EU-level Learnings How to Improve European Citizens' Behavioral Shift Towards Sustainable Lifestyles

Insights from the I-CHANGE Project

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Take-Home Messages

Strategic stakeholder management, encompassing analysis, engagement, and the cultivation of long-term relationships, is essential for fostering collective climate action. Engaging a diverse array of actors ensures that climate solutions are co-developed, contextually relevant, and widely supported.

Living Labs serve as locally embedded platforms for collaborative climate innovation. By translating citizen science into actionable change, these spaces empower communities to co-create practical solutions and serve as testbeds for behavioral and technological interventions.

The **co-creation and dissemination of knowledge are vital to promoting scalable, sustainable lifestyles across Europe**. Through inclusive, bottom-up approaches, communities can be empowered with the tools, knowledge, and motivation to enact meaningful change. Promoting sustainable lifestyles requires not only systemic shifts at the institutional level but also individual behavioral transformations. While large-scale solutions are critical, the aggregation of informed individual choices can significantly influence environmental outcomes.

I-CHANGE
CITIZEN ACTIONS ON CLIMATE CHANGE AND ENVIRONMENT

The I-CHANGE project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101037193.

I-CHANGE

Citizen Actions on Climate Change and Environment

I-CHANGE is an Innovation Action project which started in November 2021 and ends in April 2025. It aims to demonstrate how behavioural change of individuals is possible through citizen science initiatives and citizen tailored Information and Communication Technologies (ICT) solutions. I-CHANGE collected environmental and socio-economic data using novel, user-friendly tools such as sensors, monitoring devices, simplified models, and data resources across eight Living Labs. These labs span diverse morphological and geo-climatic conditions, thereby addressing various environmental hazards. The eight I-CHANGE Living Labs are placed in Amsterdam (The Netherlands), Barcelona (Spain), Bologna (Italy), Dublin (Ireland), Genoa (Italy), Hasselt (Belgium), Jerusalem (Israel) and Ouagadougou (Burkina Faso). The promotion of a co-designed learning approach improved citizen knowledge of climate change related to harmful impacts, and helped citizens understand how a behavioural and consumption shift towards sustainable patterns can make a difference.

The usability and interoperability of the collected data has been improved through a dedicated Environmental Impact Hub.

Stakeholder Caring Practices: Building Trust for Lasting Impact

The foundation of effective participatory research lies in meaningful and sustained stakeholder management. The I-CHANGE project applied advanced frameworks such as the Quadruple Helix Innovation Model (Carayannis, 2012), which contributes to reducing power dynamics among stakeholders, and the Circles of Influence (see Figure 1), helping map actors according to their impact and involvement. Stakeholders, from local authorities and Non-Governmental Organizations (NGOs) to grassroots community groups and individual citizen scientists, must be carefully identified, engaged, and supported throughout the process. Utilizing tools like Arnstein's Ladder of Participation (see Figure 2), I-CHANGE emphasized equitable participation, highlighting the role of community champions as crucial intermediaries who foster trust and mobilize local networks.

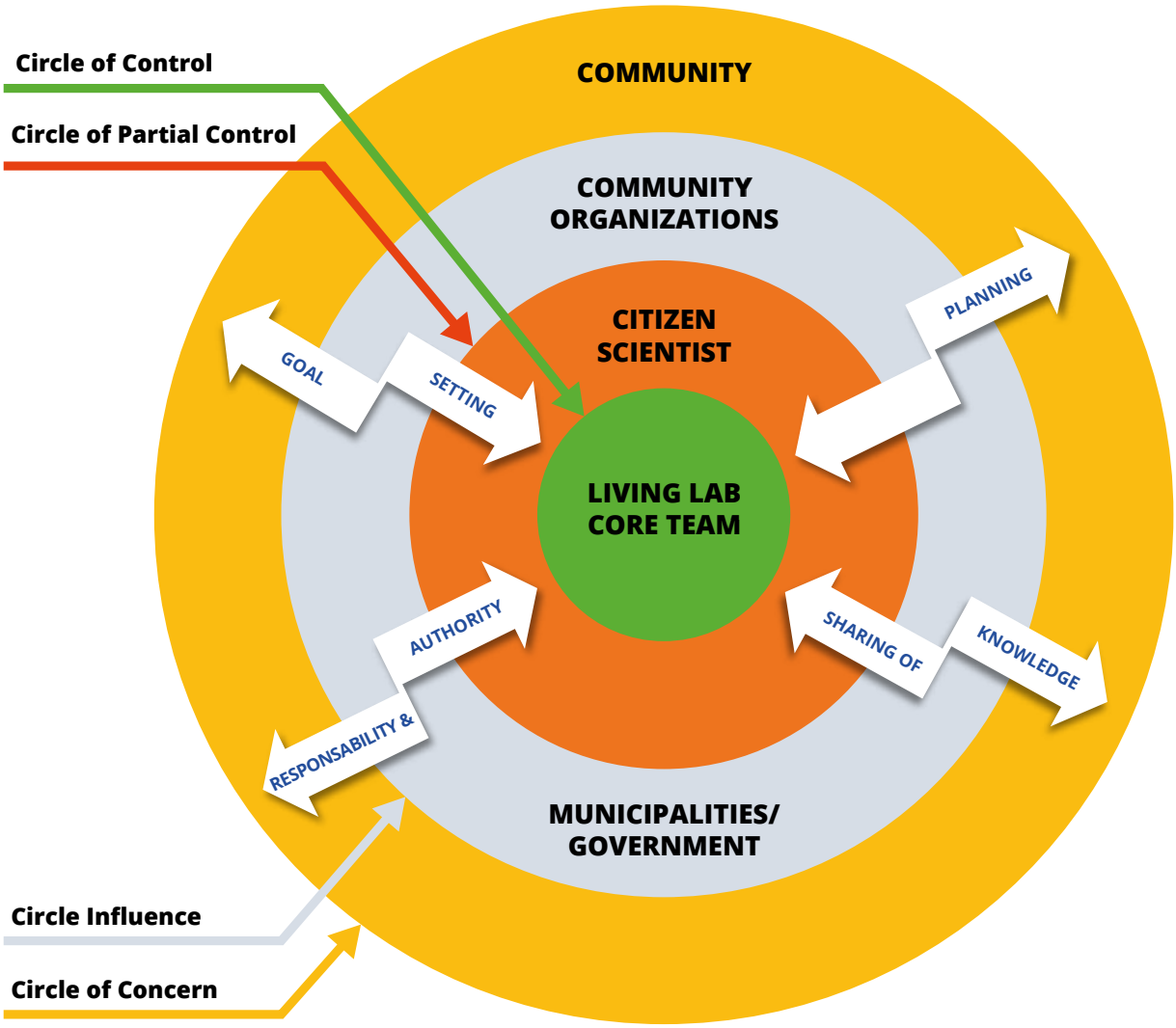

Figure 1: *Circle of Influence, adapted from Jones at el. 2009*

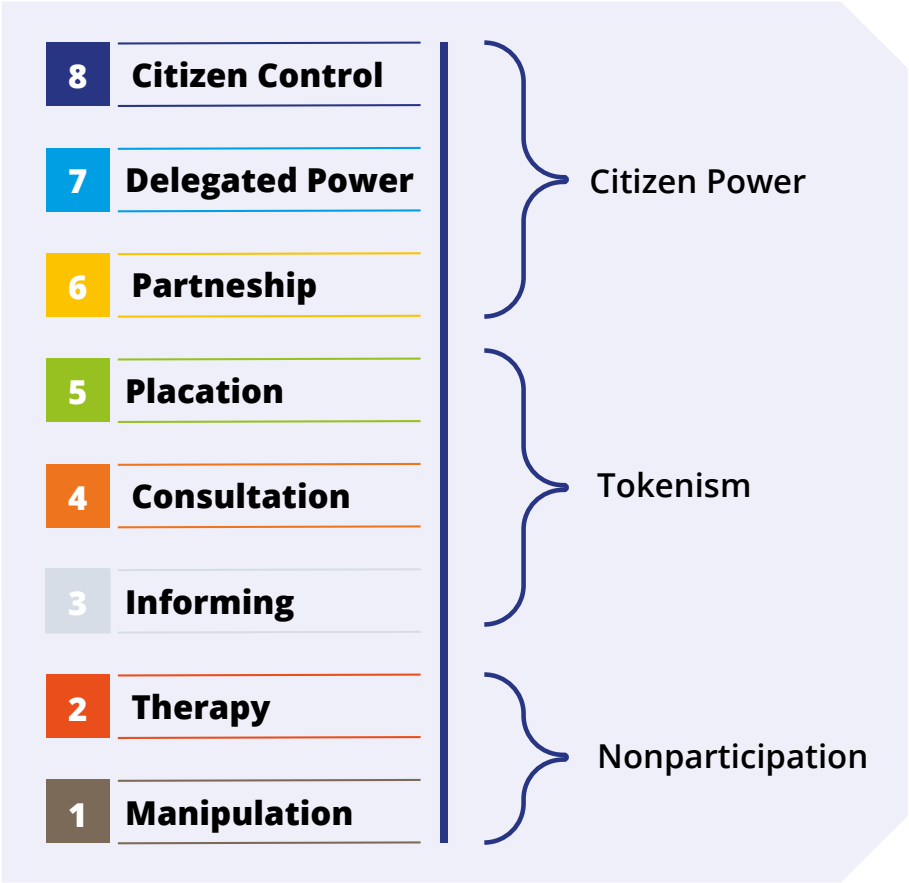

Figure 2: *Arnstein's ladder (Arnstein, 1969)*

Recommendations

- Develop manuals and guidebooks to support ongoing stakeholder engagement.
- Organize tailore d workshops and safe spaces for collaboration.
- Include community champions, or gatekeepers, to connect project initiatives with local communities, helping researchers and practitioners access them while fostering participation and trust.

Case Study: I-CHANGE Stakeholder Forum

The Multi-Stakeholder Forum has been a participatory platform that brought together citizens, local authorities, academia, civil society, and the private sector to co-create solutions for climate action within some of the I-CHANGE Living Labs. Held regularly, the Forum ensured inclusive dialogue by accommodating diverse needs, promoting just transition principles, and enabling stakeholders to reflect on citizen science outcomes, identified barriers, and shaped actionable strategies through co-design and mutual learning.

Living Labs as Situated Climate Action Platforms

Living Labs are dynamic, real-world environments where innovation is driven by collaboration among citizens, researchers, policymakers, and industry actors. They facilitate iterative, co-created solutions to complex urban challenges. The Living Labs model demonstrates the potential for collaborative innovation in addressing sustainability challenges by integrating diverse perspectives, fostering inclusivity, and prioritizing long-term impact. This approach necessitates co-creation, robust stakeholder engagement, and adaptive frameworks to ensure scalability and sustained success. Eventually, the Living Lab framework empowered citizens to act as co-researchers and change agents, particularly in campaigns focused on climate change issues, like extreme events and air quality monitoring.

Recommendations

- Conduct comprehensive **local challenge assessments** and establish partnerships with community organizations, educational institutions, and volunteer groups to ensure relevant and actionable outcomes.
- Facilitate **interactive workshops and prototyping sessions** to foster meaningful collaboration and produce innovative, community-driven solutions.
- Develop and standardize **evaluation frameworks** to measure the impact of Living Lab initiatives, ensuring insights are used to refine and improve processes.

Case Study: I-CHANGE Living Labs - Citizen Science Community Report

The I-CHANGE Living Lab Citizen Science activities aimed to engage diverse communities across eight locations - Amsterdam, Barcelona, Bologna, Dublin, Genoa, Hasselt, Jerusalem, and Ouagadougou. Through a participatory approach, the initiative enabled citizens to monitor environmental variables such as air quality, temperature, and urban heat islands using innovative tools like Smart Citizen Kits and MeteoTrackers. Citizen science activities promoted urban resilience through citizen-driven campaigns addressing extreme weather, air quality, and sustainable consumption patterns. An outstanding initiative to involve communities and citizens was the “I-CHANGE Day”, fostering coordinated environmental actions across all Living Labs. These activities fostered ownership among participants and provided valuable insights for policy-making, demonstrating the power of collective citizen action in tackling environmental challenges.

Co-Created Knowledge Dissemination

Living Labs are dynamic, real-world environments where innovation is driven by collaboration among citizens, researchers, policymakers, and industry actors. They facilitate iterative, co-created solutions to complex urban challenges. The Living Labs model demonstrates the potential for collaborative innovation in addressing sustainability challenges by integrating diverse perspectives, fostering inclusivity, and prioritizing long-term impact. This approach necessitates co-creation, robust stakeholder engagement, and adaptive frameworks to ensure scalability and sustained success. Eventually, the Living Lab

framework empowered citizens to act as co-researchers and change agents, particularly in campaigns focused on climate change issues, like extreme events and air quality monitoring.

Recommendations

- Utilize a **mix of channels**, such as social media, traditional media, events, apps, MOOCs and serious games, to effectively disseminate information.
- Foster **partnerships with key stakeholders**, including community leaders, media outlets, NGOs, and educational institutions, to expand outreach and influence.

Case Study: I-CHANGE Climate Action Training Schools and Massive Open Online Course (MOOC)

The I-CHANGE Climate Action Training Schools and the Massive Open Online Course (MOOC) From Awareness to Action: Citizen-Led Climate Initiatives" were instrumental in disseminating climate awareness as part of the project. The Climate Action Training Schools, hosted across the eight Living Labs, engaged over 1,000 participants including children, adults, and seniors from various backgrounds. Through interactive workshops, lectures, and hands-on activities, the Climate Action Training Schools addressed critical climate topics like sustainable mobility, air quality, and biodiversity. The sessions empowered local communities, integrating co-created tools for environmental monitoring and sustainable behavior adoption. These efforts culminated in the MOOC "From Awareness to Action: Citizen-Led Climate Initiatives" which synthesized the Climate Action Training School learnings into an accessible, global online course. The MOOC combines text, videos, and quizzes to provide concise and engaging lessons, promoting awareness and enabling behavioral shifts for climate action. As a cornerstone of the project's dissemination strategy, both the Climate Action Training Schools and the MOOC highlighted the transformative potential of education in addressing climate change and fostering global sustainability.

Conclusion

The I-CHANGE project demonstrated that a multi-faceted, participatory approach was essential for fostering sustainable lifestyle changes. Key to this are structured stakeholder engagement, the deployment of Living Labs as localized climate action platforms, and adaptive, inclusive dissemination strategies. To ensure long-term impact, projects should address both technical and social risks, invest in capacity-building resources such as manuals and training programs, and embed outcomes within educational and institutional frameworks. By valuing both expert and non-expert knowledge and integrating participatory learning formats, I-CHANGE cultivated a vibrant ecosystem where collective awareness translated into scalable, community-led climate action. Through these efforts, initiatives like I-CHANGE contribute to a more resilient, climate-conscious Europe.

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The content of this brief is based on the following key project deliverables: D1.2 “Citizen Science in Living Lab for Just Transitions - guidelines to promote the engagement and awareness raising of citizens”; D1.8 “Methodological guide for citizen engagement in Living Labs in I-CHANGE with the description of the learning platform”; D2.2 “Local implementation plans for each partner city”; D2.1 “Assessment of risks and potentials concerning the engagement of stakeholders and citizens”; D3.6 “Citizen Science community report”; D5.1 “Communication and Dissemination Strategy”; D5.3 “Living Labs communication strategy”; D5.5 “The I-CHANGE Climate Action Training School and MOOC”; D6.5 “I-CHANGE Manifesto and guidelines for the Forum”. **All deliverables are available on the I-CHANGE website https://ichange-project.eu/**

Acknowledgment and Disclaimer

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