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Anticipating experimentation as the ‘the new normal’ through urban living labs 2.0: lessons learnt by JPI Urban Europe

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article

Abstract

Urban living labs (ULLs) can be an important way to approach multi-stakeholder co-creation with regard to urban transitions and transformations. They have become a common type of co-creative experimentation, offering the opportunity to research and innovate on a wide variety of challenges in everyday settings. They test hypotheses to create pathways for a transition to sustainable urbanisation. However, there is mounting concern from practice, innovators, and research that there is little systematic integration of practical outputs. Moreover, the question of how ULLs should be designed, and by whom, requires comparative longer-term assessment. Implementation and operation requires knowledge of the risks involved. The long-term impacts of ULLs on particular places, and the general understanding of how they contribute to urban transformations, are not well theorized. Thus, intended and potential contributions to urban transformations could remain unrealized. Based on experience from a series of stakeholder dialogues and co-production formats at various ULL related conferences and workshop, this paper offers policy recommendations and directions regarding the future direction for JPI Urban Europe its main programme for 2021–2027, the European Partnership *Driving Urban Transitions to a Sustainable Future* in the Horizon Europe Framework Programme. It may also help other urban research and innovation funders and programming actors support sustainable transformations through urban living labs.

Keywords: Urban living lab, Urban transformation, Urban experimentation, Everyday practice, Knowledge practice, Transition policy

Policy and practice recommendations for research and innovation funders

- Consider urban living labs as a kind of clearing house between funding streams (e.g., between research and innovation programming and structural funds) and various local or neighborhood experiments
- Bring forward the urban living lab projects which demonstrate clear learning results and have incorporated that learning into urban governance



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- Offer ‘Continuation calls’ to support governance integration of urban living lab approaches and learnings
- Allow for a piloting phase before the start of a project to adapt and stabilise urban living lab methods and approaches
- Earmark follow-up funding for continuation of urban living labs and learning from results

When it comes to matters of science, technology and the environment, it is increasingly apparent that it is no longer possible to operate in closed or secluded settings where public interest or social utility can be simply presumed. (Chilvers and Kearnes 2016: 2)

Introduction

Urban living labs (ULLs) have become an increasingly common forum for co-creative experimentation over the past decade, with Europe as a hotspot and pilot region. ULLs offer the opportunity to research, innovate and test hypotheses and program elements related to a wide variety of challenges in transitions to urban sustainable living. Despite mounting concern from practice and innovators, there is little systematic integration of practical outputs of urban living labs into everyday urban governance and development. Moreover, the question of how they are to be designed, and by whom, requires comparative longer-term assessment, considering that current approaches are driven by a highly diverse set of actors and interests. Implementation and operation also require knowledge and understanding of the risks involved. The long-term impacts of ULLs on particular places as well as on general urban transitions are not well understood.

According to von Wirth et al’s (2019: 230; cf. ENoLL 2018), ULLs ‘represent sites in cities that allow stakeholders to design, test and learn from socio-technical innovations in real time. Participation, experimentation and learning are put centre stage.’ This definition is in line with the working definition of urban living labs used by the Joint Programming Initiative (JPI) Urban Europe up until 2019:

[A ULL is 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: 59)

The Joint Programming Initiative (JPI) Urban Europe is a research and innovation programme strongly supporting the implementation of ULLs in its funded projects. Founded in 2010, JPI Urban Europe is a cooperation among more than 20 European Union member states, the EU as well as non-EU countries in a transnational research and innovation initiative that addresses the challenges of sustainable urban development. JPI Urban Europe has built a multi-stakeholder community comprising researchers from various disciplines, representatives of municipalities and city authorities, business, entrepreneurs, planners, infrastructure providers and societal initiatives (see also Bylund 2020). Activities have so far resulted in a network of

more than 25 ministries, funding agencies and related public programme owners. Issues relating to smart cities, the food-water-energy nexus, urban accessibility and connectivity, urban governance and public sector innovation have been addressed. A portfolio of more than 111 projects has been created across Europe as well as intercontinentally (e.g., through a China call cooperation and a Belmont Forum call collaboration).

The over 180 urban living labs supported by JPI Urban Europe have dealt with dilemmas ranging from urban governance, water management and e-participation to mobility management, inter-ethnic co-existence and stakeholder involvement. Because of their practical and thematic versatility, urban living labs are considered flagship initiatives among funded urban research and innovation objectives in JPI Urban Europe.

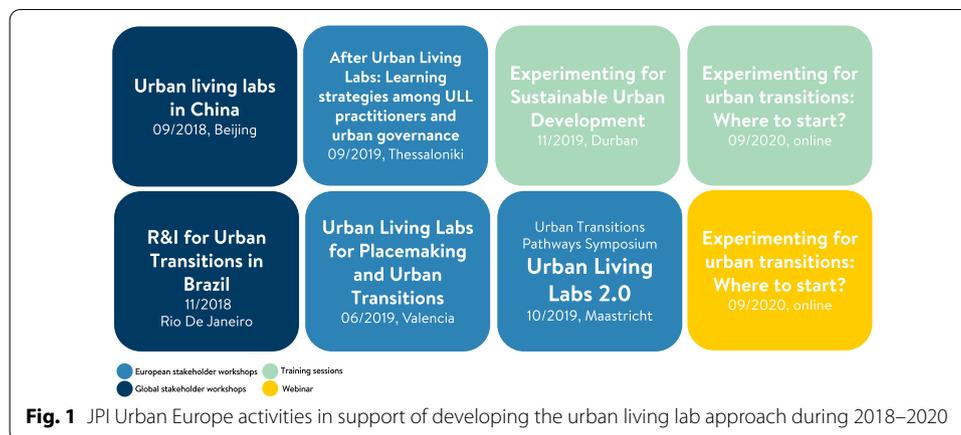
Why are urban living labs important?

There are at least two interconnected reasons why JPI Urban Europe considers ULLs a flagship approach in its programming: one ontological and one sociotechnical.

Firstly, we can argue that an increasing reliance on experimentation may reflect a change in urban transformations (e.g. Karvonen 2018; Bulkeley et al. 2016: 15; Bylund et al. 2020). Over recent decades, there has been an ongoing shift from a view of experimentation as a highly specific approach limited to technological innovation, to broader and more institutionalized applications. Few urban policy implementation and development institutions, including 'routine' planning and provisioning for public services, can currently rely on standard actions and solutions ('bureaucratic box-checking'). In other words, little seems to be 'going according to plan.' The reason for this is oftentimes urban complexity; innovative sociotechnical changes generate various and unforeseeable externalities when implemented in a linear plug-and-play approach, and regular actions suddenly generate new dilemmas (cf. Rittel and Webber 1973; Metzger and Lindblad 2021). As a result, European cities are now increasingly seen as innovation ecosystems in contrast to 'objects of innovation' (Schaffers et al. 2011, pp. 432).

Secondly, ULLs may be needed due to sociotechnical reasons. They prompt researchers and innovators to work hands-on in processes and reflect on what effects this experimental approach has for broader urban collaborative governance (cf. Bylund 2013). This co-creation potential relates to the European policy area Responsible Research and Innovation (RRI) in that it seeks to anticipate and assess broader implications of 'research and innovation in an ethical, inclusive and responsive way' (Owen and Pansera 2019: 26). This RRI is a crucial aspect of what Felt and Wynne (2007) identified as the need for a shift in research and innovation systems from a regime of the economics of technoscientific promises to a regime of collective experimentation (see also Chilvers and Kearnes 2016; Marres 2010; Callon et al. 2009). This requires a thoughtful design of programmes on urban transitions by research and innovation policy.

Contingencies and problems generated by techno-economical 'push approaches' as well as by linear policy implementation schemes commonly require remediation to actually work and to fend off negative externalities (Callon et al. 2009). Experimentation and creative problem solving are therefore critical. This means that ULLs '... are (...) part of a wider "politics of experimentation" through which the governing of urban sustainability is increasingly taking place' (Bulkeley et al. 2015: 9). ULLs are – in an umbrella sense



– approaches to build capacities and an experimental, co-creative support for urban transformations (Wolfram et al. 2019).

However, the ULL approach is not a panacea or without flaws. JPI Urban Europe has attempted to identify and articulate issues and concerns regarding the use of ULLs together with a diverse group of stakeholders and in a variety of conference sessions, workshops and webinars between 2017 and 2020 (Fig. 1). Participants were invited to present and reflect upon concerns with regard to ULLs on funded projects' output (Fig. 2),¹ and on the mapping and development work carried out by an in-house support task that followed up funding agencies' and projects' experiences of working with ULLs.² This work made it clear that the ULL approach, as implemented within JPI Urban Europe, has yet to deliver and support *the big leaps* required for urban transformation, if it is to fulfil the ambitions outlined in the *Driving Urban Transitions to a Sustainable Future* Partnership in the EU Horizon Europe Framework Programme 2021–2027 (EC 2021).

The following section presents a summary of five concerns emerging in various stakeholder events and settings (Fig. 1). The concluding section presents a perspective for the next seven years in European urban research and innovation programming.

Five concerns with ULLs 1.0 and how to address them

At this point, JPI Urban Europe is a 'concerned optimist' regarding ULLs, and we therefore wish to acknowledge five main concerns about the approach. These concerns need addressing if the ULLs are to substantially shape, impact and support urban transformations. Otherwise ULLs risk contributing little to systemic innovation, at most supporting incremental progress, or even increase negative externalities. Linked to the five concerns we suggest a need for action at the policy, programme and project levels, and also outline examples of ways to address them.

¹ See JPI Urban Europe (2021) for past joint call descriptions, recording of the dedicated Urban Lunch Talk #7, and reports on activities to support urban living labs; and EC (2021) for context of proposed types of support 2021–2027.

² The task is coordinated by Krithika Ramesh and Merijn deBeen under the Coordination and Support Action Expand II, which is European Commission (EC) Horizon 2020 project no. 857160.

However, some concerns may require more than programming measures and actions. These have to do with nomenclature as well as with the experimental ethos and the cultivation of a kind of RRI integrated at the core of ULLs. After all, there may be people who resist or at least find it intrusive when their everyday lives are interrupted as part of experimenting, who abhor being ‘rats in a maze’. What is crucial here is a baseline RRI script in the ULLs’ experimental ethos: the distinction between ‘research on’ vs. ‘research with’, where the latter ensures that actors do not end up feeling like research subjects.

Table 1 identifies features and characteristics of ULL 1.0, ULL 2.0 features for policy, programming and project contexts, and proposed development areas (derived from stakeholder dialogues and workshops organised by JPI Urban Europe).

Concern one: overemphasis on the ULLs label rather than its core features

Particularly when initiated as demonstration and pilot projects, ULLs symbolically signal innovativeness without necessarily addressing integrated urban innovation and transformation requirements. In these cases, they are mainly used to brand cities as innovative.

Stakeholder dialogues revealed a concern that paying only lip-service to the urban living lab approach may undermine its potential and make it difficult to maintain focus. Community-level urban development through co-creation and experimentation are important aspects of urban transformations, and core features of ULLs. These features can be integrated into local and regional governance practice without necessarily being labelled ‘urban living labs’. To address this concern, call criteria can emphasize that the purpose of a project is to flexibly answer to the challenges the project has set out to tackle, not necessarily to implement an ‘urban living lab’ per se.

Furthermore, avoiding mere labeling is important to urban governance legitimacy, since societal change processes are brought closer to city dwellers – to their very neighbourhoods – and help respond to societal concerns in Europe regarding democracy, decentralization of power, and supranationalism.

Concern two: not knowing the core issues of the ULL approach

Exchanges and dialogues with both urban living lab practitioners and research and policy actors reveal a concern that ULLs are not contributing to larger scale urban transformations. A key challenge is to avoid transitioning to a 2.0 version from an imperfect 1.0 version without critically reflecting on the strengths and weaknesses of the initial approach. In other words, programming needs to help actors to get to the core of the pros and cons concerning how urban living labs are run and used today in order to develop to a new and improved version. Areas for improvement include 1) language that excludes non-experts, 2) over-emphasis on technological solutions, and 3) ‘solutionism’ in general, i.e. that with the right devices, technology can solve all problems.

Regarding the first and second concerns, ULLs that are to rise to a 2.0 level need to demonstrate an awareness of ULL shortcomings (concern 2) and thus adopt the approach and label in a careful, critical way by highlighting, for instance, what the process aims to achieve and what values (concern 1) it is guided by (e.g., participation, localising democracy, testing as a way to make policy) – rather than just ‘start experimenting’ with little to no critical assessment of methods.

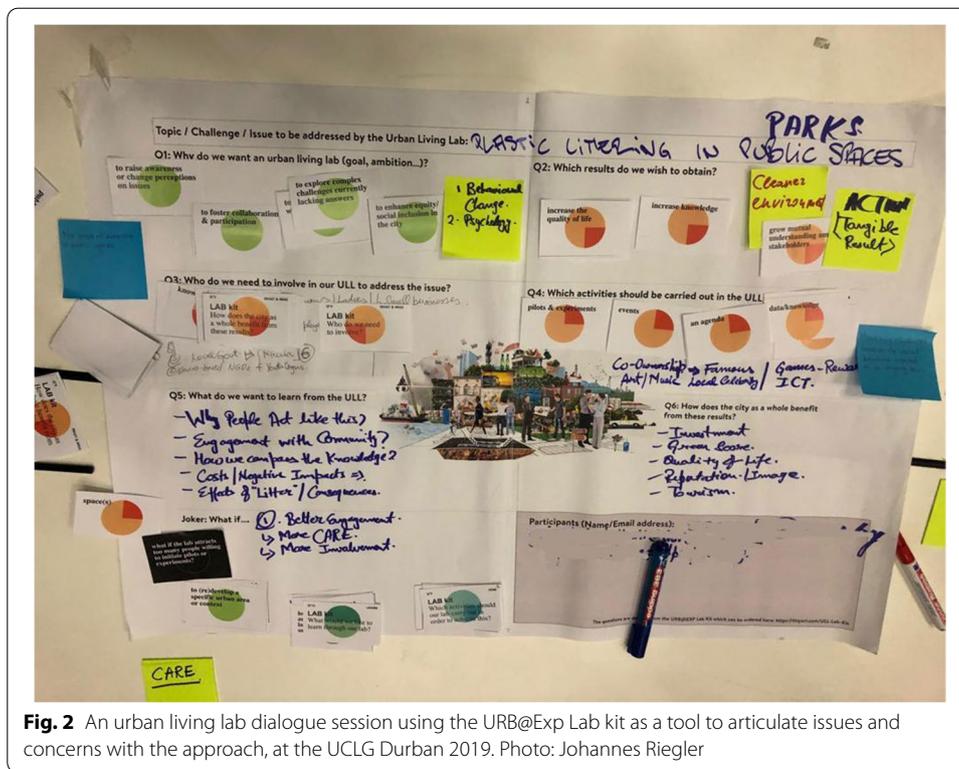


Fig. 2 An urban living lab dialogue session using the URB@Exp Lab kit as a tool to articulate issues and concerns with the approach, at the UCLG Durban 2019. Photo: Johannes Riegler

Table 1 Overview of features of the transition from ULL 1.0 to 2.0

urban living labs 1.0	Transition from ULL 1.0 to 2.0	ULL 2.0
Encouraging participatory/trans-disciplinary research/innovation projects	Transition from emphasis on urban living labs as a label to identifying underlying methods: Specification in call texts	Urban living labs as clearing houses between funding streams
Focus on co-creation, stakeholder participation, co-production	Connecting research processes in learning cycles and feedback loops	Urban living labs integrated into the governance structure of local urban administrations
Scaling up of results and approaches to other urban contexts and larger scales	Identifying the disadvantages and fault lines of urban living labs 1.0 approaches Challenge and dilemma driven approaches instead of 'solutionism'	Continuation of calls and earmarking of follow-up for governance integration Challenging text-oriented working and output result formats using flexible communication requirements to improve synthesis and alternative result presentation formats
	Implementing research design open for learning in any direction	Emphasis on the methods, not the urban living lab

Concern three: issues with 'solutionism' and the obsession with scaling up ULLs

A third concern observed across the meetings is the issue of 'solutionism' which relates to ULLs' tendency to focus on outputs and results in terms of devices and similar 'products.' The way ULLs are currently utilized puts them at risk of methodological lock-ins, where the method implementation becomes more important than the actual challenge. In short, in their current format, the labs tend not to be challenge-driven enough. For

instance, the adoption of digital tools can be suboptimal and is sometimes not sufficiently context-sensitive; the tool and idea for a solution takes over the task to attend to a challenge and adapt methods and tools on-the-go.

In some ways, the issues surrounding 'solutionism' are connected to what at times appears to be an obsession with scaling up ULLs, where a market-like logic leads to a push for solution-driven research and innovation ('we have a tool, now we must find a problem') rather than responding to the most critical and pivotal challenges. Allowing for a funded pilot period in the beginning of research and innovation projects, is one way to address this concern. Calls could support actors to explore different methods and research questions in order to adapt and revise them to include challenge-driven approaches. An example of this would be a multi-actor co-design of the experimental approach with a strong emphasis on how the challenges appear at 'street level'. For similar reasons, earmarking follow-up funding was suggested as a way to support long-term results by either evaluating impact or by continuing the project with follow-up research.

Related to issues of branding and scaling up are communication measures. The format for project communication needs to be adapted depending on the characteristics of each project rather than following a general formula. Project coordinators testify that setting up various social media platforms to share information has not been a particularly successful means for achieving impact. However, face-to-face communication and dialogue during the research process has proven to have a lasting effect.

One way to approach several of these concerns may be to challenge text-oriented work formats. While some phases of the call process demand written text as a means of communication, there is reason to re-think the phases in which text is not the only way to communicate or work. Text is indeed the conventional format of synthesis and work in academia, but in other sectors and for stakeholders not used to the academic text-oriented practices, it can be challenging.

Concern four: over-belief in and over-reliance on ULL projects

Among the more reflexive challenges articulated throughout the dialogues is the need for a better understanding of when an ULL is an adequate method, and how to best apply it to the challenges at hand. In the stakeholder workshops, concerns were raised around the risks of relying too heavily on a belief in the potential effects of ULLs, with the consequence that involved parties get distracted from what can actually be achieved and what is reasonable to expect from an ULL. This in turn connects back to the importance of quality of methods, and not being blinded by the ULL label; good quality methods can contribute to important long-term capacity building for involved parties, even if not visible immediately at the end of the project. To address this concern, future calls may benefit from not targeting the largest urban issues, but instead call for projects to attend to issues on the margins of city authorities' and administrations' attention. This could help avoid shaping projects disconnected from the communities they set out to work with. It could also be a way to transcend gaps where city and urban public administrations themselves do not, for various reasons, take the lead.

The terminologies and vocabularies of ULLs, and even the concept 'urban living lab', may alienate certain groups. In the updated Strategic Research and Innovation Agenda (JPI Urban Europe 2019a), the concept of 'urban living labs 2.0' is defined. It highlights

the notion that ULLs are suitable when the challenge at hand is understood to benefit from, or even require, experimental approaches and where substantial co-creation between stakeholders' and capacity building in response to urban dilemmas is warranted (JPI Urban Europe 2019b).

Concern five: ULLs are not properly integrated in governance structures

Today's ULLs tend to run parallel to institutions in urban governance rather than being integrated within them. According to stakeholders, this affects the ULL project's longer-term impact and limits the challenges that labs deal with, since they are expected to fill the vacuum left by regular government activities.

Regarding the third, fourth and fifth concerns: if ULLs are to move from solutionism to truly challenge-driven approaches and to become integrated in governance structures, facilitators will have to make tactical decisions with regard to the challenges they choose to target. They also need to develop an understanding of whose challenges they are addressing. Our analysis suggests that projects that succeeded in their collaboration with local governments and municipalities made sure they targeted issues the city was indeed struggling with. These issues sometimes end up on the sidelines of the political leadership's focus, but may have pivotal transformation potential. ULLs too heavily focused on local solutions and scaling-up may be effective for the local government, but miss opportunities for other communities or governance contexts that may be affected. These general, baseline responses should be complemented by programming efforts on policy, programme and project levels.

The following outline of what these programming efforts could be are also built upon the stakeholder dialogues results. On a policy level, ULLs can form synergies between funding streams. They can be seen as a kind of 'clearing houses' between funding streams and various local or neighbourhood experimental activities on a city or regional level. Although this might be considered a local issue, EU and national policy have to align and support this potential, meaning that this clearing house perspective would have to be reflected in EU Member States' and the EU's programming activities.

Stakeholders participating in JPI Urban Europe activities have suggested that ULLs that show learning impacts be highlighted at a programme level, and that 'continuation calls' be offered to support for governance integration of these results. Future calls could consider targeting urban areas (regional and local authorities) with previous experiences from urban living labs, to advance already tested methodologies and processes. Instead of micro-labs spreading across geographical contexts, ULLs would then bring forward integrated urban governance models that drives a larger paradigm shift of urban governance (Karvonen 2018).

Conclusion: the next seven years of ULLs in Europe

ULLs are central to achieving the goals of the proposed European Partnership *Driving Urban Transitions to a Sustainable Future* over the next seven years in Horizon Europe, particularly as an approach to safeguard democratic, collective and transparent action. The overall lessons learned about ULLs as 'the new normal' and experimentation through ULLs are twofold. On the one hand, few local,

regional and national public sector administrations have integrated an experimental ethos systemically – not to mention methods to support this. Rather, urban experimental sustainability work often seems more project (and hence person) dependent. On the other hand, local governance and city authorities seem open to approaches such as ULLs. Thus, it will be crucial, not just for ULL 2.0 but also for urban transformations in general, to develop capacities in urban public administrations to serve urban transformations and tackle wicked issues and democracy deficits – as well as unforeseeable ‘counter programmes’ towards transitions and intentional change.

Abbreviations

EC: European Commission; EU: European Union; JPI Urban Europe: Joint Programming Initiative Urban Europe; RRI: Responsible Research and Innovation; UIA: Urban Innovation Actions.

Acknowledgements

The authors wish to thank the reviewers and special issue editors for the excellent comments and advice throughout the paper preparation process.

Authors' contributions

JB, JR, and CW carried out the empirical studies, participated in the workshops and drafted the manuscript. All authors read and approved the final manuscript.

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Funding

Not applicable.

Availability of data and materials

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

Declarations

Competing interests

The authors declare that they have no competing interests.

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Received: 7 September 2020 Accepted: 9 April 2022

Published online: 30 May 2022

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