# D5

# Project's ULLs methodologies

## Partners

| | | |
|---|---|---|
| University of Cyprus (UCY) | | Cyprus |
| Brandenburg University of Technology Cottbus–Senftenberg (BTU) | | Germany |
| Consiglio Nazionale Delle Ricerche (CNR) | | Italy |
| Social Fringe: interesting untold stories (SF:IUS) | | Croatia |
| Palermo Urban Solutions Hub (PUSH) | | Italy |
| Urban Foxes | | Belgium |

## Associated Partner

| | | |
|---|---|---|
| AESOP Thematic Group for Public Spaces and Urban Cultures (TG PSUC) | | |

| Deliverable No. | D5 |
| --- | --- |
| Work Package: | WP2 Education in Living Labs Framework |
| Medium: | Document |
| Dissemination Level: | Public |
| Document Version: | FINAL |
| Date of Delivery: | 14/11/2024 |
| Authors: | Christina Panayi, Nadia Charalambous |
| Document Description: | This deliverable aims to map and analyse existing/ ULLs' methodologies to develop the project's ULLs' methodologies as a sort of well-structured procedure for bringing about specific goals, followed by a well-designed and flexible array of methods and tools that can be adapted to different contexts and adopted by each ULL in the four cities (Nicosia, Petralia Sottana - Palermo, Naples and Cottbus). |

| Version | Issue Date | Reviewer(s)/ Contributor(s) |
| --- | --- | --- |
| 1.0 | 08.04.2024 | Christine Mandy, Bram Dewolfs, Dafne Berc, Emilia Pardi, Stefania Ragozino, Tihomir Viderman, Tomislav Augustinčić |
| 2.0 | 30.04.2024 | Christine Mandy, Dafne Berc, Emilia Pardi, Nadia Charalambous, Stefania Ragozino, Tihomir Viderman, Tomislav Augustinčić |

# EXECUTIVE SUMMARY

Activity 2.1 "Mapping & analysis of existing ULLs' methodologies" and the subsequent Deliverable 5 "Project's ULLs Methodologies" focus on the mapping and analysis of existing Urban Living Labs (ULLs) methodologies, and on the development of the project's methodologies for setting up and implementing the four ULLs in the four cities: Nicosia, Palermo, Naples, and Cottbus.

Mapping of existing methodologies is based on a conceptual framework for ULLs developed through a literature review aiming to gather knowledge and experience from scientific resources, empirical case studies, and ULL methodologies already used by project partners, particularly focusing on youth participation within an urban, suburban or peri-urban context.

This information is qualitatively analysed to identify specific tools and procedures for developing the PS-U-GO ULLs methodologies, prioritizing the project's objectives. Deliverable 5 is synthesized to offer guidelines, methods, and tools on how the ULLs can be set up and how they can be implemented based on a general framework, flexible enough to accommodate the unique contexts of each of the four locations. Based on these, the four specific project ULLs methodologies will be able to be adapted in each context, while at the same time ensuring a comparable implementation and evaluation.

# 1. INTRODUCTION AND OBJECTIVES

As living environments evolve rapidly, urban planning faces new challenges. Inclusion and active participation in decision-making and urban planning processes are crucial for attaining and sustaining urban resilience (Lopez De Asiain & Díaz-García, 2020; Esteban, 2020). Simultaneously, social sustainability and fostering a sense of belonging are acknowledged as fundamental components of sustainable development, enriching the quality of life within communities (Colantonio, 2010). Highlighting the necessity for holistic problem-solving approaches in urban design, integrating knowledge, tools, and methods from both academic and non-academic realms, an interdisciplinary approach advocates for bottom-up collaborations and fosters an environment of mutual learning among diverse participants (Doucet & Janssens, 2011; Klein et al., 2001). Collaboration among stakeholders is crucial, with architecture and planning institutions playing a key role in providing knowledge. The traditional role of architects and urban planners along with the requisite knowledge and skills, is being questioned (Salama, 2005). Adequately trained professionals are essential for addressing urban issues comprehensively. Academia, government, and civil society need to adopt new roles, emphasizing civic engagement and democratic participation for sustainable urban governance. Cooperation between different sectors is vital for finding innovative urban solutions and equipping future planners and decision-makers with the necessary skills, methods and tools for co-creation.

By spanning urban placemaking, urban commoning, and city governance, PS-U-GO seeks to create synergies between education and youth, empowering young people, both students and citizens, to have an influential voice in the city through a participatory action-based training program[1]. By embracing youth's unique talents and characteristics, students and other young people will be able to learn informally in urban living labs and claim their voices and places in city decision-making. PS-U-GO recognizes their great role as future citizens, professionals and people in authority and aims to establish a framework in which they can grow into responsible, critical, and environmentally conscious city ambassadors who are willing and daring to take constructive action to improve their neighbourhood and city.

Specifically, the project will introduce Urban Living Labs (ULLs) as educational environments, engaging stakeholders from the quadruple helix to experiment and test

---

[1] For this Deliverable, "youth" refers to individuals between the ages of 15 and 24, as defined by the World Youth Report, published by the United Nations (2020).

ideas and solutions to urban challenges. All the ULLs aim at promoting transdisciplinarity by providing practical interventions and outcomes tailored to the specific needs of each context, fostering all relevant stakeholders' engagement. The ULLs will serve as a nurturing environment for youth engagement in democratic processes, allowing students and young people to voice their opinions and shape decision-making, while developing the skills necessary to actively participate in the civic affairs of their communities, developing a sense of ownership and responsibility for their urban living environments. ULLs will be implemented in four places: Nicosia, Cyprus by UCY, Petralia Sottana (Palermo), Italy by PUSH, Cottbus, Germany by BTU and Naples, Italy by CNR-IRISS.

The objective of Activity 2.1 "Mapping and analysis of existing ULLs' methodologies" and Deliverable 5 "Project's ULLs methodologies" is to comprehensively examine and evaluate existing methodologies concerning Urban Living Labs (ULLs), with a specific emphasis on youth involvement within urban environments. This process involves synthesizing knowledge gained from literature reviews, empirical case studies, and methodologies utilized by project partners. The aim is to then conduct a qualitative analysis to identify pertinent tools and procedures, subsequently prioritizing them to formulate the ULLs methodologies for the project.

These methodologies are designed to offer a diverse array of methods and approaches that can be implemented by ULLs in the project's four designated cities. Moreover, they are crafted to be adaptable, allowing for customization within each unique urban context. This flexibility ensures consistency in implementation and evaluation across the four cities, aligning with the project's proposal objectives.

# 2. CONCEPTUAL FRAMEWORK

With the aim of creating a framework for mapping and analysing ULLs methodologies, the definition of Urban Living Labs (ULLs) and Living Labs (LLs) and the key characteristics that define them are being examined.

LLs were officially introduced to the European Union (EU) in 2006 when the Finnish Presidency established the European Network of Living Labs (ENoLL), and the European Commission began funding their creation (Nesti, 2018). There is no universally agreed-upon definition of Living Labs, with various entities providing their own interpretation. According to ENoLL website, Living Labs can be described as "open innovation ecosystems in real-life environments using iterative feedback processes throughout a lifecycle approach of an innovation to create sustainable impact." This involves a focus on co-creation, prototyping, testing, and scaling-up of innovations and businesses.

The term "Urban Living Labs" is increasingly used to encompass such initiatives when applied in urban contexts. The Joint Programming Initiative Urban Europe (JPI Urban Europe) defines ULL as "a forum for innovation, applied to the development of new products, systems, services, and processes in an urban area; employing working

methods to integrate people into the entire development process as users and co-creators to explore, examine, experiment, test and evaluate new ideas, scenarios, processes, systems, concepts and creative solutions in complex and everyday contexts" (JPI Urban Europe, 2015, p.59).  Marvin et al. (2018) refer to ULLs as new emerging collaborations and "sites devised to design, test and learn from social and technical innovation in real time" (p.1).  Additionally, they embrace a definition from Liedtke et al. (2012) that lies at the core of the ULL concept: urban sites where collaborative co-creation of innovative and transformative enhancements in urban environments takes place, involving research organisations, public institutions, the private sector, and community stakeholders.  ULLs serve not only as platforms for gaining experience and testing ideas but also as strategic plans toward amplifying responses within provision systems, aiming to enhance effectiveness, garner political leverage, and secure public support.  It is crucial to emphasise that these are not standalone interventions; instead, they seamlessly integrate into a comprehensive "politics of experimentation," actively influencing the governance of urban sustainability (Marvin et al., 2018, p.3).

Despite the many slightly varied definitions and characteristics of ULLs, ENoLL highlights six essential characteristics:

- real-life setting;
- integrating innovations into users' everyday lives;
- multi-method approach;
- problem driven approaches;
- orchestration, meaning that they serve as the central coordinators facilitating collaborations with relevant stakeholders;
- multi-stakeholder participation, co-creation, and active user involvement throughout their whole lifecycle.

According to Marvin et al. (2018) among the diverse forms of urban experimentation, ULLs distinguish themselves through three specific features:

- their rootedness in specific geographic locations;
- a strong emphasis on experimentation and learning;
- active participation and involvement of users in the process.

JPI Urban Europe, highlights other ULLs common characteristics: inclusive and profound stakeholder engagement, emphasising transdisciplinary collaboration and a platform for inclusive research; a challenge-driven approach with a focus on capacity building, addressing urban challenges, creating value, and exploring synergies for sustainability goals; a flexible innovation method open to feedback and learning, balancing scientific rigour with adaptability, openness to coincidence, and iterative processes; and embeddedness in everyday urban life, operating within the context of challenges, usually at a neighbourhood scale, to ensure practical outcomes with ethical considerations for the application of tools.

Additionally, ULLs comprise five essential components, including the utilisation of Information and Communication Technologies (ICT) to enable novel methods of

collaboration and co-creation of innovation among stakeholders, effective management encompassing ownership and policies, partners and users contributing their unique knowledge and expertise, and research in terms of the collective learning and reflection occurring within the lab (Robles et al., 2016).

Some key commonalities across these features include their real-life setting, where innovations are integrated into users' everyday lives; a problem-driven multi-method approach; active and inclusive stakeholder involvement throughout their lifecycle. One of the most important mutual characteristics, is that ULLs incorporate some form of experimentation, evaluation and learning mechanisms. It is through these practices that they can effectively "facilitate formalised learning among participants", allowing them to "fulfil their vision to act as urban labs or test beds" (Marvin et al., 2018, p.8).

Robles et al. (2016) outline five fundamental principles crucial for their functioning: value, influence, sustainability, openness, and realism. The processes within them should prioritise value creation, benefiting both partners and users or potential customers, while also exerting influence by demonstrating the impact of the process on innovation. Regarding sustainability, ULLs should fulfil present needs without compromising those of future generations, considering economic, social, and ecological perspectives. The open nature of these processes contributes to collecting diverse perspectives, achieving rapid development, and ensuring as comprehensive participation as possible, even from seemingly unaffected users. Realism is pivotal, as a genuine, real-life setting shapes the behaviour and opinions of participants, producing tangible results in a natural environment (Robles et al., 2016).

## Key characteristics defining ULLs

Based on the definitions of ULLs, as well as their distinct characteristics and underlying principles identified in the previous section, key characteristics that define ULLs emerged:

1. Contextualisation and real-life setting
2. Inclusive multi-stakeholders' participation and co-creation
3. Experimentation and evaluation
4. Sustainability and impact

These are further explored through additional literature review to establish the foundation for the ensuing systematic mapping and analysis.

### Contextualization and real-life setting

Urban Living Labs (ULLs) serve as physical entities situated within specific geographical areas, as emphasized by McCormick and Hartmann (2017), rather than existing solely as virtual platforms. The labs function as dynamic spaces where innovation is not only conceptualized but also designed, tested, and learned from in real-time, as noted by Menny et al. (2018). In this real-life setting, ULLs play a crucial role in generating practical knowledge that directly addresses the challenges and opportunities present in

urban environments, contributing to tangible outcomes and solutions. Evans and Karvonen (2014) further emphasize that the knowledge produced within ULLs is not confined to a theoretical framework but is instead applicable and relevant to real-world contexts. Thus, ULLs serve as vital hubs for fostering collaboration, experimentation, and learning, ultimately driving positive change and innovation within urban settings.

To achieve a real-life setting and contextualization in ULLs, it is important to engage various stakeholders, including residents, community organizations, local businesses, and governmental agencies. The specific geographical area (place) where the ULL will be situated is thus important to map out the priorities and challenges faced by the community. Furthermore, it is crucial to ensure that the setup of the ULL aligns with the commitment of the stakeholders, the available resources in the community, and the identified priorities. The setup should be practical and feasible, addressing important but achievable goals. A good balance between the scope of the ULL setup is important to be focused enough to address specific issues but broad enough to capture the complexity of urban challenges (Ravetz et al., 2018).

### Inclusive stakeholders' participation and co-creation

Stakeholder participation can be described as "a process in which individuals, groups, and organisations actively engage in making decisions that impact them" (Reed, 2008, p.2418). The involvement of various stakeholders is considered a crucial characteristic of Urban Living Labs (ULLs) for effectively addressing urban sustainability challenges (Voytenko et al., 2016). Terms such as "co-creation, co-production, participation, involvement, empowerment, the quadruple-helix model, and multi-stakeholder or public-private-people partnership" are employed to articulate the collaborative aspects inherent in ULLs (Menny et al., 2018, p.69).



Arnstein's Ladder (1969)
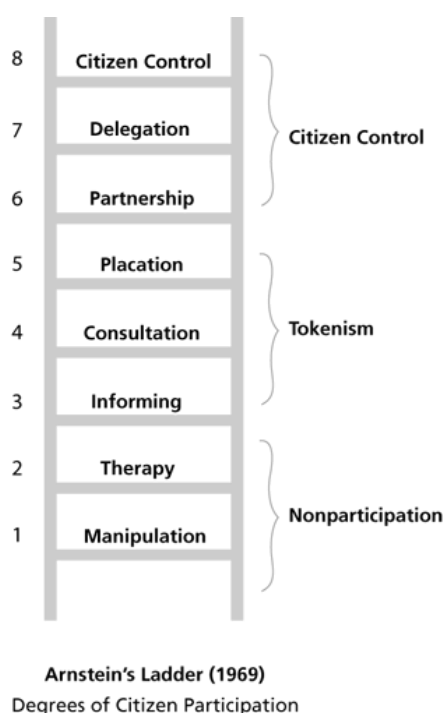Degrees of Citizen Participation

Diagram 1: Ladder of participation by Arnstein (1969).

In general, according to Arnstein (1969), the degree of participation, as reflected in the "ladder of participation", is distinguished into eight levels ranging from non-participation to citizens' control, representing full participation (see Diagram 1). Arbter et al. (2007) refer to three simplified levels: the information level, the consultation level, and the co-decision level. At the information level, participants are informed about decisions with minimal influence on outcomes. At the consultation level, participants can make comments, react, and shape ideas and proposals, which will be considered in the final decision-making stage. On the co-decision level, participants can have a substantial say in the development, shaping, and implementation of ideas. Menny et al. (2018) outline four categories of user involvement based on the wheel of participation by Davidson (1998) within ULLs: co-creation, involving active engagement and substantial influence; consultation, characterised by limited two-way communication and non-binding feedback; information, providing easily accessible and objective information without active engagement; and non-participation, indicating a complete lack of involvement or pretended engagement (see Diagram 2). The higher level of user involvement is co-creation, a broad term encompassing collaboration and empowerment, signifying the ability of citizens to actively participate in decision-making processes with influence equal to that of other decision-making bodies.
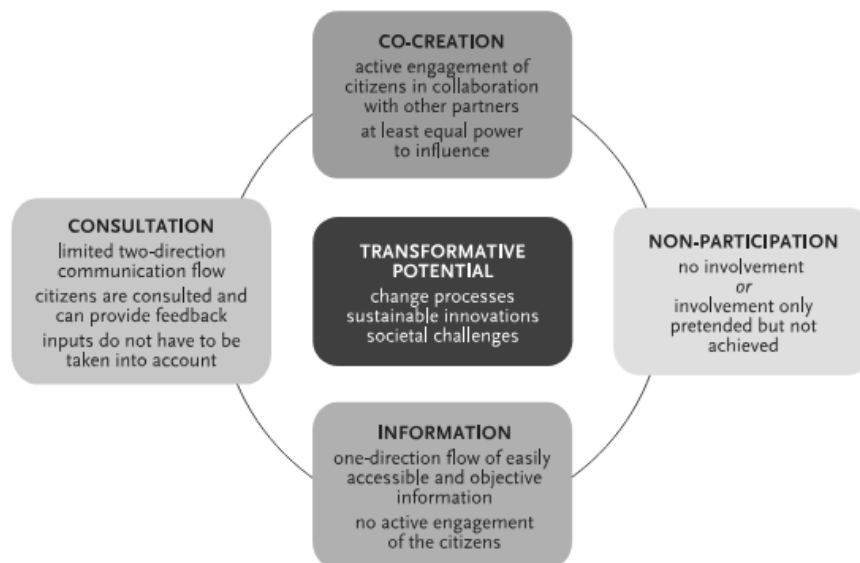


Diagram 2: Four levels of user involvement (Menny et al.,2018).

Following their analysis of four Urban Living Labs (ULLs) concerning user participation levels and transformative potential, Menny et al. (2018) observed that achieving the co-creation level is not consistently realised. It is mainly present during the implementation phase and depends on the leading actors of the ULL and its objectives. They emphasised the importance of employing diverse methods, involving various stakeholders, and integrating different levels of participation. The idea that co-creation alone constitutes the key level of user involvement for successful and transformative Urban Living Labs (ULLs) is open to discussion and instead, emphasis should be placed on determining the appropriate form and timing. The wheel of participation (Davidson

1998) is proposed as a more suitable framework for addressing different levels of user involvement in ULLs, allowing a blend of bottom-up and top-down approaches (Juujärvi and Lund, 2016). This approach facilitates the identification of needs and ideas as well as validates these needs while providing a formal structure (Menny et al., 2018).

Haufe et al. (2017) suggest aiming to achieve the co-decision level, but also give emphasis on the importance of providing information at every stage of the participatory process for transparency and to sustain participants' interest. Bergvall-Kåreborn and Ståhlbröst (2009) highlight that the active involvement of users is a pivotal factor in the functioning and success of ULLs from their early stages, ensuring that users can actively shape the process rather than merely responding to it.

Experimentation and evaluation

ULLs function as urban experiments with specific goals, yet they operate as open processes, resulting in uncertain outcomes. This inherent uncertainty grants them the capacity to challenge prevailing forms of urban governance, as noted by Evans (2016), who emphasizes that they establish a governance process that challenges and disrupts. ULLs are integral to a broader "policy experimentation", fostering specific urban conditions and reshaping societal responses to urban challenges, as observed by Bulkeley et al. (2016).  To harness the full potential of ULLs as experimental platforms, emphasis must be placed on their design, practices, and procedures. The social networks, expectations, and modes of learning within ULLs play a pivotal role, creating an environment where new ideas and collaborations can be tested in a "protected" space, facilitating the discovery of alternative solutions (Bulkeley et al., 2016).

The evaluation also plays an equally important role.  As highlighted by McCormick and Hartmann (2017), an open evaluation process offers flexibility for exploring multiple ideas and the potential to yield collective outcomes. Moreover, it provides an opportunity to challenge entrenched notions, often leading to the emergence of unconventional knowledge.

Sustainability and impact

In their work, Menny et al. (2018) argue that Urban Living Labs (ULLs) possess the potential to "offer opportunities to foster sustainability in cities" (p.68).  They conceptualize the transformative potential of ULLs for sustainability as their ability to "initiate and catalyse change processes by advancing sustainable innovations that help address socio-economic and environmental challenges in cities" (p.69).  Achieving this potential necessitates not only active user involvement but also attention to factors such as governance structure, leadership, and power distribution to ensure that ULLs can effectively achieve transformative outcomes.  While the transformative potential of an ULL can be realized with minimal user involvement, sustainability necessitates the foundation of ethically justified and socially inclusive processes, wherein a higher level of user engagement is widely accepted and more intrinsically motivated (Menny et al., 2018).

As outlines by ENoLL, sustainability also refers to the capacity of ULLs to be self-sustained and maintained through time, by incorporating mechanisms regarding their funding, long-term stakeholders' involvement, strategic communication and dissemination.

Table 1 summarizes the important aspects and some guidelines in each of the four key characteristics:

| KEY CHARACTERISTICS | IMPORTANT ASPECTS | GUIDELINES (how?) |
|---|---|---|
| Contextualisation and real-life setting | • Real-life and dynamic setting: ULLs operate in real-world urban environments, facilitating a dynamic environment where innovation is not only conceptualized but also designed, tested, and learned from in real-time. (Marvin et al., 2018; Menny et al., 2018)<br><br>• Rootedness in specific geographic areas and urban contexts: ULLs are physical entities situated in specific urban areas, leveraging local resources and knowledge to address challenges, serving as vital hubs for driving positive change and innovation. (Evans and Karvonen, 2014; Marvin et al., 2018; McCormick and Hartmann, 2017) | • Ensuring broad stakeholder engagement including residents, community organizations, local businesses, and governmental agencies.<br><br>• Having a specific geographical area (place) and urban context to map out the priorities and challenges faced by the community.<br><br>• Ensuring a practical and feasible setup, aligning with the commitment of the stakeholders, the available resources and the identified priorities.<br><br>• Having a balanced scope being focused enough to address specific issues but broad enough to capture the complexity of urban challenges.<br><br>(Ravetz et al., 2018) |
| Inclusive stakeholders' participation and co-creation | • Multi-stakeholder participation, the quadruple-helix mode: ULLs engage various actors in the innovation process, including residents, governments, businesses, and academia. (JPI Urban Europe; Menny et al 2018)<br><br>• Co-creation and active user involvement: ULLs emphasise involvement of users and stakeholders in the co-design, testing, and evaluation of innovations, making decisions that impact them. (ENoLL; Reed, 2008) | • Integrating different levels of participation in the different phases, aiming to achieve the co-decision level, giving emphasis on active involvement of users from their early stages, ensuring that they can shape the process rather than merely responding to it. (Arbter et al., 2007; Bergvall-Kåreborn and Ståhlbröst, 2009; Haufe et al., 2017; Menny et al., 2018)<br><br>• Employing diverse methods, involving various stakeholders, placing emphasis on determining the appropriate form and timing, allowing a blend of bottom- |

| | | up and top-down approaches. (Juujärvi and Lund, 2016; Menny et al., 2018) |
|---|---|---|
| Experimentation and evaluation | • Emphasis on experimentation and uncertain outcomes: ULLs focus on iterative experimentation, learning from successes and failures, resulting in uncertain outcomes, ensuring a capacity to challenge prevailing forms of urban governance overtime. (Evans, 2016; Marvin et al., 2018)<br><br>• Evaluation and learning mechanisms: ULLs incorporate formalised processes for evaluation and learning, facilitating continuous improvement. (Marvin et al., 2018) | • Giving emphasis on the design, practices, procedures, social networks, expectations, and modes of learning within ULLs, creating an environment where new ideas and collaborations can be tested in a 'protected' space, facilitating the discovery of alternative solutions. (Bulkeley et al., 2016)<br><br>• Ensuring an open evaluation process that gives the flexibility for exploring multiple ideas and the potential to yield collective outcomes, providing an opportunity to lead to the emergence of unconventional knowledge. (McCormick and Hartmann, 2017) |
| Sustainability and impact | • Sustainability: ULLs aim to meet present needs without compromising those of future generations, considering economic, social, and ecological perspectives. (Menny et al., 2018; Robles et al., 2016)<br><br>• Value creation and influence: ULLs prioritise value creation for all stakeholders involved, demonstrating the impact of innovation processes<br><br>   o  on urban development (Robles et al., 2016)<br><br>   o  on the individuals involved, ensuring diverse voices are heard and giving opportunities to learning through the ULLs. (JPI Urban Europe)<br><br>• Capacity to be self-sustained and maintained through time | • Ensuring active user involvement.<br><br>• Placing attention to factors such as governance structure, leadership, and power distribution to ensure that ULLs can effectively achieve transformative outcomes. (Menny et al., 2018)<br><br>• Incorporating mechanisms regarding ULLs funding, long-term stakeholders' involvement, strategic communication and dissemination |

Table 1: Essential characteristics defining ULLs.

## Types of ULLs

Robles et al. (2016) identify four different "types" of ULLs, depending on the actor (s) that drives it and the focus of its activities.

- research ULLs concentrate on conducting research across various aspects of the innovation process,
- corporate ULLs prioritise establishing physical spaces for collaborative innovation with other stakeholders,
- organisational ULLs involve members of an organisation in co-creating innovation and
- intermediary ULLs provide a neutral platform where diverse partners are invited to collaboratively innovate.

Marvin et al. (2018) categorise ULLs in three typologies, strategic, civic, and organic. These typologies were examined through a comparative research program that analysed 50 ULLs across Europe.

- A strategic ULL is distinguished by a certain level of guidance from regional or national authorities, along with the engagement of major corporate or private sector partners. Typically, its main objectives include national innovation and technological priorities. Experimentation often takes the form of competitive processes, such as competitions where urban sites form partnerships leverage local assets to compete for state funding.
- A civic ULL directs its focus towards the priorities outlined by municipal or local authorities, higher education and research institutions, and local companies. It reflects urban economic and employment priorities and concerns, often employing co-funding as a common method.
- An organic ULL addresses contextual challenges associated with the diverse needs and priorities of specific communities or neighbourhoods. Primary actors include civil society, communities, and NGOs. Typically operating with limited budgets, its emphasis lies on infrastructural innovations that support various aspects of community well-being and development.

## ULLs' phases and process

McCormick and Hartmann (2017) outline a circular process comprising three phases in ULLs: design, operation, and evaluation (see Diagram 3). The design phase includes understanding the context, including the population living in the specific area to initiate a shared vision, set objectives and identify the expected impacts or benefits.  It also includes stakeholder engagement strategies, defining their roles as either more passive or active participants and organising the experiments that will follow.  The operation

phase involves delivering the intended outcomes, achieving key milestones, and engaging specific resources and actors within a structured decision and management process. Evaluation, which can take on summative, formative, or interactive characteristics, involves collecting qualitative or quantitative data using specific methods to address specific purposes and answer key questions.
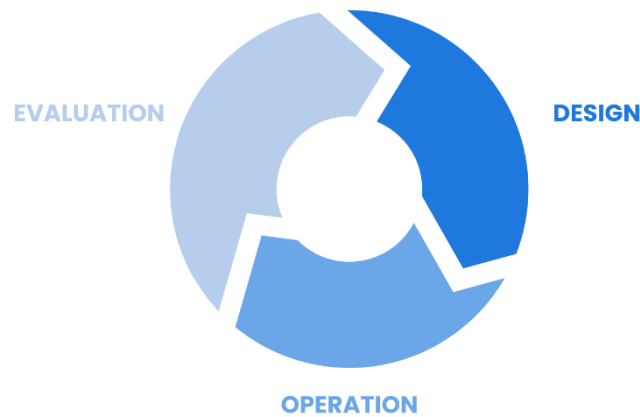


Diagram 3: Phases of ULLs by McCormick and Hartmann (2017) - Adapted from "The Emerging Landscape of Urban Living Labs: Characteristics, Practices, and Examples", https://lup.lub.lu.se/search/ws/files/27224276/Urban_Living_Labs_Handbook.pdf

Similarly, Marvin et al. (2018) discuss the design and practice of ULLs. Design encompasses coalition formation, establishing a shared understanding of contextual challenges, identifying technological interventions for trials, and agreeing on governance principles. Practice focuses on the implementation of ULLs, involving various methods for learning, shielding, nurturing, empowering, and participating, as well as considering their impact.

Evans et al. (2017) delineate three fundamental stages that correspond to the phases of innovation development: exploration, experimentation, and evaluation (see Diagram 4). Exploration entails transitioning from idea to concept or prototype of a solution, encompassing problem identification and solution proposal. The primary objective is to understand the "current state" by gaining insights into existing habits, practices, and issues through observation, participation, and in-depth interviews. Subsequently, sensitising techniques are employed to uncover users' latent needs through brainstorming and co-creation methods. All generated ideas and options are then translated into tangible concepts that can be co-designed, marking the "pre-measurement" phase preceding intervention. During the experimentation stage, the concepts formulated in the exploration phase are put to the test by creating and experimenting with a prototype in a real-life setting. The objective is to assess user reactions and attitudes towards the proposed solutions while capturing behaviours. This testing period may vary in duration and enables a decision to either return to the exploration phase or advance to the evaluation stage. The evaluation stage facilitates the creation of a "post-measurement" of the intervention, allowing for comparison with the "pre-measurement". This phase aims to exploit and introduce the innovation into target markets. However, it may also involve post-launch activities, where the utilisation of the innovation is monitored for further enhancements.
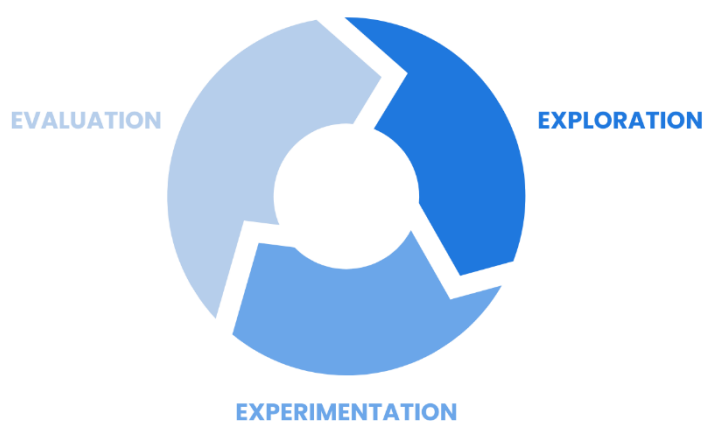
Diagram 4: Phases of innovation development within ULLs
by Evans, Schuurman, Ståhlbröst & Vervoort (2017).

# 3. METHODOLOGY OF MAPPING AND ANALYSIS OF EXISTING ULLS

The methodology employed to map and analyse existing Urban Living Labs (ULLs) is grounded on the conceptual framework developed derived from the literature review to define the key characteristics (see Table 1) that underpin ULLs discussed in the previous section.  It also focuses on ULLs that foster youth participation. Data gathering consists of two stages: gathering information from partners and analysing empirical case studies from relevant literature.

ULLs operated by some of the project's partner organisations (UF, PUSH, CNR-IRISS, UCY) serve as hubs for innovative approaches to youth engagement within urban settings. Semi-structured online interviews are conducted with representatives from partner organisations through Microsoft Teams to learn more about each ULL and to provide opportunities to identify any lessons learned, uncovering challenges, successes, and best practices.  Transcription of each interview can be found in Appendix 1.  Additionally, questionnaires with open-ended questions are crafted to systematically collect data on ULL methodologies. These questionnaires are designed to capture insights from each partner organisation regarding general information, phases and processes, contextualization and real-life setting, inclusive stakeholders' participation and co-creation, experimentation, and evaluation, sustainability, and impact, ensuring comprehensive coverage of ULL initiatives (Appendix 2).

In the second stage, empirical case studies from the literature focusing on youth participation within urban contexts are analysed in-depth, offering extra real-world examples of ULL initiatives, exploring their impact on youth empowerment and urban development.

In this sense, the methodologies are cross-referenced and analysed with reference to the conceptual framework proposed in the previous section.  Commonalities and

differences among existing ULLs methodologies will guide the project's ULLs methodology that will provide an overarching framework flexible enough to adapt to different contexts, individuals, and spaces.

# 4. MAPPING AND ANALYSIS OF EXISTING ULLS' METHODOLOGIES

Five Urban Living Labs (ULLs) are mapped, based on the conceptual framework: four ULLs related to the project's partners, through the questionnaires and interviews (Madonie Living Lab (MaLL) in Palermo, Italy; The Academy of Urban Action (AUA) in Brussels, Belgium; Lido Pola Permanent Laboratory (LP[2]) in Naples, Italy; and In Our Neighbourhood: Latsia in Latsia, Nicosia), along with an empirical case study (C3PLACES, Lisbon Living Lab in Lisbon, Portugal) from literature which focus on youth.

## Partners' ULLs methodologies

### ULL1: Madonie Living Lab (MaLL), Petralia Sottana (Palermo) and Madonie District, Italy

https://www.madonielivinglab.it/

https://www.instagram.com/madonielivinglab/

(Information provided by PUSH – Emilia Pardi)

Madonie Living Lab (MaLL) is an innovation hub, a place for sharing contamination and collaboration, which acts as a bridge between community, administration, research, and enterprise, enhancing the territorial potential of the Madonie Park area.  The main themes addressed focus on three sectors of fundamental strategic relevance, also outlined in the "Resilient Madonie: Future Laboratory" Area Strategy: agri-food production, biodiversity conservation, and intangible knowledge development, along with the establishment of a Green Community.  Core stakeholders are among others the Unione dei Comuni (a consortium of 21 municipalities in the district of Madonie), Comune di Petralia Sottana (the Municipality where the physical hub is located), Istituto Salerno (a secondary school leading the consortium applying for the European Regional Development Fund which funded the Living Lab), local small enterprises, farmers and professionals, local non-profit associations, international researchers and designers and Universities.

Operationally, the ULL's strategy includes a plan of actions and activities divided into four main development axes: the Community Lab, the Learning Hub, the Open Innovation Platform, and the Ideas Accelerator.  The Community lab aims to foster the participation of the local community by enabling the exchange of information, the construction of shared perspectives, and greater territorial cohesion. The Educational Hub aims to develop a path dedicated to innovation in the educational field, favouring

teaching methods that go beyond the usual school paths and that can connect students with the economic and social realities of the territory. The activities planned within the Open Innovation Platform aim to accompany local enterprises towards the adoption of sustainable and socially responsible innovation management logics and models. At the same time, within the Ideas Accelerator, a pathway is provided to accompany the identification and development of new business ideas capable of exploiting local characteristics and resources by drawing on international best knowledge and practices. In order to guarantee greater flexibility and range of action, the MaLL is equipped with a mobile laboratory (MoLL), with which the activities of the four action pillars will be spread throughout the Madonie area.

Principles and values

Some of the most important values for MaLL are the direct involvement of the users and stakeholders' involvement in general, innovation and sustainability.

Phases and process

The operational process of the Living Lab involves cycles of targeted listening and action (see Diagram 5) to identify overlooked needs and opportunities in the territory, map skills, support and enhance them through training activities, exchanges, and co-design.  MaLL's methodology is characterised by flexibility and was unexpectedly forced to adapt due to a significant delay in financial operations approval and the signing of the contract. As a result, activities transitioned from a diffuse calendar to an intensive program and from activities designed with the use of lab facilities to activities tailored to the community's capacity in preparation for the opening of the lab.

- The co-design (2021)
  In the initial phase, institutional actors are identified, and an initial mapping of entities within the business and civil society sectors is conducted. A community database is developed, which is subsequently supplemented by desk research.  During this phase, the initial requests of the institutional actors are presented, along with the participants' expectations, potential activities, suggestions, strengths, critical points, and potential risks.  Businesses and third-sector associations are also involved in this phase, albeit at a later stage, to identify needs, propose solutions, discuss resources, and identify key partners.
- The first implementation (2023)
  A series of activities are implemented aimed at nurturing a capacity building process toward the opening of the physical space in Petralia.  Among them: a blended (online and in person) training for startups, an itinerant training to connect best practices in activating and governing community cooperatives, an international conference to reflect on solutions for sustainable, resilient, inclusive, and accessible regeneration of rural communities enabling low carbon footprint lifestyles and businesses, a service design intensive school, a residency for researcher who wants to interact with the Madonie region and its community, support for SMEs who need to innovate their processes with a sustainable approach and a two-days design sprint for students from University

aimed at prototyping solutions on three briefs given by companies/associations located in the Madonie area.

- The opening of the physical lab (forthcoming)
  During 2024, laboratory activities are planned within the space. They will be better defined with the involvement of the schools, local, national, and international universities, local businesses, and the extended network built during phase 1.
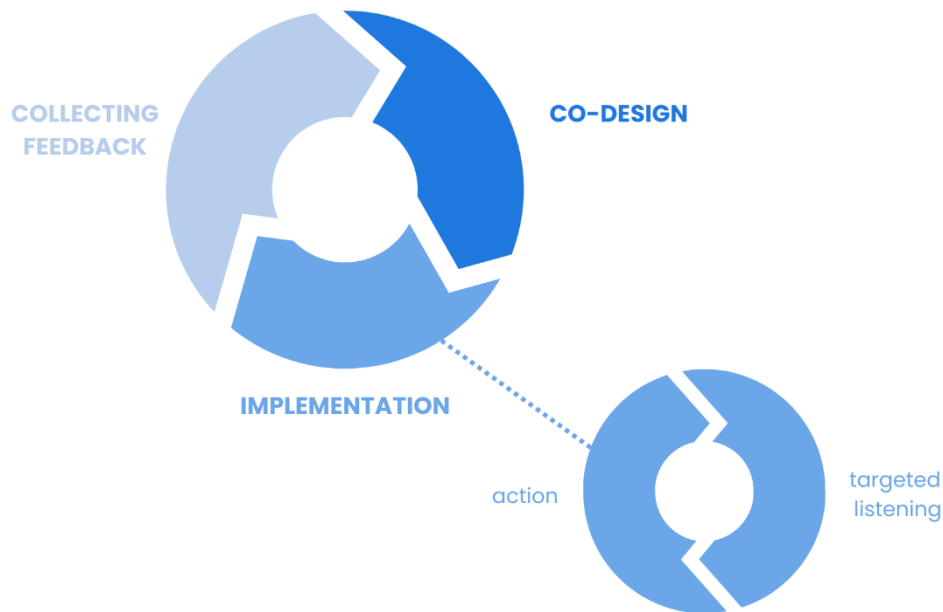- Collecting feedback from the participants



Diagram 5: Phases of Madonie Living Lab (MaLL).

Contextualization and real-life setting

The project was initiated to respond to a specific need expressed by a public actor to combat depopulation and economic losses in a rural area. The flow is therefore somewhat reversed: seeking to integrate a service design approach into a living community with strong socio-economic and political ties and dynamics.  This approach is strongly based on two components: a) a user-centred approach (designing with rather than designing for); and b) involvement of multiple actors (a fundamental requirement for an open innovation process).  A potential risk in this approach, especially in a rural environment, can be identified in a myopic view of the community regarding its potential and the potential of its territory. For this reason, the inclusion of mechanisms of hybridization and exchange has proven to be fundamental, to broaden the perspective and enhance imaginative capacity.

Inclusive stakeholders' participation and co-creation

MaLL ensures diverse representation, inclusivity, and transparency through a carefully designed approach that incorporates specific tools and methods tailored to engage stakeholders at various stages of the process. The ULL employs open calls as its

primary means of recruitment, leveraging a variety of communication channels such as social networks, newsletters, local newspapers, word of mouth, and press releases among municipalities and other institutional actors. This approach ensures that participation opportunities are widely accessible and visible across diverse communities.  Moreover, the ULL emphasises continuous communication and outreach efforts for each activity, to foster diverse representation and prioritise gender balance and the balance between local and non-local stakeholders.  It also employs a mix of online and in-person activities, strategically chosen based on objectives.

In accordance with the structure of the project, 7 different types of events and formats aimed at different audiences are proposed to test which of these events generated more interest in the territory and to enhance local skills, promote exchanges with external parties, and attract external creative energies.

Experimentation and evaluation

Due to time constraints, the intensive structure of the activities does not allow room for deep iterations. However, experimenting with different formats gives the opportunity to collect sufficient feedback and lessons learnt for future improvements.  The methods used for collecting feedback are based on direct observation and open discussion with participants, or on surveys.

Sustainability and impact

Agri-food production, biodiversity conservation, and intangible knowledge development, along with the establishment of a Green Community are key objectives in the "Resilient Madonie: Future Laboratory" Area Strategy, which is the background of this living lab.  The complex challenge is to imagine a sustainable model for providing quality services at low or no cost without depending on public funds.  This challenge naturally requires time and, particularly at an early stage, strong economic support from local policymakers, who must be convinced of the value and potential of this type of space and network.  For this, it is crucial to maintain and grow the active network between students, local businesses, associations and national/international companies; to maximise the use of the physical hub's technological facilities; to develop and implement an attractive and sustainable business model that can attract public and private funds and sustain a long-term impact on this area.

Methods for participation

The following table encompasses the methods used in MaLL as structured approaches for achieving specific goals in each phase by involving the stakeholders.

| METHOD | FURTHER DESCRIPTION | AIMS | FORMAT |
|---|---|---|---|
| Co-design phase | | | |

| | | | |
|---|---|---|---|
| World café | • Open discussion and dialogue | • Presentation of initial requests, potentially related activities and socio-economic fabric<br>• Identification of suggestions, strengths, critical points and potential risks | • In person |
| Workshop | • Structured format for achieving specific outcomes by answering four key questions: WHY - Needs, WHAT - Solutions, WITH WHAT - Resources, WITH WHOM - Key Partners | • Identification of the needs, solutions, resources and key partners | • Online<br>• Using a collaborative board |
| Implementation phase | | | |
| Trainings | • 5 remote training sessions and in-person mentoring program | • Definition and communication of ideas, raising funds for ideas to build new services, products or processes in their territory | • Blended |
| | • 3 study visits, 5 training sessions, and 6 group and individual mentoring sessions<br>• 6 weeks | • Connecting best practices in activating and governing community cooperatives<br>• Exploring the methods of activation, engagement and structuring a community cooperative | • Itinerant (in person) training |
| International Conference | • 150 speakers, 30 different roundtable discussions<br>• 3 days | • Reflecting on solutions for sustainable, resilient, inclusive and accessible regeneration of rural communities enabling low carbon footprint lifestyles and businesses | • Blended |
| Service design intensive school | • 16 participants and 4 mentors<br>• Group of local inhabitants giving feedback<br>• 4 days | • Training on the basis of service design | • In person |
| Researcher residency | • 6 researchers who, based on their research, met local stakeholders and organised workshops with local inhabitants<br>• One week | • Interacting with Madonie region and its community, meeting local stakeholders | • In person |
| Design sprint "Madonie Brain Factory" | • 19 university students<br>• Based on 3 briefs given by companies/ associations located in the area<br>• Jury by design experts and local stakeholders<br>• One weekend | • Prototyping solutions | • In person |

| Consultancy for SMEs and cooperatives | • 6 participating companies | • Consultancy on sustainability and innovation | • Blended |
|---|---|---|---|
| Collecting feedback phase | | | |
| Open discussion | - | | - |
| Direct observation | - | • Collecting sufficient feedback <br> • Collecting lessons learnt for future improvements | - |
| Survey | - | | - |
| Report | - | | - |

Table 2: MaLL's methods for participation.

ULL2: The Academy for Urban Action (AUA), Brussels, Belgium

https://www.aua.brussels/

(Information provided by Urban Foxes – Bram Dewolfs)

The Academy for Urban Action (AUA) seeks to engage young people in learning about urban issues, to make a difference in these areas, both locally and globally and to develop the methodology and competences for policy makers and urban professionals /to really work with young people through non-formal education and freedom.  It involves different stakeholders such as Brussels youth, creative and academic experts, policy makers, private institutions, schools and universities.  The AUA is an urban do-tank with youngsters between the ages of 16 and 24, that choose the urban topics themselves.  After which they embark on an 8-week action research cycle, to get informed, build their talents and create an impact both locally and internationally. The activities bring together topical and territorial elements, placemaking, urban pedagogy and creative methods.

The pedagogical framework of AUA integrates non-formal education, a deductive approach, action-based learning, the involvement of experts and collaborative learning moments with stakeholders from the quadruple helix.  It is structured around a learn-make-show approach wherein young participants start by familiarising themselves with the topic, delve deeper through deductive learning facilitated by Urban Masterclass experts, and then receive a participatory budget to create a prototype or take action to enhance their impact on the topic.

Principles and values

Some of the most important values that AUA has are equality and equity, reciprocity (as the line between learner/ participant and facilitator often gets blurred), critical thinking, kindness and fun (having fun can bring continuity in youth's engagement).

Phases and process

Each action research cycle of 8 steps involves the selection of a theme by the group from a list of proposed themes, which may be supplemented if necessary. The cycle consists of several sessions structured according to a logical and pedagogical framework, using a learn-make-show approach (see Diagram 6).  The working method proposed by the Academy of Urban Action allows for local implementation and adaptation, thanks to the flexibility of the moments, topics, and contexts.



Diagram 6: Learn-make-show approach of AUA.

This method, per (thematic) cycle is illustrated in Diagram 7 as follows:

- Step 1: THEME CHOICE
  Young people choose a theme in advance, preferably through a consensus after a group discussion or work form.  If no consensus is found, a vote can be taken, while the 2nd or 3rd choice can be scheduled later in the year.
- Step 2: RESEARCH: Urban Action LAB SESSIONS
  - 1st Lab Session: Initial Situation Analysis: The young people themselves set to work to analyse the initial situation with regard to the theme.  They look, under the guidance of the facilitator, for existing methods to measure and assess the public space (quantitative & qualitative). The search results obtained can be presented to the rest of the group, can be compared with other cities/ results and discussed afterwards. During the same session, the team collectively reflects and brainstorms about the approach of the next Lab sessions, on the basis of non-formal working methods.
  - 2nd Lab Session: Reflection in Action:  Action-based research and experiential pedagogy is one of the important key moments illustrative for the experimentational process. The young people go out into the city and public space to make an analysis with existing tools (or concepts to be developed for experimentation).
  - 3rd Lab Session: Urban Masterclass:  During this session, the facilitator is supported by an external expert who has already been in discussion with the facilitator and has agreed to participate with a motivating non-formal

work format. The team looks back on the previous sessions and the questions can be asked before, after or (depending on the method) during the session (e.g. quiz, riddle or game). Afterwards, further explanation is given during a group discussion and everyone can have their say or ask further questions. The facilitator and the expert ensure that the content of the theme is always linked to the young people and their context. At the end of this session there is also a first brainstorming session on how to convert the acquired knowledge and experiences into positive urban action.

- Step 3: CO-CREATION (2 to 3 sessions)
  Co-creation of output (also called creative processing) is central in the CO-CREATION sessions. In collaboration with relevant creative people (graphic designers, artists, coders, placemakers, etc.), the young people come up with a way of action and design it together. This output is a creative output that can afterwards be shared with or used by the wider audience. This "creative production time" usually takes up the most time, and therefore the most sessions. During these sessions, the youngsters are brought into contact with different types of creatives, ranging from theatre makers to cartoonists, allowing them to discover and develop their talents. Thanks to the resources obtained through the requested European Solidarity Fund: European Solidarity Projects, the young people can, in the form of a participatory budget, shape and / or produce their output, in order to subsequently present it to the wider public.

- Step 4: URBAN SHOWCASE
  This session considers the sharing of the creative processing with the general public. There are roughly 2 types of output: a) a tool, campaign or method (in the form of game, application, mini document) that will be more sustainable over time; and b) an event or urban intervention with the public and users. It is also possible that these 2 types of output are interwoven, for example a happening where the young people present their (self-developed) urban intervention, after which a manual is published so that people can also realise it themselves. It is the young people who also make a very important contribution to the spread of the proverbial oil slick in the field of communication, through social media and in the popping up in the media by interviews and press releases, all aiming to reach a very diverse audience. In this SHOWCASE the focus is mainly on local residents, local young people, classmates and classmates, thematic partners and (academic) experts, the media, participants' friends and families, and policy makers. During these public moments, an attempt is always made to engage/ activate the public as much as possible, for example by encouraging them to participate (in a form of debate, diary room, etc.).
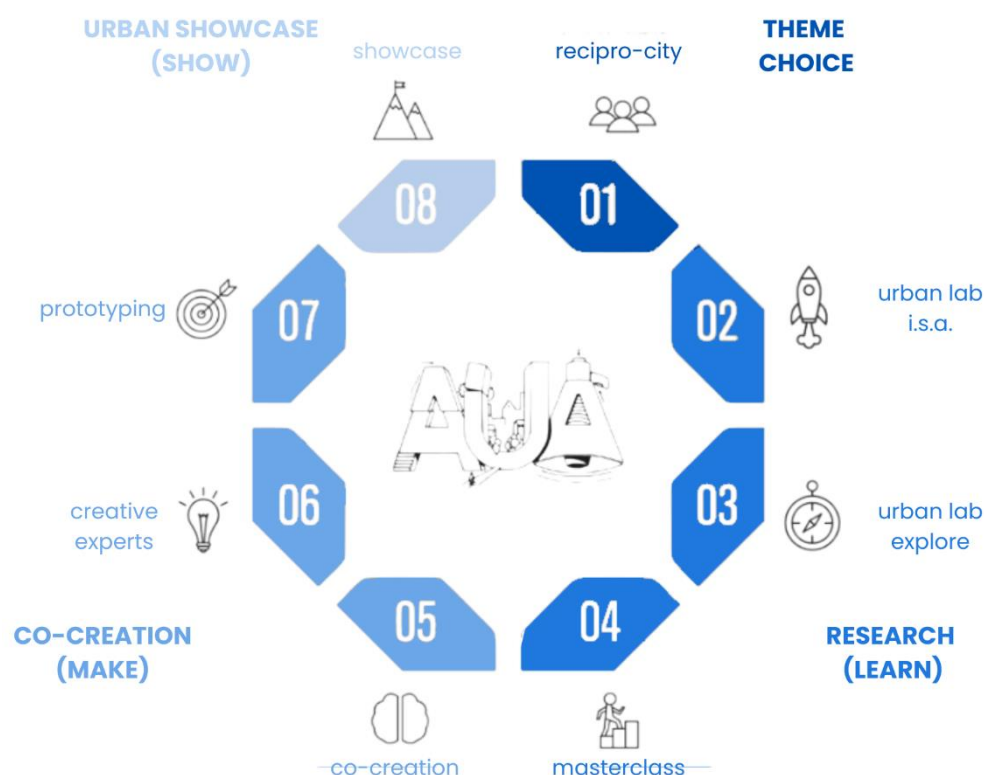
Diagram 7: Phases of AUA - Adapted from The Academy for Urban Action (AUA) diagram.

## Contextualization and real-life setting

An authentic real-life setting in AUA is ensured by the various workshops and visits taking place in the city. Although having a fixed place is preferred by AUA, it was "nomadic" in a period of time, moving in the city from place to place as a mobile form of ULL.  AUA also gives emphasis to the constant reflection of its eventual output that needs to be implemented in a real-life setting.

## Inclusive stakeholders' participation and co-creation

The identification of stakeholders occurs through an open call for participation and partnerships with local schools and youth houses, ensuring a diverse representation. Additionally, visually attractive Instagram story polls and questions are utilised, allowing youth to answer relevant questions to express interest in joining, thus promoting inclusivity during the initial recruitment phase.  Commitment is facilitated by selecting moments when most people are available, allowing them to choose the topic and output, making the process enjoyable, providing food and offering EU mobilities linked to the topic. When possible, participants are remunerated for their involvement, especially when hired to conduct workshops on youth participation.  Transparency is fostered through a democratic process, openness in accounts and costs, and the creation of Showcases where the process and results are openly shared.

## Experimentation and evaluation

AUA follows an iterative process of experimentation and improvement by discussing the process and collectively adjusting it for any improvements that can be made. This occurs after every session and in more detail after every cycle. The effectiveness of experiments and initiatives is informally evaluated by observing the enthusiasm of the youth. Additionally, feedback from the participants is used to adapt the time span, activities, etc.

## Sustainability and impact

AUA can tackle a wide range of Sustainable Development Goals (SDGs) depending on the chosen topic. Examples of thematic cycles can be gender equality, climate change, Social, eco-social entrepreneurship, etc. However, impact on any sustainability initiatives is not formally evaluated so far.

## Methods for participation

Some of the methods and structured approaches for involving stakeholders, used by the AUA are included in the following table.

| METHOD | FURTHER DESCRIPTION | AIMS | FORMAT |
|---|---|---|---|
| Theme choice | | | |
| Brainstorming about the new 0topic | • Few months before a new cycle starts | • Coming to a consensus or combine relevant subjects | - |
| Voting, Multi-voting link e.g. Point allocation link | • Few months before a new cycle starts<br>• For point allocation: Every voter has 10 votes and decides to put them on different options or all in one | • Achieving consensus for the theme if it was not achieved through discussion | • In person or<br>• Online |
| Recipro-city | • One the topic is decided, at the start of each cycle and the start-up of a partnership<br>• Documented and communicated to the outside world | • Informal acquaintance, to get to know each other<br>• Initiation of the first cross-pollination between the partners<br>• Identification of needs, expertise and expectations in an informal way | • In person |
| Research (Learn) | | | |
| Initial Situational Analysis (I.S.A.) e.g. City expedition link | • Non-formal activity, fun, like a game<br>• For city expedition: Walking in specific areas in small groups and using specific questions/ missions | • Team building<br>• Finding out what the participants already know about the topic<br>• Sensory exploration of urban environment | • In person, in the area |

| Urban Lab Explore | • Participants perform their own action reserach | • Diving deeper into the topic | - |
|---|---|---|---|
| Urban Masterclass | • Non-formal activity<br>• Identifying and engaging an expert and train them to adapt the knowledge into a non-formal activity | • Answering any questions arisen<br>• Deductive learning | - |
| Co-creation (make) | | | |
| Brainstorming | - | • Transforming research to impactful urban action | - |
| Creative experts | • Co-creating with creative experts and/ or partners | • Creation of an impactful creative output | • In person |
| Prototyping | • Prototyping and experiment with solutions | • Testing and fine-tuning the design into a prototype | • In person |

Table 3: AUA's methods for participation.

## ULL3: Lido Pola Permanent Laboratory (LP[2]), Naples, Italy

(Information provided by IRISS CNR – Stefania Ragozino)

With the 'Lido Pola Laboratorio Permanente - LP[2]' project, a participatory process of urban regeneration, study and listening to the territory, and co-creation of activities and events for the Bagnoli neighbourhood, in Naples, and for the Lido Pola has been launched. This initiative is the result of the collaboration of a network of activists, academics and associations who have joined forces for the regeneration of the historic building overlooking the coastline. With the support of the associations '4 Raw City sound' and 'Jolie Rouge', the multidisciplinary group 'Needle' and the scientific direction of the Research Institute on Innovation and Services for Development (IRISS) of the National Research Council (CNR), LP[2] won the Creative Living Lab IV Ed. award within the framework of Action No. 2 - Places to Regenerate, promoted by the General Directorate for Contemporary Creativity of the Ministry of Culture.

Through participatory survey and co-design meetings, a common vision of change for the neighbourhood was developed together with the participants. Through experimented network activities, co-designed furnishing concepts were developed for the terrace of the Lido Pola and for future regeneration of the structure. A fundamental priority of LP[2] was to lay the foundations for the construction of a network of territorial actors on an inter-municipal scale. By involving these actors starting from the discussion of priority issues for the Lido community, the intention was to raise awareness of a potential 'critical mass from below' on the impacts of the much broader process of regeneration of the former industrial areas of Bagnoli and on the need to be able to represent the demands of the area in this context. To ensure a wide-ranging

dissemination of the contents promoted by LP², songs and audiovisual works, produced thanks to the contribution of young local artists and professionals, composed a communication campaign for the project coordinated by rapper and producer Oyoshe.

Principles and values

All the activities developed were coherent with the Neapolitan Urban Commons Network' principles (antisexism, antifascist, and antiracism), and they were settled in an inclusive and collaborative waygiving space to the different competences of the mediators and participants. Specifically, the most important values for LP² are trust building among the stakeholders, diverse representation, inclusivity, transparency, "real" participation in terms of meaningful involvement and recognition of competencies acknowledging and leveraging the diverse expertise and skills of participants.

Phases and process

LP² follows an iterative linear process of three phases as described below and illustrated in Diagram 8.

- Exploration
  This phase aims to identify the strengths and weaknesses of the community, to define topics and the territory's potential and criticalities and to reinforce and expand the network of territorial actors. This phase included a preliminary survey and a territorial survey.
  o The preliminary survey was conducted within the Lido Pula community using the World Café approach (Steier et al. 2015) to facilitate inclusive dialogues that allowed for the identification and articulation of the community's own capacities and vulnerabilities. This process was underpinned by the principles of action-research, whereby community members actively cooperated and interacted with the researchers in defining and structuring the objectives (McCall & Peters-Guarin, 2012) and defined the priority urban dimensions to be investigated in the subsequent spatial survey - Environment and Coastal, Neighbourhoods and Services, Arts and Culture. These initial meetings were aimed at sharing and validating the methodology proposed by the facilitators with the Lido community, strengthening the sense of trust and co-responsibility of the process.
  o The territorial survey included a detailed analysis of the potential and criticalities of the territory associated with each theme, with the intention of strengthening and expanding the network of territorial actors. Specific public collaborative mapping sessions were organised for each dimension, open to a wide range of participants including administrators, associations, active citizens, activists, and other stakeholders. This approach ensured broad inclusiveness and facilitated the collection of a wide spectrum of perceptions, experiences and knowledge directly from the voices of the territory. Paper maps were transferred into digital format through My Maps, creating a participatory geographic information system (P-GIS) that allowed for a more

dynamic and interactive analysis of the territory. This approach greatly enriched the territorial analysis, providing a solid information base based on the comparison of mapping tables with the aim of identifying the frequencies of reports in order to deduce a preliminary priority ranking. The P-GIS facilitated the transfer of spatial knowledge from citizens to researchers, enabling citizens to plan and act by reinterpreting what is useful and important for planning, while researchers experienced and learned from the inhabitants' consciousness and knowledge (Corbisiero, Napoletano, 2023).

- Definition
  This phase aims to define the most important issues, construct a roadmap and co-design actions.  It was characterised by two main and complementary activities: the co-design of mobilisations for strategic interventions on the territory and the co-design of the physical regeneration of the terrace.
  o For the co-design of the mobilisations, a specific meeting was arranged for each of the priority urban dimensions, thus ensuring a detailed and focused attention on each relevant aspect that emerged from the analysis conducted during the Exploration phase. For the co-planning of the mobilisations, three key tools were used: budget allocation, brainstorming (objectives and action criteria) and an adapted Business Model Canvas. This approach ensured a detailed and coherent planning of the mobilisations, providing fertile ground for the practical implementation of the initiatives.
  o For the co-planning of the physical regeneration of the terrace, a methodology focused on direct community engagement through the use of focus groups and the Planning for Real technique was favoured. These tools made it possible to collect feedback and ideas directly from the inhabitants, transforming the community's needs and expectations into concrete elements of the project. The focus group offered a platform for in-depth dialogue, while Planning for Real facilitated the visualisation and participatory design of the space, allowing participants to contribute to the design of the project.

- Realisation
  Aims to promote the themes and results, and realise the outcomes. The implementation phase envisaged an action for each of the priority urban dimensions addressed in the co-design process of the mobilisations, aiming to open a public debate on the critical issues that emerged and to enhance the area's potential for possible solutions. The self-construction workshop involved the project operators, the scientific component, the community of the asset and inhabitants and university students in the realisation of the project for the Lido Pola terrace.  A distinctive element of the entire process was the communication and dissemination strategy adopted. Through music co-production workshops, open to young people from the neighbourhood and carried out thanks to the involvement of established artists in the area, a music track and a related video

clip were produced for each theme, which retraced and re-proposed the critical issues and potential that emerged from the process.
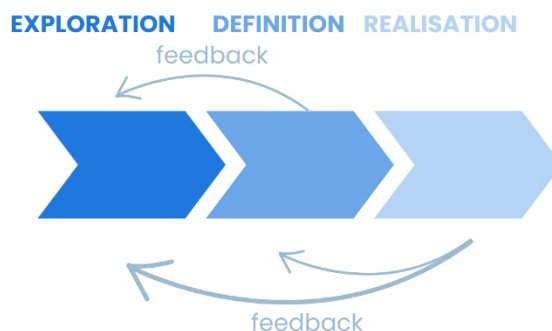


Diagram 8: Phases of LP$^2$ - Adapted from LP$^2$ diagram.

## Contextualization and real-life setting

The LP$^2$ was initialised and developed into a real-life setting, an urban common recognised from the City Council located in a very contested place of the city, a brownfield affected by a long-time pending process of urban transformation. The LP$^2$ was developed within an existing socio-political and environmental context, made by real difficulties (among which environmental condition of the building and conflicts among actors) and animated by cultural, social and pedagogical activities; a strong political action tradition; protocols of consensus method (not based on majority voting but on discussion and conflicts management).

## Inclusive stakeholders' participation and co-creation

The initial recruiting process of LP$^2$ started from the existing networks where all the consortium members were activated (before the project). Starting from this first list of stakeholders, with a snowball approach, new ones were added.  The LP$^2$ was organized in three main sections dedicated to three different themes co-designed with the Lido Pola Community: Urban and Services, Art and Culture, Environment and Coastline. Diverse representation, inclusivity, and transparency are ensured with the stable presence of all the stakeholders involved.  All the meetings and events were co-organized by the Lido Pola Community, promoters, technical and scientific responsible, and disseminated through different channels (institutional channels, social media of CNR, Lido Pola, associations). Unfortunately, the City Council didn't take part in the process nevertheless it was a supporter of the project and was invited each time.

## Experimentation and evaluation

Although LP$^2$ does not follow a process of experimentation and improvement, it employs a co-evaluation approach to assess the effectiveness of experiments and initiatives. This involves numerous feedback and discussion moments throughout the

process. Data, including feedback from stakeholders, is collected through the documentation of minutes and informal protocols.

Sustainability and impact

LP[2] incorporates sustainability goals, with a focus on making the urban transformation process of Bagnoli more sustainable for the environment, people, and future generations. The impact of the ULL on sustainability initiatives is defined, assessed, and quantified through real actions, rather than just assessment processes. These actions include symbolic contestations such as cleaning the beaches, using sustainable vehicles, and creating flexible infrastructures to support sustainable transportation methods.

Methods for participation

LP[2] 's methods of stakeholders' involvement are described in the following table.

| METHOD | FURTHER DESCRIPTION | AIMS | FORMAT |
|---|---|---|---|
| Exploration | | | |
| World café | • Preliminary survey underpinned by the principles of action-research | • Definition of topics<br>• Identification of strengths and weaknesses, capacities and vulnerabilities of the community<br>• Sharing and validating the methodology, strengthening the sense of trust and co-responsibility of the process | • In person |
| Form collaborative mapping | • Territorial survey<br>• Specific public collaborative mapping sessions, open to a wide range of stakeholders<br>• Creation of paper maps that were transferred into digital format | • Defining the territory's potential and criticalities<br>• Reinforcing and expanding the network of territorial actors<br>• Collecting a wide spectrum of perceptions, experiences and knowledge<br>• Transferring spatial knowledge from citizens to researchers through P-GIS | • Blended<br>• Using My Maps to create a participatory geographic information system (P-GIS) |
| Definition | | | |
| Budget allocation | • Detailed and focus attention on each of the priority and relevant aspect emerged from the analysis | • Definition of the most important issues<br>• Construct a road map and co-design actions | - |
| Brainstorming | | | |
| SWOT analysis | | | |
| Business Model Canvas | | | |

| | | | |
|---|---|---|---|
| Focus group | • In-depth dialogue | • Collect feedback and ideas<br>• Transforming needs and expectations into concrete elements<br>• Co-designing | - |
| Planning for Real | • Visualisation and participatory design of the space | | |
| Realisation | | | |
| Public event | - | • Promotion of the themes and results | - |
| Workshop | • Self-construction workshop | • Realisation of the project | • In person |
| | • Storytelling, music co-production workshop<br>• Open to young from the neighbourhood | • Structuring an alternative narrative through the realisation of musical pieces | |

Table 4: LP[2]'s methods for participation.

## ULL4: In Our Neighbourhood: Latsia, Latsia, Cyprus

(Information provided by UCY – Andreas Panagides)

In Our Neighbourhood: Latsia is an initiative of the Municipality of Latsia together with the Department of Architecture of the University of Cyprus aiming to explore the opportunities for citizen-municipality co-production of services at the neighbourhood scale and improve the sustainability of the neighbourhood.  By creating a space that promotes cooperation between the Local Authority and the residents of the area the ULL promotes the participation of all residents in decisions to improve the sustainability of their neighbourhood. The ultimate goal is to create an organised community group to bring the views of the wider community to the City Council of the Municipality.  Some of the stakeholders involved are local residents, general secretary of the mayor, representative of the mayor and a representative from NGO Cyprus Energy Agency.

Initially, through a series of workshops, all Latsia residents were given the opportunity to be heard and express their desires, ideas and concerns for improving their neighbourhood with the overall theme of sustainability and collaboration. Some of the topics to be co-decided include adopting a green space for planting, recycling and composting, co-creation in the neighbourhood/ initiative groups, new ideas and solutions for municipality-community collaboration.

Principles and values

Some important values are kindness, care, give more power and representation to people who are under-resourced and less powerful.

Phases and process

Exploratory phase: At first, decisions about what to explore are taken collectively with the participants, analysing at first, the socially constructed formations that may provide both opportunities and boundaries to collaborative knowledge production.

Selection and implementation phase: In this future phase, it is hoped that later on, some cases will be selected which provide challenges that can be practically reworked.



Diagram 9: Phases of UCY ULL.

Contextualization and real-life setting

A real-life setting is ensured by focusing on real-life problems that are addressed hypothetically at first and hopefully later on, with the scope of selecting some cases which provide challenges which can be practically reworked.

The researcher's/ facilitator's positionality is important in ensuring an ethical responsibility is met and authenticity is maintained during the researcher-participant relationship. This has direct implications on the social and political context within which an ULL is placed.  Positionality refers to where one is located in relation to their various social identities (gender, race, class, ethnicity, ability, geographical location etc.); the combination of these identities and their intersections shape how we understand and engage with the world.

Inclusive stakeholders' participation and co-creation

Inclusive stakeholders' participation and diverse representation were not easy to achieve due to a high non-response rate led to a convenience sample. In other words, self-selection of participants was the main way to collect as large a sample as possible, taking the advantage of the respondents from the Facebook group that was created for the ULL.

Experimentation and evaluation

A key aspect of all ULLs is the inclusion of different types of stakeholders as well as the aspect of feedback and iteration during the process. Feedback from stakeholders is collected through note taking in focus groups, through questionnaires (not very successful) and through personal interviews.

Sustainability and impact

Nothing to be mentioned.

Methods for participation

The primary method used for participation in ULL4 is workshops, which employ a more free-form approach, as indicated in the table below. Although evaluation is not a formal phase of the methodology, some feedback is collected from stakeholders through focus groups, questionnaires (though these have not been very successful), and personal interviews.

| METHOD | FURTHER DESCRIPTION | AIMS | FORMAT |
|--------|---------------------|------|--------|
| Exploration | | | |
| Workshop | • Free-form | • To identify ideas and concerns for improving the neighbourhood | • In person |

Table 5: In Our Neighbourhood: Latsia's method for participation.

# Empirical case studies

The following empirical case study was selected as it has a main focus on youth participation in an urban context.  The Lisbon Living Lab in the project C3PLACES, focuses on teenagers and examines the impact of public spaces on people.

ULL5: C3PLACES, Lisbon Living Lab, Lisbon, Portugal

https://c3places.eu/living-labs/lisbon

The C3Places Project is dedicated to examining the impact of public spaces, such as parks, squares, and streets, on individuals across various dimensions: physical, social, psychological, and cultural.  Its primary aim is to develop strategies and tools leveraging digital technologies to enhance the quality of these spaces.  Through its efforts, the project has gained valuable insights into how placemaking can positively contribute to co-creation and foster social cohesion. One of the main goals of C3Places is to advance knowledge and expertise in designing appealing, adaptable, and inclusive public spaces by effectively integrating social value and ICT solutions. The project is guided by five key principles: Inclusive & Digital Communities, Co-creation of public open spaces, Community Involvement, Public space users and their social practices, and Web-mobile technologies.

C3Places developed four different Living Labs in Ghent, Belgium; Lisbon, Portugal; Milan, Italy; and Vilnius, Lithuania.  The case studies follow the same general guidelines and test co-creation as a methodology to engage people in enhancing public spaces. However, each case has its own characteristics, targets, and implementation strategies.  The Lisbon Living Lab, in particular, focuses on teenagers aged 13 to 17,

recognizing their unique needs and interests in public spaces. Given the intrinsic relationship between teenagers and public spaces, with the latter often serving as crucial environments for their development, the Alvalade neighbourhood in Lisbon serves as a living lab to explore teenagers' behaviours and preferences in urban settings. The primary objective is to engage teenagers in co-creating urban spaces by addressing the research question: "How can we leverage teenagers' affinity for technology to encourage more outdoor activity?"

Principles and values

C3Places prioritizes inclusivity, responsibility, and sustainability, engaging communities in co-creating and transforming public spaces from the outset. Through the use of digital tools and co-creation processes, the project aims to enhance social cohesion, improve urban environments, and promote lifelong learning and civic participation.

Phases and process

The general co-creation process within C3Places Living Labs consists of five main phases (C3Places, 2019):

- Definition of the problem and context:
  Identification of the objectives and an overall strategy to achieve them
- Pre-assessment:
  Assessment of the "openness" of the design teams, respecting the participatory process and users in each site
- Sampling:
  Identification of the participants (10-15 per session), considering target users, and involving "a combination of primary persona types to get different perspectives into the process" (p.24)
- Session's planning:
  Structuring the co-creation sessions by defining their detailed script, milestones, and goals and determining the "facilitator"
- Follow-up
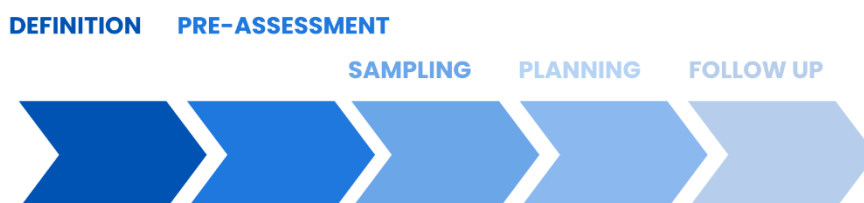  Taking action valuing and using the participants' insights



Diagram 10: General co-creation process within C3Places LLs.

The Lisbon living lab was implemented in two phases (C3Places, 2021):

- The pilot phase organised between February and May 2018 with 49 students, aged 15 to 18 with a focus on the city and its production
- A week-long phase in May 2019 with 20 participants, aged 16 to 18, focusing on developing design proposals for the space in front of their school.

## Contextualization and real-life setting

C3Places Lisbon LL reflects on teenagers' real needs and how they actually use real public open spaces.

## Inclusive stakeholders' participation and co-creation

C3Places Lisbon Living Lab provided insights into the possibilities and challenges of digital co-creation with teenagers, highlighting the necessity of clearly communicated messages, goals, and expectations from the outset. These encompass the understanding of the purpose, timing, expected outcomes of tasks, and the benefits for all participants involved.

In Lisbon, the labs uncovered teenagers limited urban literacy and spatial representation abilities, along with challenges in articulating their own needs and ideas for public spaces. Despite this, the topic engages their interest, and the interactive activities offer a platform for learning about urban spaces and exchanging experiences regarding teenagers' use of and requirements for these spaces. The living labs were integrated into daily school activities, with classes selected by the school board for participation in both phases, potentially affecting students' willingness to engage in digital co-creation compared to voluntary participation. Therefore, it is crucial to evaluate the knowledge, skills, and motivations of the intended participants and utilize their complete capabilities to engage them actively in the co-creation of public open spaces.

The Lisbon findings also underscore the significance of digital co-creation in raising awareness about placemaking and offering platforms for teenagers and other demographics to deliberate various needs regarding public spaces, a vital discourse in urban planning where equitable access and utilization of these spaces by all are imperative.

(C3Places, 2021)

## Experimentation and evaluation

C3Places aims to facilitate co-creation processes by monitoring and evaluating each step, including the development and testing of a mobile application to aid research activities, enabling researchers to explore questions concerning public space use through digital means. Digital and mobile technologies offer the potential to enhance communication and feedback. The project engages individuals or groups, tailoring feedback mechanisms such as questionnaires, web surveys, and focus groups, leveraging ICT to lower participation barriers and stimulate involvement (C3Places, 2019).

Sustainability and impact

C3Places aims to enhance sustainability by investing in research to understand and maintain spatial quality factors, such as accessibility, comfort, security, and environmental sustainability, crucial for effective public open spaces. The project demonstrates that implementing co-creation processes is essential for capturing community needs and specifying quality standards, ensuring that public spaces meet the diverse requirements of their users while fostering sustainability (C3Places, 2021).

C3Places Living Labs are dedicated to comprehensively understanding how ICT influences the effectiveness of co-creation processes, aiming to enhance the enjoyment, quality, accessibility, and attractiveness of public spaces. Integral to the Living Labs is the assessment of impacts, providing tangible measures and operational tools to compare test sites and evaluate changes pre- and post-implementation. These measurable factors encompass environmental and physical indicators such as sound levels, light parameters, and air quality, as well as online activity metrics like social media engagement through data analysis. Additionally, subjective elements regarding the perception and appreciation of a place are also considered, including crowd movements, behavioural observations, and online interactions such as likes and retweets (C3Places, 2019).

Methods for participation

C3Places Lisbon Living Lab involved the teenagers by incorporate participation methods into school activities, both indoor and outdoor, as showed in the table below.

| METHOD | FURTHER DESCRIPTION | AIMS | FORMAT |
|---|---|---|---|
| Thematic workshops | - | • Identification of the teenagers' practices, uses and needs on public open spaces<br>• Discussing the city and its production<br>• Development of design proposals for the space in front of school | • In person<br>• Use of digital tools (Padlet, image bank, presentation programmes and Google Maps) |
| Exploratory site visits | • In the neighbourhood | | |
| Discussions and debates sessions | - | | |
| Questionnaires | - | | |
| Brainstorming | - | | |

Table 6: C3PLACES' methods for participation.

# Cross-reference, analysis and synthesis based on the conceptual framework

In line with the project's objectives, PS-U-GO ULLs aim to operate as educational spaces supporting students', local residents' (with special focus on young people) and

stakeholders' civic engagement and participation in urban governance and the production of urban space. By implementing and evaluating a series of ULLs in four cities, PS-U-GO aims to the development of transferable soft skills, advanced participatory and entrepreneurial skills for HEIs' students in relevant fields, the development of advanced participatory skills for the involved governance bodies and civil society, redefining their role in urban decision making, the delivery of applied interventions and outcomes according to the needs of each context and the initiation and maintenance of a long-term relationship between academic institutions, governance bodies and civil society for urban decision making, focusing on youth participation. Having these project objectives as priorities and based on the literature review presented in the previous sections, a working definition for the project's ULLs is synthesized. This definition forms the foundation for the development of the PS-U-GO ULLs methodologies.
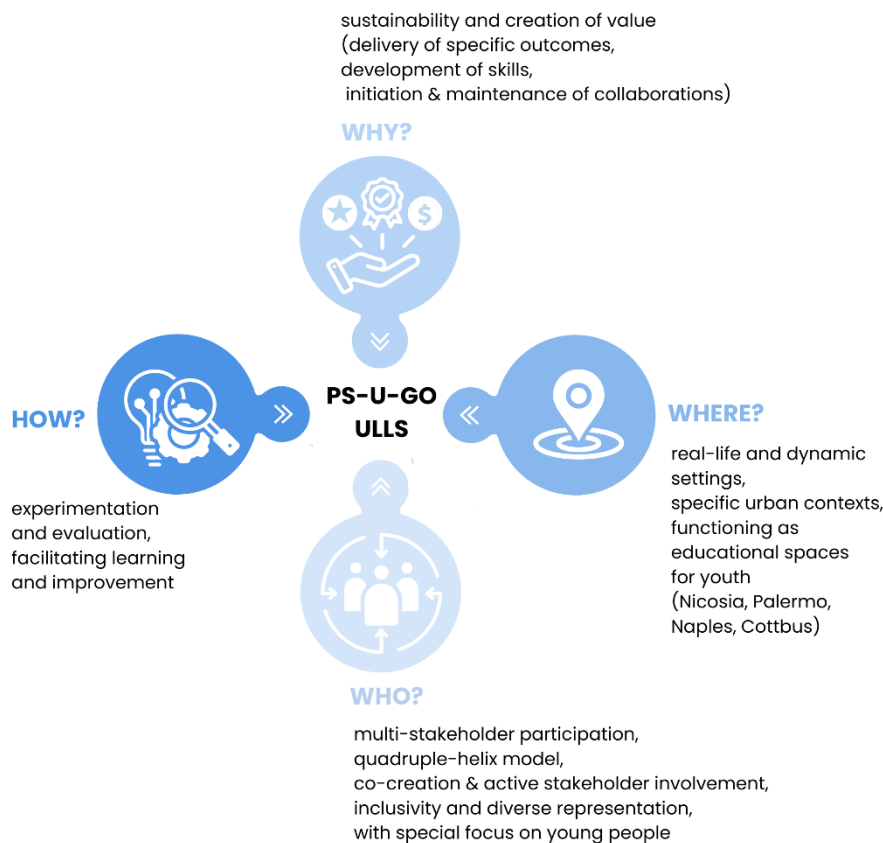


Diagram 11: The characteristics of the PS-U-GO ULLs.

The definition highlights four essential characteristics discussed above (see Diagram 11). This definition incorporates the five fundamental principles crucial for their functioning: value, influence, sustainability, openness, and realism, as stated by Robles et al. (2016). PS-U-GO ULLs aim to:

1. operate in real-life and dynamic settings, strongly rooted in specific urban contexts and functioning as educational spaces for Higher Education Institute (HEI) students and local young people

2.  employ multi-stakeholder participation through the quadruple-helix model, focus on co-creation and active stakeholder involvement, and prioritize inclusivity and diverse representation, with special focus on young people
3.  focus on experimentation and evaluation facilitating learning and improvement and
4.  foster sustainability and creation of value for all stakeholders involved in terms of the delivery of specific outcomes according to the needs of each context, the development of skills for the participants and/or the initiation and maintenance of relationships and collaborations.

PS-U-GO ULLs are situated between what Robles et al. (2016) define as research and intermediary ULLs. These ULLs aim to:

- bring together various stakeholders, including students, local citizens, governance bodies, public authorities, enterprises, researchers, and educators and
- promote scientific development and establish links between research, education, civil society, and local and international governance.

They can also be characterised as civic and organic ULLs, focusing on the priorities outlined by municipal or local authorities, higher education and research institutions, but also addressing contextual challenges associated with the diverse needs and priorities of specific communities or neighbourhoods with primary actors including civil society, especially young people (Marvin et al. 2018).

| The following is a qualitative analysis of the five ULLs presented, highlighting the crucial elements for each section of interest. Principles and values | |
|---|---|
| Madonie Living Lab (MaLL) | • Direct users' involvement and stakeholders' involvement, innovation, sustainability |
| The Academy for Urban Action (AUA) | • Equity, reciprocity (the line between participant and facilitator often gets blurred), critical thinking, kindness, fun (having fun can bring continuity in youngsters' engagement) |
| Lido Pola Permanent Laboratory (LP$^2$) | • Trust, "real" participation – meaningful involvement, recognition of competencies (acknowledging and leveraging the diverse expertise and skills of participants), direct action |
| In Our Neighbourhood: Latsia | • Kindness, care, give more power and representation to people who are under-resourced and less powerful |

| | |
|---|---|
| C3PLACES, Lisbon Living Lab | • Inclusivity, responsibility, and sustainability, social cohesion, lifelong learning and civic participation |

Table 7: Principles and values of existing ULLs.

Based on Table 7, as well as the five fundamental principles of value, influence, sustainability, openness, and realism, incorporated in the PSU-GO ULLs definition three groups of principles were formed:

- relationships between the stakeholders: equity, reciprocity, kindness, care, trust, recognition of competencies, inclusivity (give power and representation to less powerful people)
- operation: meaningful involvement, critical thinking, fun, openness, realism
- scope and overall orientation: sustainability, innovation, value creation, influence, lifelong learning, responsibility, social cohesion.

To prioritise these principles, the established PS-U-GO principles outlined among the project partners in the proposal were considered as crucial: unity and diversity appreciation, fun and informal learning, social sustainability and innovation, and value creation for all participants. Therefore, the following revised groups of principles were highlighted:

- relationships between the stakeholders: acknowledgment and appreciation of both unity and diversity across the varied contexts and individuals:
    - o recognising the importance of coming together as a cohesive whole, while also valuing the diversity of individuals and their unique backgrounds, perspectives, competencies and expertise, adding significant value to the collaboration
    - o emphasizing the need to foster a culture of mutual respect, equity, inclusivity, and tolerance, among diverse groups, while celebrating the richness that diversity brings to the collective experience
- operation: incorporating fun into ULL activities to foster informal learning:
    - o enhancing the learning experience for young people, making it more engaging, memorable, and enjoyable, sparking curiosity, encouraging active participation, and fostering a positive atmosphere
    - o enhancing the effectiveness and sustainability of urban innovation initiatives by inspiring and motivating participants
- scope and overall orientation:
    - o enhancing social sustainability and innovation as a promising and improved means of meeting real needs, promoting a sense of belonging
    - o sustainability in terms of persisting in the long term
    - o value creation for all stakeholders involved by cultivating crucial soft skills, filling competency gaps, empowering through active participation,

and leading to improved urban conditions through the outcomes, fostering a long-term value through collaboration establishments, lifelong learning and replicability.

Table 8 summarizes the findings from mapping the ULL methodologies against the key characteristics defining ULLs, as outlined in the conceptual framework.

| ULLS | GUIDELINES (how?) |
|------|-------------------|
| Contextualization and real-life setting | |
| Madonie Living Lab (MaLL) | • Identification of specific needs: MaLL was initiated to address specific needs expressed by a public actor to combat depopulation and economic losses in a rural area.<br>• Integration of service design approach: MaLL seeks to integrate a service design approach into a living community with strong socio-economic and political ties and dynamics.<br>• User-centered approach: MaLL focuses on designing with the community rather than designing for them.<br>• Involvement of multiple actors: An essential aspect of MaLL is the involvement of multiple actors in an open-innovation process. |
| The Academy for Urban Action (AUA) | • Workshops and visits in the city: AUA ensures an authentic real-life setting by organizing various workshops and visits within the city, ensuring exposure to the urban environment, and interaction with real-world challenges, resources, and stakeholders.<br>• Constant reflection on output implementation: A key aspect of contextualization in AUA is the constant reflection on the eventual output ensuring that it is practical and feasible within the urban context.<br>• "Nomadic"/ Mobile ULL: Although having a fixed place is preferred, AUA recognises the advantages of being "nomadic", moving in the city from place to place. |
| Lido Pola Permanent Laboratory (LP$^2$) | • Location in a contested urban area: LP$^2$ is situated in a highly contested area of the city, characterized by ongoing processes of urban transformation.<br>• Development within existing context: LP$^2$ has been developed within an existing socio-political and environmental context, which includes real difficulties such as environmental challenges and conflicts among various stakeholders.<br>• Integration of cultural, social, and pedagogical activities.<br>• Strong political action tradition. |

| | |
|---|---|
| | • Consensus-based decision making: LP² utilizes protocols of consensus method, which are not based on majority voting, but are reached through dialogue and negotiation, fostering a sense of ownership. |
| In Our Neighbourhood: Latsia | • Focus on real-life problems.<br><br>• Facilitator's positionality: The researcher's/ facilitator's positionality is important in ensuring an ethical responsibility is met and authenticity is maintained. |
| C3PLACES, Lisbon Living Lab | • Focus on teenagers' real needs and real public spaces. |

**Inclusive stakeholders' participation and co-creation**

| | |
|---|---|
| Madonie Living Lab (MaLL) | • Open recruitment strategy: MaLL employs open calls as the primary means of recruitment, utilizing a diverse range of communication channels such as social networks, newsletters, local newspapers, word of mouth, and press, ensuring that participation opportunities are widely accessible and visible across diverse communities.<br><br>• Continuous communication and outreach: MaLL emphasizes continuous communication and outreach efforts for each activity, ensuring that stakeholders remain engaged and informed throughout the process.<br><br>• Mix of online and in-person activities: MaLL strategically employs a mix of online and in-person activities based on objectives and stakeholder preferences, to accommodate varying levels of accessibility and comfort with technology, ensuring that all stakeholders have opportunities to participate in a manner that suits their needs and preferences.<br><br>• Varied event formats: MaLL proposes seven different types of events and formats aimed at different audiences to test which generates more interest in the territory and to enhance local skills, promote exchanges with external parties, and attract external creative energies. |
| The Academy for Urban Action (AUA) | • Open recruitment strategy and utilization of social media: AUA utilizes an open call for participation and establishes partnerships with local schools and youth houses to identify stakeholders. It also leverages visually attractive Instagram story polls and questions to engage youth and allow them to express interest in joining, during the initial recruitment phase.<br><br>• Flexibility and enjoyability: AUA facilitates commitment by selecting moments when most people are available and allowing participants to choose the topic and output of their involvement. Making the process enjoyable through activities such as providing food and offering EU mobilities linked to the topic further encourages sustained engagement.<br><br>• Remuneration and recognition: AUA recognizes the value of stakeholders' contributions by remunerating participants, especially when they are hired to |

| | |
|---|---|
| | conduct workshops on youth participation, acknowledging their time, effort, and expertise. <br><br> • Transparency and openness: AUA promotes transparency through a democratic process, openness in accounts and costs, and the creation of Showcases where the process and results are openly shared. |
| Lido Pola Permanent Laboratory (LP²) | • Initial recruiting process with a snowball approach: LP² initiates the recruiting process by leveraging existing networks activated by all consortium members, allowing with a snowball approach, for the inclusion of new stakeholders, ensuring a broad and diverse representation from the outset. <br><br> • Co-designed activities: LP² organizes its activities into three main sections dedicated to different themes co-designed with the Lido Pola Community, ensuring that the interests and priorities of the community are reflected in the project's objectives and activities. <br><br> • Stable presence of stakeholders: LP² maintains the stable presence of all stakeholders involved throughout the project. <br><br> • Collaborative organization and dissemination: LP²'s meetings and events are co-organized by the Lido Pola Community, promoters, technical and scientific responsible, and disseminated through various channels, including institutional channels, social media of CNR, Lido Pola, and associations. |
| In Our Neighbourhood: Latsia | - |
| C3PLACES, Lisbon Living Lab | • Clear communication: Ensuring that messages, goals, and expectations are clearly communicated from the outset to facilitate understanding and engagement among all participants. <br><br> • Understanding diverse needs: Recognizing and addressing the diverse needs and challenges faced by stakeholders, such as limited urban literacy and spatial representation abilities among teenagers. <br><br> • Integration into daily activities: Integrating co-creation processes into existing structures, such as daily school activities, to facilitate participation and engagement from targeted stakeholders. <br><br> • Evaluation and utilization: Evaluating the knowledge, skills, and motivations of intended participants to actively engage them in the co-creation process and utilize their capabilities effectively. <br><br> • Raising awareness and facilitating discourse: Using digital co-creation to raise awareness about placemaking and provide platforms for stakeholders to deliberate various needs regarding public spaces, promoting equitable access and utilization. |
| Experimentation and evaluation | |

| | |
|---|---|
| Madonie Living Lab (MaLL) | • Diverse experimentation formats: MaLL utilizes various experimentation formats to gather feedback and insights, providing opportunities for continuous improvement.<br><br>• Feedback collection methods: MaLL employs direct observation, open discussions, and surveys as methods for collecting feedback from participants. |
| The Academy for Urban Action (AUA) | • Iterative process of experimentation and improvement: AUA follows an iterative process through discussion and collectively adjusting the process after every session and in more detail after every cycle.<br><br>• Informal evaluation: AUA informally evaluates the experiments and initiatives is by observing the enthusiasm of the youth and with feedback from the participants. |
| Lido Pola Permanent Laboratory (LP$^2$) | • Feedback and discussion moments throughout the process: LP$^2$ employs a co-evaluation approach to assess the effectiveness of experiments and initiatives, with feedback from stakeholders, collected through the documentation of minutes and informal protocols. |
| In Our Neighbourhood: Latsia | • Feedback and iteration: The aspects of feedback and iteration are important. Feedback from stakeholders is collected through note taking in focus groups, through questionnaires and through personal interviews. |
| C3PLACES, Lisbon Living Lab | • Monitoring and evaluating with digital and mobile technologies.<br><br>• Feedback through mechanisms such as questionnaires, web surveys, and focus groups, leveraging ICT to lower participation barriers and stimulate involvement. |
| Sustainability and impact | |
| Madonie Living Lab (MaLL) | • Diverse sustainability objectives reflecting on a holistic approach to addressing environmental, social, and economic challenges.<br><br>• Building and maintaining an active stakeholders' network: MaLL aims to build and maintain an active network between stakeholders to maximise the use of the physical hub's technological facilities; to develop and implement an attractive and sustainable business model that can attract public and private funds and sustain a long-term impact on the area. |
| The Academy for Urban Action (AUA) | • SDGs: AUA can tackle a wide range of Sustainable Development Goals (SDGs) depending on the chosen topic (e.g. equality, climate change, social, eco-social entrepreneurship, etc.). |
| Lido Pola Permanent Laboratory (LP$^2$) | • Sustainability for the environment, people and future generations: LP$^2$ incorporates sustainability goals, with a focus on making the urban transformation process of Bagnoli more sustainable for the environment, people, and future generations. |

| | |
|---|---|
| | • Impact through real actions: The impact of LP$^2$ initiatives is defined, assessed, and quantified through real symbolic actions, such cleaning the beaches, using sustainable vehicles, and creating flexible infrastructures to support sustainable transportation methods. |
| In Our Neighbourhood: Latsia | - |
| C3PLACES, Lisbon Living Lab | • Assessment through measurable factors, considering also subjective elements. |

Table 8: Key characteristics defining the mapped existing ULLs.

Concerning the stakeholder engagement methods that the analysed case studies adopt to involve stakeholders we can observe a comprehensive approach across all ULLs to foster community participation, through varied, adaptable, and inclusive methods. The common methods across all ULLs in various formats are the workshops (free-form, thematic, structured). The world café method is used in both MaLL and LP$^2$ for open discussions and identifying community strengths and weaknesses. In terms of the format and flexibility of the methods, all ULLs emphasize in-person interactions through their methods, essential for building trust and direct engagement. MaLL and LP$^2$ incorporate online and blended methods, increasing flexibility.

Regarding phases and processes, PS-U-GO ULLs will serve as spaces for innovation and align their process with the three stages of innovation development: exploration, experimentation, and evaluation (see Diagram 4), as outlined by Evans et al. (2017). Additionally, it is essential to incorporate a phase of design preceding operation, as outlined by McCormick and Hartmann (2017) (see Diagram 3). This phase enables understanding of each of the four contexts, initiating a shared vision, setting objectives and expected impacts or benefits, outlining a stakeholder engagement strategy, defining roles, and organizing experiments to follow. This general process in three phases is illustrated in Diagram 12.
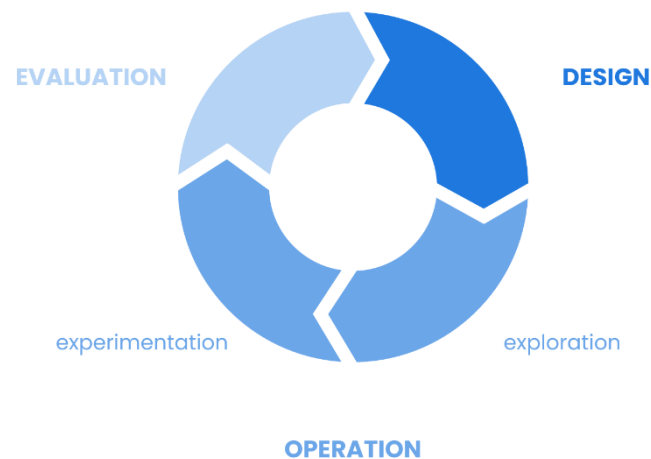
Diagram 12: The three-phases general process of PS-U-GO ULLs.

Each of the analysed Urban Living Labs (ULLs) has its own cycle or linear process with more general or specific steps. All of them commence with an initial operation focused on theme/topics identification, learning and exploration. In the case of MaLL, although the process begins with co-design, this term encompasses identifying needs, stakeholders, and discussing available resources.  Subsequently, all ULLs include a phase of action involving implementation, which manifests differently across the labs. In the case of MaLL, this involves target listening and action, whereas for AUA it entails co-creation, experimentation, and prototyping, for LP[2], it involves co-designing and realization, and for the Lisbon LL it includes a follow-up to inform participants about using and valuing their insights.  Following the action phase, AUA suggests an urban showcase as an essential step for sharing the creative process with the public.  Regarding evaluation, AUA and LP[2] incorporate moments of feedback and discussion during their processes, while MaLL has a phase dedicated to collecting sufficient feedback for future improvements. This phase utilizes methods such as surveys, direct observation, and open discussions with participants.  Overall, each ULL follows a unique trajectory with specific steps tailored to its objectives, emphasizing learning and action and, although are not established in all cases, a phase for showing and a phase of evaluation and feedback are also considered important.

Therefore, the PS-U-GO ULLs can be developed in three phases (see Diagram 13):

- DESIGN AND INITIATION
- OPERATION
  o Theme choice
  o Exploration
  o Experimentation and co-creation
  o Urban showcase
- EVALUATION AND FEEDBACK

Each of the PS-U-GO ULLs can adopt this process, maintaining fixed phases and steps but allowing flexibility in selecting methods, involving stakeholders, and setting specific goals in each phase based on the context.
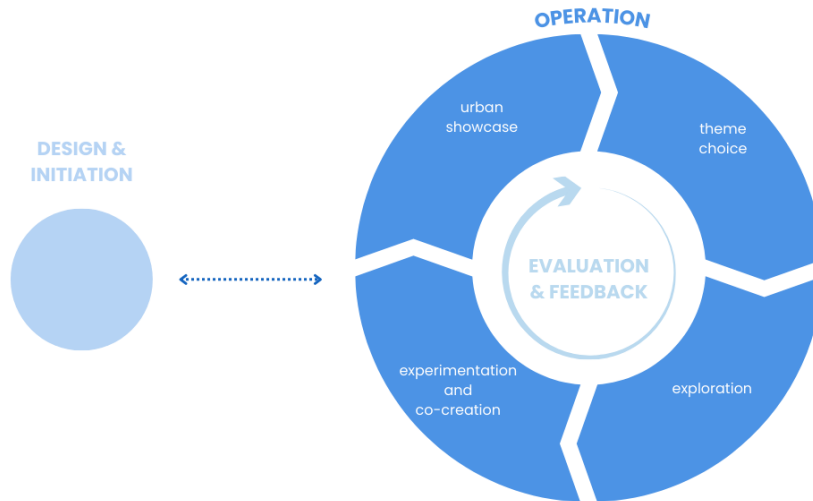


Diagram 13: PS-U-GO ULLs developed in three phases.

# 5. PS-U-GO ULLs' METHODOLOGY

Based on the literature review, and the mapping and analysis of existing ULLs, we formulate the project's ULLs' methodology that underpins the set up and implementation of the four ULLs in Nicosia, Palermo, Naples, and Cottbus. The subsequent sub-sections delineate an encompassing methodological framework tailored to meet the specific objectives of PS-U-GO and to act as a roadmap. This framework is designed with adaptability in mind, allowing for customization within each of the four distinct contexts. It offers a range of alternatives and potential choices to each partnering entity tasked with implementing a ULL (Activity 3.2 "Living Labs implementation").

The PS-U-GO ULLs' methodology works in parallel and complements Deliverable 6, "Situated learning in ULLs", which encompasses the ULLs' pedagogical framework.

## Setting up the four ULLs: Design and Initiation

As indicated through interviews with partners regarding lessons learned and best practices from their ULLs, it is crucial to have a clear and accessible blueprint from the outset of the process. Blueprint serves as a comprehensive guide for planning, implementing, and managing PS-U-GO ULLs, outlining important elements for them including their scope, principles and values, contextualisation and real-life setting, stakeholders' participation, experimentation and evaluation, sustainability and impact, roadmap and communication strategy.

The following guidelines will be useful for each of the four ULLs to design their blueprint, during Design and Initiation phase (Phase 1), based on their specific context, individuals involved and specific objectives.  This will happen during Activity 2.3 "Setting up the ULL in each city" to develop Deliverable 7 "ULLs structure in each city".

Scope

Defining a clear scope is critical for each of the four ULLs, in order to establish the mission and specific goals that will act as guides for operation and evaluation.  The following guidelines about identifying the scope of each ULL, build on the guidelines provided by ENoLL and the lessons learnt by the partners.

- ✓ Define the mission (what will the ULL do for whom & why?) and goals (which problem are we trying to solve?)
  - ○ Focus on addressing issues that are of interest to young people and that impact their lives, communities, and the world around them
  - ○ Focus on sustainability goals, including environmental, social, and/or economic aspects
  - ○ Ensure relevance within the context by trying to respond to context-driven challenges
- ✓ Define the expected outcomes and agree on the scale, form(s), and level of completion considering the available resources (if any) and time
  - ○ a materialised output such as a toolkit, methodology, strategy document, small intervention, application, website, etc., which will be more sustainable over time; and/or
  - ○ an event to share the new knowledge and/or to promote the output

Principles and values

The following principles emerged as important in Section 4.3 and will serve as guiding principles for the four PS-U-GO ULLs:

Relationships between the stakeholders:

- ✓ Acknowledge and appreciate both unity and diversity across the varied contexts and individuals
  - ○ mutual understanding, respect, equity, inclusivity, and tolerance

Operation:

- ✓ Incorporate fun into ULL activities to foster informal learning
- ✓ Ensuring operability space for all participants

Scope and overall orientation:

- ✓ Enhance social sustainability and innovation
- ✓ Create value for all stakeholders involved
- ✓ Enhance lifelong learning and responsibility development

Contextualization and real-life setting:

Based on the Tables 1 and 3 the following guidelines were synthesised and prioritised to ensure the contextualisation and real-life setting of the PS-U-GO ULLs:

- ✓ Ensure broad stakeholder engagement including residents, community organizations, local businesses, and governmental agencies
    - o Integrate a service design approach
    - o Focus on a user-centred approach
    - o Embrace a consensus-based decision-making process
- ✓ Have a specific geographical area (place) and urban context to map the priorities and challenges faced by the community
    - o Identify specific context-based needs
    - o Run on-site activities and expose participants to the urban environment
    - o Be "nomadic" and mobile if needed, moving in the city
- ✓ Ensure a practical and feasible setup, aligning with the commitment of the stakeholders, the available resources and the identified priorities
    - o Constantly reflect on output implementation
- ✓ Have a balanced scope being focused enough to address specific issues but broad enough to capture the complexity of urban challenges
    - o Integrate cultural, social, and pedagogical activities

Inclusive stakeholders' participation and co-creation:

Based on the Tables 1 and 3 and further review of the various protocols and frameworks provided by ENoLL, the following guidelines were synthesised and prioritised to ensure the inclusive stakeholders' participation and co-creation during PS-U-GO ULLs, giving a specific emphasis to young people participation:

Stakeholders' engagement strategy:

- ✓ Ensure an open initial engagement/ recruitment strategy
    - o Employ open calls, utilising a diverse range of communication channels and social media
    - o Leverage existing networks with a snowball approach
    - o Focus on involving actors from the quadruple helix, representing the various stakeholders in each area with an emphasis on young people
- ✓ Build trust and strong relationships

- Use appropriate language, making sure that all terms are communicated in simple way to non-experts.
- Allow sufficient time for discussion, exchange, and social gathering between the stakeholders
- ✓ Ensure as much as possible a stable and sustained engagement
  - Emphasise a continuous communication and collaborative organization and dissemination of activities and outcomes
  - Recognise and remunerate participants (when possible) especially acknowledging their time, effort, and expertise
  - Facilitate enjoyability by providing food and offering EU mobilities linked to the topic
  - Engage stakeholders and experts at different stages of the process, depending on the themes and challenges that arise

Participation methods:

- ✓ Incorporate fun methods, games and informal learning
- ✓ Integrate different levels of participation in the different phases
  - Aim to achieve the co-decision level and give emphasis on active involvement of stakeholders from their early stages
  - Allow a blend of bottom-up and top-down approaches
  - Give priority to youth, meaning not all stakeholders will have the same level or frequency of participation
- ✓ Accommodate varying levels of accessibility and comfort with technology, ensure that all stakeholders have opportunities to participate in a manner that suits their needs and preferences
  - Mix of online and in-person activities
  - Determine the appropriate form and timing in a flexible approach
  - Select moments when most people are available and allow participants to choose the topic and output of their involvement
  - Integrate co-creation processes into existing structures, such as daily activities, to facilitate participation and engagement from targeted stakeholders

A proposed list of methods will follow in Section 5.3, suitable for the different phases, allowing each partner implementing an ULL to select what best align with their specific goals, contexts, and the individuals involved.

Experimentation and evaluation:

Based on the Tables 1 and 3 the following guidelines were synthesised and prioritised regarding experimentation and evaluation within PS-U-GO ULLs:

- ✓ Create a "protected" environment where new ideas and collaborations can be tested facilitating the discovery of alternative solution
  - o Utilise diverse experimentation formats
- ✓ Ensure an open evaluation process that gives the flexibility for exploring multiple ideas and the potential to yield collective outcomes, leading to the emergence of unconventional knowledge
  - o Employ formal evaluation and feedback at the end of every cycle
  - o Gather informal feedback throughout the process
  - o Gather feedback through digital or mobile tools to lower participation barriers

Sustainability and impact:

Based on the Tables 1 and 3 the following guidelines were synthesised and prioritised regarding sustainability and impact within PS-U-GO ULLs:

- ✓ Incorporate diverse sustainability goals addressing environmental, social and economic challenges
- ✓ Emphasise factors such as governance structure, user involvement, leadership, and power distribution to ensure ULLs transformative potential
  - o Build and maintain an active stakeholders' network
  - o Define and quantify impact through achievable and real actions

Roadmap and communication strategy:

The roadmap of each ULL should be shared with all participants, providing an overview of the project, major milestones, and key activities to be completed over time. This helps stakeholders understand the overall timeline of the project.

- ✓ Schedule the operational activities at appropriate times and locations based on participants' availability
- ✓ Choose one of the following approaches or both, depending on the context, specific objectives, and individuals involved
  - o Work on a standard weekly basis, allocating a day and time that suits participants for an extended cycle (e.g., every Wednesday afternoon)
  - o Work in a more intensive and condensed cycle (e.g., 4-5 days)

The communication strategy should be shared in advance with all participants, outlining both the internal communication within each ULL and the communication and dissemination of the ULL's results and processes.

Internal communication

- ✓ Use a more informal approach to enhance participant engagement
  - o Ask the participants, especially youth, to indicate their preferred platform (e.g. Telegram, Messenger, WhatsApp, etc.)

Dissemination and communication of the project

- ✓ Inform everyone about the dissemination levels of each ULL and the PS-U-GO project
  - o Ensure participants' consent to sharing their photos and materials by signing consent forms

## Phases and process

Based on Diagram 13 illustrating the PS-U-GO ULLs process developed in three phases and building upon the learn-make-show methodology proposed by Urban Foxes, a more detailed description follows (Diagram 14):

- • OPERATION:
  - o Theme choice:
    Co-identification of existing needs and opportunities, prioritising youth.
    Aim: To choose (a) theme(s) or topic(s).
  - o Exploration:
    Lab sessions about the theme, reflection in action involving on-site explorations and urban masterclasses, supported by (an) external(s) expert(s).
    Aim: To acquire new knowledge and experience and to co-develop draft ideas/ scenarios leading to a common vision of positive urban action.
  - o Experimentation and co-creation:
    Co-creation, testing or prototyping (if needed), supported by (an) external(s) creative expert(s) (if needed).
    Aim: To produce the expected outcome(s).
  - o Urban showcase:
    Sharing of the creative process and outcome with the public.
    Aim: To communicate and share the new knowledge produced in an understandable, direct and creative way.
- • EVALUATION AND FEEDBACK:
  Aim: To collect feedback from the participants and stakeholders, useful for the process, methodology and outcomes improvement.
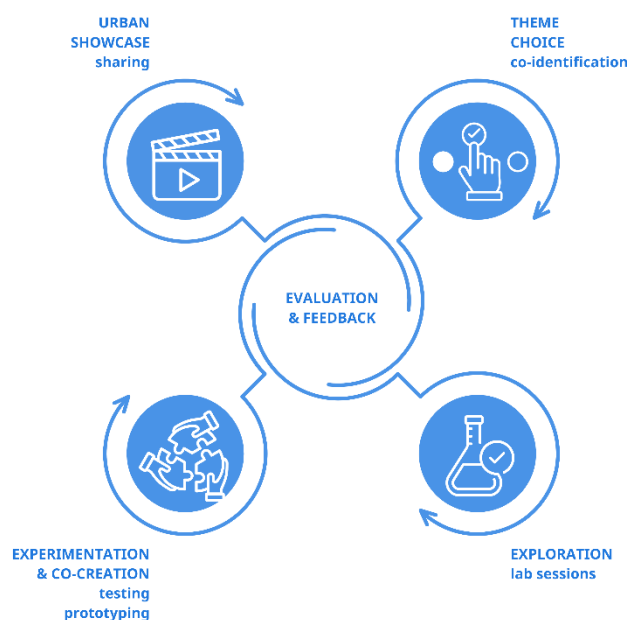
Diagram 14: PS-U-GO ULLs six-step process developed in three phases.

Each partner implementing an ULL can decide on implementing the cycle within a more extended period and/or in a more intensive and condensed cycle, depending on its local context, objectives, and stakeholders involved.  Also, each of the PS-U-GO ULLs can adopt this process, maintaining fixed phases and steps but allowing flexibility in selecting methods, involving stakeholders, and setting specific goals in each phase based on the context.

The evaluation and feedback phase in ULL cycles ensures the continuity and application of skills gained by incorporating reflective learning and creating feedback loops. Reflective feedback and detailed documentation help in critically analysing experiences, solidifying learning and enabling adaptation to new contexts. This iterative, cyclic approach fosters continuous improvement, scalability, and transferability of successful practices, ensuring the sustained impact of the ULLs.
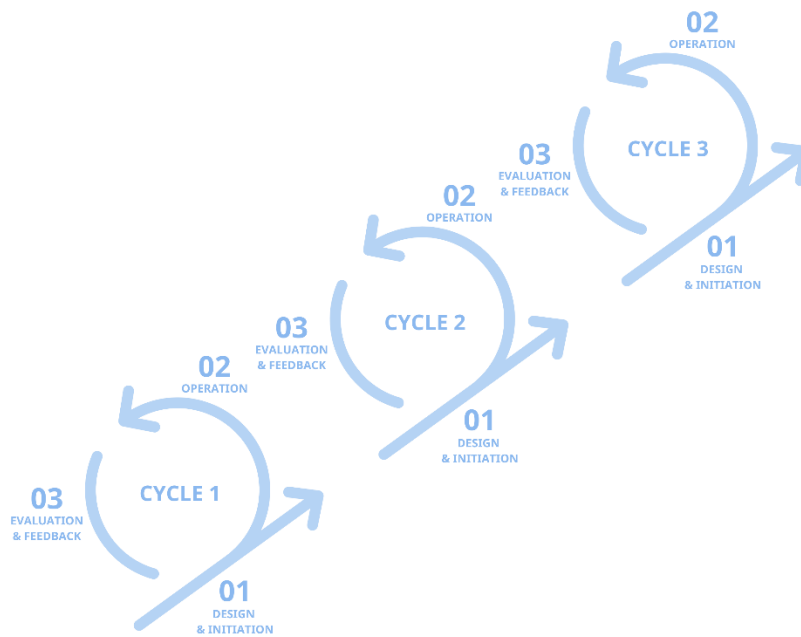
Diagram 15: PS-U-GO ULLs' iterative, cyclic approach of continuous improvement.

# Participation methods for phases 2 and 3 (operation, evaluation & feedback)

Drawing from the proposed methodology, the partners' ULLs methodologies and some toolkits provided by ENoLL, Table 9 is developed to encompass a variety of methods suitable for each phase of the methodology.

Section 5.1 outlines guidelines that aim to integrate varying levels of participation across different phases, ensuring stakeholders are involved from the outset. These guidelines also prioritize accommodating diverse levels of accessibility and comfort with technology, providing opportunities for all stakeholders to participate according to their needs and preferences and offering a flexibility through a blend of online and in-person activities.  Priority is given to methods that incorporate fun and adopt a playful structure and format, thereby making the process enjoyable and interactive and enhancing informal learning.

Each method chosen is aligned with the phases of operation (theme choice, exploration, experimentation & co-creation) and evaluation & feedback as per the methodology.  The aims of each method are tailored to fit the specific goals of each phase, such as generating ideas, testing prototypes, and collecting feedback.  The format includes considerations for in-person, online, and blended approaches to accommodate various levels of accessibility.  The table allows flexibility for partners implementing a ULL to select methods that best align with their specific goals, contexts, and the individuals involved, ensuring a comprehensive and inclusive approach to participation throughout the ULL process. Adjustments can be made based on specific

project needs and stakeholder preferences while maintaining the core principles of engagement and co-creation.

OPERATION:

| METHOD | DESCRIPTION | AIMS | FORMAT |
|---|---|---|---|
| Theme choice: To choose (a) theme(s) or topic(s). | | | |
| SWOT Analysis | • Can be used in relation to a/some focus area(s)<br>• In groups/ All | • Identification of Strengths, Weaknesses, Opportunities and Threats<br>• Definition of the most important issues and topics | • In person or<br>• Blended using Miro or Canva |
| Mindmap | • Visualisation of topics, their associations and relations<br>• In groups | • Capturing and organising ideas, placing links between ideas<br>• Identification of topics, subtopics and themes that need to be explored by making them visual | • In person or<br>• Blended using Miro or Canva |
| **Multivoting** | • Interactive voting process<br>• In groups/ All | • Achieving consensus on themes based on personal preferences | • In person or online depending on the technique, using Opinionx |
| Exploration: To acquire new knowledge and experience and co-develop draft ideas/ scenarios leading to a common vision of positive urban action. | | | |
| Initial Situational Analysis (I.S.A.) using City Expedition | • Sensory exploration of urban environment through interactive and fun activities<br>• In small groups, walking in the area | • Team building<br>• Sensory exploration of urban environment<br>• Identification of current knowledge | • In person |
| Collaborative mapping using Participatory Mapping | • Map making process using guiding questions by a facilitator to include more information<br>• In small groups | • Identification how different stakeholders perceive the relationship between places and people in a specific context and over time | • In person or<br>• Blended using My Maps |
| Masterclass | • An expert guides participants to answers | • Answering any questions arisen, learning | • In person |
| Brainwriting | • Anonymously brainstorming ideas/ options based on a question/ issue<br>• In small groups | • Sharing ideas, achieving consensus and reflecting<br>• Expressing views of people who may feel uncomfortable to do it | • In person |

| | | | |
|---|---|---|---|
| Lego Serious Play | • Game, building solutions with Lego bricks based on specific questions/ issues<br>• In groups of 5 people | • Building, sharing, reflecting, thinking and learning with 3d models | • In person |
| Experimentation and co-creation: To produce the expected outcome(s). | | | |
| Thematic workshop | • Co-production workshop | • Structuring alternative way<br>• Realisation of solution(s) | • In person |
| Creative experts | • Co-creating with creative experts and/ or partners | • Creation of an impactful creative output | • In person |
| Blink testing | • 5 second blink test<br>• Large group/ All | • Determining if first impressions are on point regarding the purpose, main elements, target audience and quality of design | • In person or online using Five second test |
| Prototyping | • Prototyping and experiment with solutions | • Testing and fine-tuning the design into a prototype | • In person |
| Urban showcase: To communicate and share the new knowledge produced in an understandable, direct and creative way. | | | |
| Public event | • Public event with the involvement of all the stakeholders (e.g. a walk etc.) | • Promotion and communication of the results | • In person or<br>• Hybrid |
| Thematic workshop/ session | • Workshops to showcase the creative process and outcomes through a creative session (e.g. storytelling etc.) | • Sharing with the public in a fun and interactive way<br>• Collecting informal feedback/ impressions | • In person |

EVALUATION AND FEEDBACK: To collect feedback from the participants and stakeholders, useful for the process, methodology and outcomes improvement.

| METHOD | DESCRIPTION | AIMS | FORMAT |
|---|---|---|---|
| I like, I wish, what if | • Structured individual feedback based on three kinds of statements | • Collecting positive and negative feedback, as well as new ideas to be explored in future | • In person or<br>• Online using Miro or Canva |
| Open discussion | • Structured session<br>• All | • Gathering of comprehensive feedback in an open environment | • In person or<br>• Online |
| Direct observation | • Observation in real-time | • Observing behaviours and interactions | • In person |

| | | • Collecting and documenting anonymous feedback on the strengths and weaknesses of the ULL | • In person or |
|---|---|---|---|
| Questionnaires | • Anonymous feedback through several questions | • Assessing the impact of the lab on the participants (combining pre and post questionnaires) | • Online using Google Forms |
| Reflective report | • Introspective document analysing the processes, outcomes, and personal experiences | • Collecting and documenting findings, reflections, and recommendations in an engaging manner | • In person |

Table 9: Participation methods for each phase of the proposed methodology.

# 6. CONCLUSION

The methodology developed for the PS-U-GO ULLs represents a comprehensive framework for setting up and implementing initiatives in Nicosia, Palermo, Naples, and Cottbus. This methodology, outlined in detail throughout the document, provides a structured procedure for achieving specific goals while allowing flexibility for adaptation to diverse contexts and work in parallel and complements with Deliverable 6, "Situated learning in ULLs," which forms the pedagogical framework of the project.

The methodology includes three main phases: design and initiation, operation, evaluation and feedback. The operation phase is further broken down into specific steps, while all of them incorporate specific activities, and guiding principles to ensure successful implementation. Several guidelines are provided for the first phase of setting up the ULLs, including defining scope, principles and values, contextualization, stakeholder participation, experimentation and evaluation, sustainability and impact, roadmap, and communication strategy. A table with several participation methods is developed, suitable for phases of operation and evaluation, allowing partners to select those aligning with their specific aims and objectives.

Overall, the methodologies provide a robust framework for implementing the PS-U-GO ULLs, ensuring relevance, inclusivity, and sustainability across diverse contexts while fostering meaningful collaboration and positive urban action.

# REFERENCES

Almeida, I., Batista, J. S., Menezes, M., & Smaniotto Costa, C. (2018). Adolescentes e Cocriação do Espaço Público. Oficinas Temáticas de Urbanismo 2017-2018. Relatório Preliminar sobre o Estudo de Caso de Lisboa. *Lisboa: Edições Universitárias Lusófonas. https://c3places.eu/sites/default/files/cs_reports/Relatorio%20Oficinas%20Urbanismo%2024 0718.pdf*

Arbter, K., Purker, M. H. E., Tappeiner, G., & Trattnigg, R. (2007). The Public Participation Manual: Shaping the Future Together. Vienna: Austrian Ministry of Environment & ÖGUT.

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of planners*, 35(4), 216-224.

Bergvall-Kåreborn, B., Eriksson, C. I., Ståhlbröst, A., & Svensson, J. (2009). A milieu for innovation: defining living labs. In *ISPIM Innovation Symposium: 06/12/2009-09/12/2009*

Bulkeley, H., Coenen, L., Frantzeskaki, N., Hartmann, C., Kronsell, A., Mai, L., ... & Palgan, Y. V. (2016). Urban living labs: governing urban sustainability transitions. Current opinion in environmental sustainability, 22, 13-17.

C3Places. (2019). Methodological Framework for LIVING LABS. Retrieved from https://c3places.eu/sites/default/files/page-files/C3Places_D1_1%20Methodological%20Framework%20for%20LIVING%20LABS.pdf

C3Places. (2021). C3Places eBook. Retrieved from https://c3places.eu/sites/default/files/page-files/C3Places%20eBook.pdf

Colantonio, A. (2010). Urban social sustainability themes and assessment methods. Proceedings of the Institution of Civil Engineers-Urban Design and Planning, 163(2), 79-88.

Corbisiero, F., Napoletano, F. (2023), Come rigenerare la città attraverso la tecnologia partecipata: il caso del PGIS applicato al quartiere Scampia di Napoli. Sociologia Urbana e Rurale, 132, pp. 127-149.

Costa, C. S., Batista, J. S., & Menezes, M. (2021). What happens when teenagers reason about public open spaces?. Lessons learnt from co-creation in Lisbon. *Cidades. Comunidades e Territórios*, (43).

Davidson, S. (1998). Spinning the wheel of empowerment. *Planning*, *1262*(3), 14-15.

Doucet, I., & Janssens, N. (2011). Transdisciplinary Knowledge Production: Towards Hybrid Modes of Inquiry in Architecture and Urbanism. https://doi.org/10.1007/978-94-007- 0104- 5.

European Network of Living Labs (ENoLL). https://enoll.org/

Evans, J. (2016). Trials and tribulations: Problematizing the city through/as urban experimentation. Geography Compass, 10(10), 429-443.

Evans, J., & Karvonen, A. (2014). 'Give me a laboratory and I will lower your carbon footprint!'—Urban laboratories and the governance of low-carbon futures. *International Journal of Urban and Regional Research*, 38(2), 413-430.

Evans, P., Schuurman, D., Ståhlbröst, A., & Vervoort, K. (2017, December 4). *Living Lab Methodology Handbook.* https://issuu.com/enoll/docs/366265932-u4iot-livinglabmethodology-handbook

Esteban, T. (2020). Building resilience through collective engagement. Architecture_MPS, 17(1), 1-15.

Haufe, N., Franta, L., Dangschat, J., & Witthöft, G. (2017). *Handbook for Participation Strategies for Mobility Issues in Neighbourhoods* (No. D2.1).

IHS. (n.d.). *Co-create your city toolkit*. https://www.ihs.nl/en/advisory-training-and-research/tools-and-toolkits/co-create-your-city-toolkit/toolkit

Joint Programming Initiative Urban Europe (JPI Urban Europe).  https://jpi-urbaneurope.eu/

JPI Urban Europe. (2015). *The strategic research and innovation agenda. Towards sustainable and liveable urban futures.* Retrieved from https://jpi-urbaneurope.eu/wp-content/uploads/2016/05/JPI-Urban-Europe-SRIA-Strategic-Research-and-Innovation-Agenda.pdf

Juujärvi, S., & Lund, V. (2016). Enhancing early innovation in an urban living lab: Lessons from Espoo, Finland.

Klein, J. T., Grossenbacher-Mansuy, W., Häberli, R., Bill, A., Scholz, R., & Welti, M. (2001). Transdisciplinarity: Joint Problem Solving among Science, Technology, and Society An Effective Way for Managing Complexity.

Liedtke, C., Jolanta Welfens, M., Rohn, H., & Nordmann, J. (2012). LIVING LAB: user-driven innovation for sustainability. *International journal of sustainability in higher education*, *13*(2), 106-118.

LopezDeAsiain, M., & Díaz-García, V. (2020). The importance of the participatory dimension in urban resilience improvement processes. Sustainability, 12(18), 7305.

Marvin, S., Bulkeley, H., Mai, L., McCormick, K., & Palgan, Y. V. (Eds.). (2018). *Urban living labs: Experimenting with city futures*. Routledge.

McCall, M. K., & Peters-Guarin, G. (2012). Participatory action research and disaster risk. In Handbook of hazards and disaster risk reduction (pp. 772-786). Routledge.

McCormick, K., and Hartmann, C. (2017). *The Emerging Landscape of Urban Living Labs: Characteristics, Practices and Examples.* https://lup.lub.lu.se/search/ws/files/27224276/Urban_Living_Labs_Handbook.pdf

Menny, M., Palgan, Y. V., & McCormick, K. (2018). Urban living labs and the role of users in co-creation. *GAIA-Ecological Perspectives for Science and Society*, *27*(1), 68-77.

Nesti, G. (2018). Co-production for innovation: the urban living lab experience. *Policy and Society*, 37(3), 310-325.

Ravetz, J., Evans, J. Astbury, J. (2018). LEARNING LOOPS IN THE PUBLIC REALM. Deliverable D 4.1 GUIDELINES FOR THE LIVING LABS. https://mobilise.research.vub.be/sites/default/files/2023-12/LOOPER_D4.1_Guidelines-for-Living-Labs_FINAL.pdf

Robles, A. G., Hirvikoski, T., Schuurman, D., & Stokes, L. (2016, February 2). *Introducing ENoLL and its Living Lab communit*y. https://issuu.com/enoll/docs/enoll-print

Reed, M. S. (2008). Stakeholder participation for environmental management: a literature review. *Biological conservation*, *141*(10), 2417-2431.

Salama, A. M. (2005, January). Skill-based/knowledge-based architectural pedagogies: An argument for creating humane environments. In 7th International Conference on Humane Habitat-ICHH.

SISCODE. (2019). *SISCODE toolkit*. https://siscodeproject.eu/wp-content/uploads/2019/09/toolkit-27092019-1.pdf

Steier, F., Brown, J., & Mesquita da Silva, F. (2015), "The World Cafe in Action Research Settings", in H. Bradbury (Ed.), The SAGE handbook of action research (third), SAGE Publications, London.

UNALAB. (n.d.). *UNALAB project website*. https://unalab.enoll.org/

United Nations. (2020). World youth report: Youth Social Entrepreneurship and the 2030 Agend. https://www.un.org/development/desa/youth/world-youth-report/wyr2020.html

Voytenko, Y., McCormick, K., Evans, J., & Schliwa, G. (2016). Urban living labs for sustainability and low carbon cities in Europe: Towards a research agenda. *Journal of cleaner production*, 123, 45-54.

World Health Organization. (2018). Youth and health risks. Report by the Secretariat 2011.

# APPENDICES

## Appendix 1: Interviews

Interviews questions

1. Overview

- What do you think is the value and the main characteristics of an ULL? Why do you think it is important to use this approach?

- Give us an overview of an ULL you have run (specific objectives, principles, rules and proposed processes)

- Can you describe the methodology and tools employed in this Urban Living Lab?

2. Challenges and lessons learnt

- What are the main challenges you encountered during the ULL?

- How did you overcome these challenges, and what strategies did you find most effective?

- What are some key lessons learned through your experience for a successful ULL?

- What do you consider as best practices through the ULL experience?

- What recommendations would you give to others interested in setting up or participating in similar projects?

Interviews transcriptions

Can be available after request at info@psugo.eu.

## Appendix 2: Questionnaires

Questionnaires format

Please fill in the following questions regarding an ULL you have run.

1. General basic information of the ULL
    - Title and website (if any):

- Place(s):
- Stakeholders involved:
- Brief aim:

2. Phases and process (provide any helpful diagrams and visualisations)
   - Please describe
     - the modus operandi and blueprint of the ULL.
     - the pedagogical framework of the ULL (if any).
     - the different stages or phases within the ULL process. What is the purpose or objective of each stage?
     - the activities taking place during each stage.
   - Are your methodology and framework sufficiently flexible to adapt to various contexts? How do you ensure this adaptability?

3. Contextualisation and real-life setting
   - How do you ensure a real-life setting within the ULL?  Explain the mechanisms or strategies you employ to maintain authenticity and practicality while integrating real-world urban environments into your project.

4. Inclusive stakeholders' participation and co-creation (provide any helpful diagrams and visualisations)
   - How do you ensure diverse representation, inclusivity, and transparency in the ULL?
   - Can you describe specific tools and methods to engage stakeholders in decision-making processes at various stages of the ULL? (Please refer to initial recruiting, facilitating commitment and active participation etc.)
   - 
5. Experimentation and evaluation
   - Does the ULL follow any iterative process of experimentation and improvement?  If yes, can you describe how experimentation is conducted?
   - Are any methods or frameworks used to evaluate the effectiveness of experiments and initiatives within the ULL?
   - Is any data, including feedback from stakeholders involved collected during the ULL, and if yes, how?

6. Sustainability and Impact
   - Are there any sustainability goals of the ULL?
   - How do you define, assess, and quantify the impact of the ULL on any sustainability initiatives?

7. Other
   - Add anything else you consider as important.