranteed within the pilot LL. Tourists are kindly requested to give feedback on their experience within the two cooperatives both in person as well as online (Facebook page, TripAdvisor, Instagram).	The two cooperatives face a serious problem of both internet connection and lack of mobile coverage due to the territory they are located. Currently, commercial internet providers do not offer full coverage in the area of Succiso and Cerreto Alpi, even though internet access problems are more acute in Succiso. Both areas are connected through the Emilia Romagna WiFi – that is a public WiFi provided by the Emilia Romagna Region. Access to the Emilia-Romagna WiFi service does not require registration or authentication. However, the management of the service requires the processing of some data that identify the devices connected to the WiFi. For this reasons, we ask users of the service to view the Information on the processing of personal data collected during the use of the Emilia-Romagna WiFi service issued pursuant to article 13 of the European Regulation n. 679/2016 (GDPR). Given this background, traditional ways of communication (word of mouth, notice boards in community centers, direct mails, municipial information boards…) and data collection (participation sheets to be filled during events) are mostly employed to involve and keep users updated.

Living Lab Harmonization Cube

Task 3.3. Community Cooperatives by E35

• ***Door-to-door visits/calls*** organised in order to understand the needs of local inhabitants, with particular attention tot he elderly ones and to families with specific needs; • ***Hub for tourist activities*** that engages several commercial activities present in the territory (both within their own villages but also in the surrouding area) improving business opportunities for the territory. With regards to *tourists*, who could be defined as a peculiar and „seasonal" users (as connected to seasonal tourism or to specific/peculiar educational or outdoor activities organised by the cooperatives) their engagement and commitment in the co-design/creation of services provided by the LL plays a secondary role with respect to local citizens, although not indifferent. Tourists' user experience is enhanced through the offer of a series of activities of community or experiential tourism, as to say a form of slow tourism, highly personalised and that allows a true exchange and contact with the local communities.		

Services creation ***process of developing new ideas, testing these in the Living Labs and the use of the real-life user-data in the design processes***		
Besides tourism and reception services the two cooperatives provide to the citizens of their villages but also to the citizens of the surrounding areas services (community services) on the behalf of competent public institutions such as: 1) the Comune di Ventasso/Municipality of Ventasso;	The cooperation between the two community cooperatives and their respective network within **the LL could lead to the formalization of new territorial services** such as • Community nurse/doctor, project to be developed together with the AUSL/Local Health Center of	The supporting technologies to enable the cooperation between all the parties involved (2 community cooperative plus their respective stakeholders and public territorial actors) are currently limited to the traditional media channels (websites, social media and instant messaging).

2) the Unione Montana dei Comuni/The Union of Mountain Municipalities; 3) GAL Antico Frignano e Appennino Reggiano / Local Action Group of the Antico Frignano and of the Appennines of Reggio; 4) Parco Nazionale dell'Appennino Tosco-Emiliano/National Authority of the Park of Appennines of Tuscany and Emilia. Both the two community cooperatives receive funding and different type of support from some of those public entities (in particular from the Union of Mountain Municipalities, from the Local Action Group of the European Network for Rural Development and from the National Authority of the Park) ensuring at the same time the provision of basic services (school mobility for kids, purchase of medicine and medical products, snow shoveling, roads cleaning and maintenance, providing medicines and wood supplies to their citizens and in particular to the elderly) along with the protection and conservation of the environmental heritage and natural habitats of their territory. In the framework of the implementation of the LL pilot, the training areas in which improvements can be made are: • Technological integration (also with a business perspective) • Economic management In particular, the two cooperatives could benefit from a wider exchange of practices and dialogue with other experiences of rural LL who face problems that are similar to theirs (depopulation, lack of basic services, hostile environment)	Castelnovo Ne' Monti. The provision of those services could be ensured by the participation of the two community cooperatives to a public call part of the National Strategy for Inland areas, partly financed by the European Social Fund; At the same time, the synergies created by the implementation of the LL, could allow to: • *Increase tourism reception possibilities and capacities*, allowing in that way to increase the share of commercial/business activities carried out by both social cooperatives; • *Improve the health and social care services* that the two cooperatives already provide, as well as diversifying their funding sources.	One of the two cooperatives – Valle dei Cavalieri – just launched a forum to open discussion about the internal and everyday life organization of the cooperative. This forum is currently hosted by the website of the cooperative. Furthermore, the Valle dei Cavalieri has also recently renewed its website through the implementation of a Progressive Web APP in order to make their portal more easily accessible and usable to mobile and tablet users.

Infrastructure		
"The infrastructure perspective deals with the services and technologies needed to perform measurements and analyse the collected data. Examples of these are networks, servers, statistical tools, and end user applications performing the measurements. Infrastructure does not refer to the services and technologies under control of the Living Lab. Examples that do illustrate infrastructure are open networks that users are connected to and the sensors in a telephone."		
IT infrastructures and support are currently weak both for the cooperation between the two cooperatives as well as for the cooperation between the stakeholders involved in the single cooperative. The two cooperatives do not have someone that is exclusively designated to the maintenance of IT infrastructure or connectivity at the moment, and for ad-hoc intervention they normally require the external assistance of an expert. IT infrastructures and support are currently weak both for the cooperation between the two cooperatives as well as for the cooperation between the stakeholders involved in the single cooperative, due to the lack of broadband in the pilot areas. While qualified personnel and technological improvements are desirable, those changes can only prove to be effective in case the physical broadband infrastructure will be provided by commercial providers. No statistical tools are currently employed to collect and monitor users' experience. All collected data are those related to tourism reception and restaurant activities (financial flows, number of tourists incoming etc.), agricultural activities from sheep farming and cheese production for the Valle die Cavalieri and public contracts won for the management of public green and forestry for the Briganti del Cerreto.		
Governance		
Annual assembly of the members of the two cooperatives are held in order to vote the budget. Also a formal management board exists in both the cooperatives. All those bodies and provisions are ruled and established by the Italian law of the third sector. Concerning the other already existing networks of which the two cooperatives are members or with whom the two community cooperatives collaborate, those will be the backbone and will be involved in the creation of the LL. In particular, the two community cooperative cooperate in various forms with the Municipality of Ventasso, the Unione Montana dei Comuni/The Union of Mountain Municipalities, the Local Action Group of the Antico Frignano and of the Appenines	The two cooperatives are mostly socially-driven in the first place and business-driven in the second place, though the share of activities and their services may slightly differ due to their diverse legal structure. Indeed, Valle dei Cavalieri is a social cooperative whose aim is to provide employment opportunities for disadvantaged people. While the Briganti del Cerreto are a workers' cooperative, as to say a cooperative that is owned and self-managed by its workers. Currently the Briganti del Cerreto counts 10 members, some of which are permanent employees of the coop and others are volunteer members.	As both cooperatives actively participate and engage in public call for proposals and/or call for tenders, they are keep particular attention to governance and financial transparency, whose information are mostly available publicly on their websites. Both the websites of the two cooperative also have a section where they share updates, advertise future events or activities. The same updates are equally shared on their Facebook and Instagram pages.

of Reggio, the Parco Nazionale dell'Appennino Tosco-Emiliano/National Authority of the Park of Appennines of Tuscany and Emilia, the Network for tourism development of the Appennino Reggio/ Parco Turismo Appennino and formally constituted the School of Community Cooperatives (network whose aim is to study and disseminate the model of community cooperatives at national level in Italy and constituted by Valle dei Cavalieri, Briganti del Cerreto, the two national professional organization of cooperative enterprises together with their respective national training). Each of those actors and networks hold assemblies and periodic meetings that can be enhanced through the implementation of the pilot LL.		

Innovation outcomes		
The innovation outcomes expected by the two community cooperatives as a result of the implementation of LL pilot can be summarized as follows: • Strengthen the cooperation between the two community cooperatives in order to elaborate shared strategies to tackle problems of their territory; • Increase the share of territorial public services that the two cooperatives undertake in behalf of the competent public institutions; • Improve the quality and format, as well as increase the target audience and stakeholders, of the Scuola di Cooperative di Comunità/Schools of Community Cooperatives; • Experiment or study new environmental and/or technological integration solutions.	The target markets of the services provided by the two community cooperatives are in the first place their citizens, citizens from the surrounding areas and people interested – for various reasons – in the community cooperative model or in community tourism. The most important and appropriate tool to transfer and share knowledge about their business and community model as well as the future results of the LL is the Scuola di Cooperative di Comunità/School of Community Cooperatives. Already at is 5th edition, held in March 2019, the School of Community Cooperatives gathered students from all Italy during two weekends in Cerreto Alpi and Succiso to study the paradigm of community cooperatives.	The website of the two cooperatives, and their Facebook pages alike, will ensure an adequate media coverage to the development of the LL. Initiatives and special events will also be disseminated in the media of the subjects with whom the two cooperatives networks (Parco dell'Appennino Tosco Emiliano, Parco Appennino Turismo, Legacoop, Unione Montana dei Comuni dell'Appennino Reggiano, Comune di Ventasso, Scuola di Cooperative di Comunità etc.)

	Besides that, the two cooperatives are already involved in EU projects and in international networks that will be equally exploited to mainstream the LL outcome.	

Methods and tools		
Trainings, workshops and open days of the two community cooperatives will be organized at local level for citizens, visitors, tourists or anyone interested in their paradigm will allow to disseminate the best practices of the LL. Furthermore, direct dialogue with similar realities through the LIVERUR project platform will allow to exchange best practices. Once again, the exchanges and network created within the Scuola di Cooperative di Comunità/ School of Community Cooperatives will be further build upon in order to study and spread LL outcomes.	Evaluation of LL activities of the two cooperatives, as well as of their current initiatives and of their everyday work as cooperatives, is ensured by several actors and networks, first of all by Legacoop/League of cooperatives, as a professional organization to which both community cooperatives are formally associated and who is also responsible at territorial level for the training and innovation of community cooperatives at large.	In the framework of the LL pilot, the two community cooperatives could study and test new tools – both on and offline – for improving users' participation or to advertise and promote their activities along with hospitality and catering services to external tourists.

No 13

Living Lab harmonization cube - row “setup“

Task 3.3. Metha BDC

Organisational issues	Contextual issues	Technological issues
User involvement		
The LL’s marketing strategy The main objective is to build a collective biogas plant. It will collect waste from local town and businesses and mix it with farm slurry and manure. The idea is to include local actors, farmers and local authorities to design and draw the business plan and to agree on the project management with a balanced governance	Interest of participants Farmers who will build the collective biogas plant Local authorities Citizens of the territory to be involved in order to be agree with the project local authorities of wastes management to feed the Biogas Energy company which buy the electricity	Organization and implementation of events in order to raise awareness among the local community: Organizing a visit on several farms for the citizens and other farmers to aware them on the project and to collect their expectations
Services creation		
Services to be provide The main services is to reduce the gas emission in the territory and to reduce the waste management for the local authorities by feeding the biogas plant with these local waste	*Long term engagement* ● *Transferability of the developed services* ● *First success stories* The long term investment will engage the local stakeholders to maintain the services on the territory This kind of organization could be transferred in other territory on the west of France.	Valorizing the wastes like re-sources, to produce new kinds of renewables energies
Infrastructure		
Operating and maintaining the relevant infrastructure Chamber of agriculture staff (local project managers and advisors, technical experts…) will be involved to conduct the project and mobilize local actors. According to specific requirements, other expertise or equipment (ie experimental stations) may be engaged by the Chamber of agriculture	Efficiency and sustainability of infrastructure The Chamber of agriculture of Brittany is locally based in the territory, with staff and office. The biogas plant will be based in the territory and aim to be sustain	The collective biogas plan will use new technologies to be settled and managed

Living Lab harmonization cube - row “setup“

Task 3.3. Metha BDC

Governance		
Role of public funding Balance between public and private involvement: The management of the project, the group facilitation and some investment budget will be public A large part of the investment will be private by farmers and energy industry	*Describing the relevant management structures and procedures: level of openness* The chamber of agriculture will facilitate a steering committee composed by the investors and local authorities There is also information meeting and workshop organized with the citizens and other local stakeholders	To organize the steering committee, the workshop and exchanges between local stakeholders the facilitator will use technological communication tools
Innovation outcomes		
Design the process for the development and the exploitation of the innovation outcomes: The main innovations is the process to co-create with the local stakeholders the collective biogas plant which will be fit as best as possible with the local context. It means to organize: Wide brainstorming, prioritize the proposals appearing to be the best geared to meeting the challenges defined in the project and taking in account the partners’ capacity of action And choose the solutions to be given priority to work on and set up the 3-year working plan to follow	*Transferability to other contexts and domains, platform scalability* This process could be transferred by the Chamber of agriculture is all the region for several project of collective biogas plant Some communication day will be organized to promote the innovation process	private
Methods and tools		

Acquiring relevant user data. The chamber of agriculture facilitator will collect, analyse and publish the main data which are needed to facilitate the co-creation process: on farm data, territorials waste…	*Testing the selected methods and tools in order to assess their suitability:* A global carbon footprint of the biogas production will be make in order to assess the project global sustainability	*Enhancing visibility:* The Chamber of agriculture will communicate online, on local newspaper and with information day on the farms to increase the visibility of the project

No 14

Living Lab harmonization cube - row “setup“

Task 3.3. UCT

Organisational issues	Contextual issues	Technological issues
User involvement		
Retrieval of information and data on inter-company relations and contacts, local meetings with farmers, tourism operators, agri food industries, renewable energies producers, land maintenance operators	Diversity of companies involved by type of production and economic structure: • Seeds producers • Wine producers • Olive oil producers • Rural tourisms	Uniformity of data, evaluation of company financial statements and efficiency indicators: • Economic farm dimension • Efficiency indexes of rural workers • Efficiency parameters for surface units • Actual production costs indexes
Services creation		
Contacts and technical meetings with local partners and discussion with public institutions	Creation of technical assistance, dissemination and training services: • Introduction of products innovations • Introduction of process innovations	Retrieval or creation of calculation and data processing tools: • Excel files • Specific software
Infrastructure		
Creation of an inter and intra corporate network and ease of access	Diversity of needs and level of technical and economic efficiency • Surface • Production tools • Organization of selling and publishing systems	Identification of minimum levels of information exchange and management: • Study of local market • Changing needs and uses of visitors in rural tourism farms

Living Lab harmonization cube - row “setup“

Task 3.3. UCT

Governance		
Creation of an organization chart for human and financial resources: • Public workers involved • Private farmers involved • Direct costs • Organization costs	Identification and detailed description of the current business management: • Crops management • Olive oil and wine industries • Rural tourism organization	Creation of specific software and data processing models: • Excel files • others

Innovation outcomes		
Realization of plans and programs of technical assistance and agricultural disclosure – extension services	Creation of indicators of effectiveness of the transfer of the proposed innovations: • ante and post technical and economic indexes	Choosing the best methods and tools for transferring innovations: • meetings • press • videos • depliants • other

Methods and tools		
Selection and identification of tools and application methods: • actual rural structures • potential development of themes and creation of an integrated area	Application tests of the methods and processes identified: • visits to existing LL in near Italian Regions • informations exchanges	Construction of a crossover table between company needs and information transfer actions and innovative tools

No 15

Living Lab harmonization cube - row “setup“

Task 3.3. WTELECOM
(Technology Provider for rural businesses)

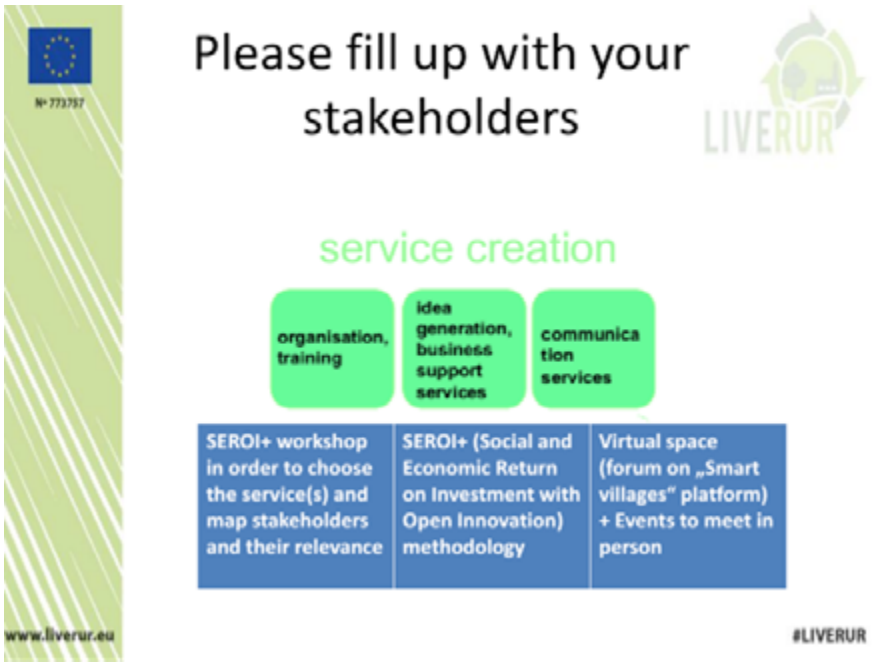
Organisational issues	Contextual issues	Technological issues
User involvement		
Workshops and events where some use cases can be presented in order to disseminate the use of IoT technologies **(different approaches to motivate different users)**	Business owners and technical staff will be the main users of the smart solutions. **(Which type of user, efforts, and expectations?)**	Implementation of Chabot’s within horizontal platform applied to rural businesses can support and help to the users. **(Provide tools to have users involved)** Low cost sensors can be implemented to carry out the corresponding data collection. **(Need for low cost observation methods/ automatic data collection)**
Services creation		
Trainings can be done for users in order to make use of the full potential of the IoT/ ICT solutions deployed in their businesses. **(Organization, training)**	The implementation of IoT technologies in rural holdings can help to boost their efficiency, as well as, to increase the added value to their products **(idea generation, support services/market customization)**	New technical support services can be developed to solve incidences in rural areas or specifically addressed to systems deployed in rural holdings. **(Communication Services)**
Infrastructure		
The platform to be developed will boost the collaboration among the different LLs. **(Collaborative infrastructures in ENoLL)**	Smart city solutions can be adapted to rural businesses. The new resulting applications should be tested before its launch to the market as commercial products. **(Infrastructure to be adapted to other environments)**	New connectivity networks or an expansion of the current ones will be needed for the implementation of IoT technologies in rural businesses. **(Infrastructures used to deploy first defined scenarios)**

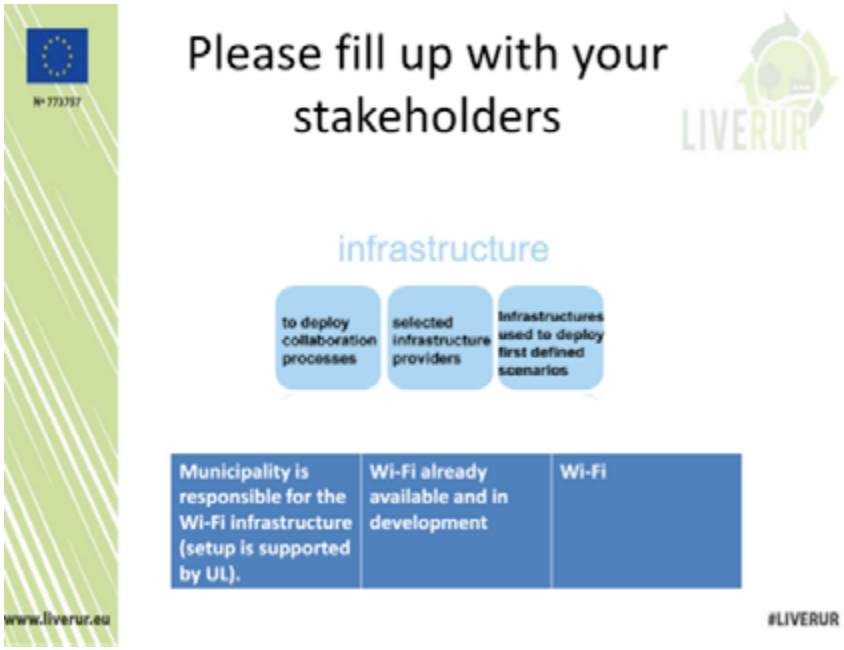
Task 3.3. WTELECOM
(Technology Provider for rural businesses)

Governance		
The implementation of smart technologies can boost the implementation of new innovative business models within rural areas. **(Business models)**	The different use cases to be developed through the implementation of IoT technologies can be aligned with other regional/national strategies of rural industry modernization **(Funding strategy dynamics)**	The application of IoT technologies will improve the efficiency of the rural holdings **(Operational Excellence)**
Innovation outcomes		
New competencies can be developed through the implementation of smart agro technologies **(Innovation expertise, competencies)**	The results can be replicated to other rural areas in the EU also boosting a bigger network. **(Extendable context, target market)**	The platform to be developed can boost the innovation within rural areas. **(Innovation-supportive environments)**
Methods and tools		
New innovative processes or business models can be disseminated through the platform to be developed. **(Methods and tools are exchanged in the ENoLL)**	Within the platform can be included different methods depending the involved LL. **(Appropiate methods for LL available)**	Design of a knowledge platform to foster the collaboration among LLs **(Technology support for methods and tools)**

ANNEX 2: Guideline how to fill up the shapes of the Living Lab Harmonisation Cube

Living Lab harmonization cube - row "Setup"




Nº 773737
Please fill up with your stakeholders
LIVERUR
infrastructure
to deploy collaboration processes
selected infrastructure providers
Infrastructures used to deploy first defined scenarios
Municipality is responsible for the Wi-Fi infrastructure (setup is supported by UL).
Wi-Fi already available and in development
Wi-Fi
www.liverur.eu
#LIVERUR


Nº 773737
Please fill up with your stakeholders
LIVERUR
governance
commitment & responsi-bilities
ownership drivers/ management structure
management working practices
Collaboration (municipalities, farmers/ entrepreneurs, local initiatives)
Joint management but strong support from the municipalities
Open, transparent communication with periodical evaluation
www.liverur.eu
#LIVERUR


Nº 773757
Please fill up with your stakeholders
LIVERUR
innovation outcomes
innovation expertise, competencies
target market, value for stakeholders
innovation-supportive environments Idea, Patent
Use of SEROI+ methodology for development
Target Market: Consumers of organic goods, tourists (boutique tourism) Value: sustainable life in rural areas
Support by Institute for Innovation and Entrepreneurship (one of the stakeholders)
www.liverur.eu
#LIVERUR


Nº 773757
Please fill up with your stakeholders
LIVERUR
methods & tools
taxonomy of methods & tools
appropriate methods for LL available
technology support for methods & tools
Workshops and trainings
SEROI+
Toolbox (Smart Villages) (online) SEROI+ (online)
www.liverur.eu
#LIVERUR

ANNEX 3: Best practices

No 1 of Best Practices (English)

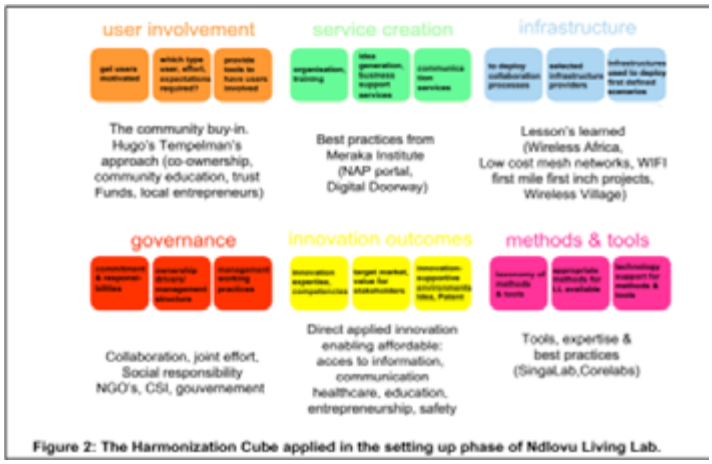
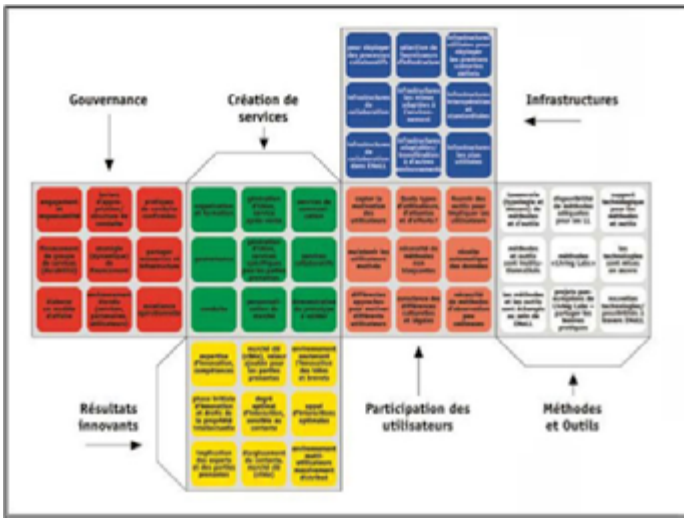


Figure 2: The Harmonization Cube applied in the setting up phase of Ndlovu Living Lab.

No 2 of Best Practices (French)



No 3 of Best Practices (Spanish)

REFERENCES

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

Almirall, E., Lee, M. and Wareham, J. (2012). 'Mapping Living Labs in the Landscape of Innovation Methodologies', Technology Innovation Management Review, 2(9), pp. 12- 18.

Bergvall-Kåreborn, B. and Ståhlbröst, A. (2009). 'Living Lab: an open and citizen-centric approach for innovation', Int. J. Innovation and Regional Development, 1(4), pp.356–370.

Bergvall-Kåreborn, B. et al. (2009). 'A Milieu for Innovation - Defining Living Lab', The Proceedings of the 2nd ISPIM Innovation Symposium, New York City, USA, 6-9 December.

Coorevits, L. and Jacobs, A. (2017). 'Taking Real-Life Seriously: An Approach to Decomposing Context Beyond "Environment" in Living Labs', Technology Innovation Management Review, 7(1), pp. 26-36.

European Commission (2017). What is Horizon 2020? Available at: http://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020 (Accessed 27 April 2017).

European Commission, Horizon 2020 Work Programme 2016-2017 (2017). Europe in a changing world – inclusive, innovative and reflective Societies. Available at: http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-societies_en.pdf (Accessed 27 April 2017).

European Network of Living Labs (2017). What are Living Labs. Available at: http://www.openlivinglabs.eu/node/1429 (Accessed 27 April 2017).

Greve K., et al. (2016). 'Facilitating co-creation in living labs: The JOSEPHS study'. Available at: http://www.josephs-servicemanufaktur.de/uploads/tx_nepubs/2016_May_Paper_Facilitating_Co-Creation_in_Living_Labs.pdf (Accessed 8 May 2017).

Leminen, S. (2013). 'Coordination and Participation in Living Lab Networks', Technology Innovation Management Review, 3(11), pp.5-14.

Leminen, S. and Westerlund, M. (2017). 'Categorization of Innovation Tools in Living Labs', Technology Innovation Management Review, 7(1), pp. 15-25.

Schuurman, D. (2015). Bridging the Gap between Open and User Innovation? Exploring the Value of Living Labs as a Means to Structure User Contribution and Manage Distributed Innovation. Doctoral dissertation. Ghent University.

Ståhlbröst, A. and Bergvall-Kåreborn, B. (2011). 'Exploring users motivation in innovation communities', International Journal of Entrepreneurship and Innovation Management, 14 (4), pp. 298-314.

Ståhlbröst, A. and Host M. (2017). 'Reflecting on Actions in Living Lab Research', Technology Innovation Management Review, 7(2), pp. 27-34.

Veeckman, C. et al. (2013). 'Linking Living Lab Characteristics and Their Outcomes: Towards a Conceptual Framework', Technology Innovation Management Review, 3(12), pp. 6-15.