

A toolbox to support transdisciplinary knowledge construction

Deliverable 4.7

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RE-DWELL

Deliverable 4.7 A toolbox to support transdisciplinary knowledge construction

Version 1.2

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Table of content

Executive summary	5
1. Purpose and structure of the report	6
2. Building the TEASH participatory toolbox	7
2.1. Introduction	7
2.2. The process of building the TEASH toolbox	8
2.3. Insights leading to the TEASH toolbox	10
2.4. The elements of the TEASH toolbox	12
2.5. Bringing it all together in a participatory toolbox	14
3. Developing the TEASH toolbox	15
3.1. Introduction	15
3.2. Reading summer school	17
3.3. Delft plenary meeting	27
3.4. Barcelona conference	34
3.5 Conclusions	42
4. Implementation and evaluation in local settings	44
4.1. Lisbon focus group session	44
4.2. London focus group session	53
4.3. Nicosia focus group session	61
4.4. Takeaway from the local implementations	69
5. Final reflections	71
6. Bibliography	72
Annex 1 – Card configurations Reading session	1
Annex 2 – Evaluation Reading session	12
Annex 3 – Case studies Delft session	14
Annex 4 – Evaluation Delft session	16
Annex 5 – Evaluation Barcelona session	21

Executive summary

Following the work presented in Deliverable 4.6, this report focuses on the development and application of a toolbox designed to foster collaborative knowledge construction among stakeholders addressing affordable and sustainable housing procurement in a local context.

A conceptual structure based on a tripartite knowledge taxonomy—systems, target, and transformation knowledge—was introduced to guide the development of the toolbox (as outlined in Deliverable 4.6). This toolbox aims to facilitate collaboration among various stakeholders in defining problems and developing strategies for specific housing initiatives.

The TEASH toolbox was developed to operationalize the principles of transdisciplinarity in addressing the challenge of affordable and sustainable housing. Its objectives were to:

1. Understand the complexity of the housing challenge.
2. Integrate diverse perspectives from both academic and non-academic stakeholders on housing problems, goals, and strategies.
3. Bridge abstract and specific knowledge across academic experts and practice experts.
4. Foster shared understanding and practices that contribute to solving the societal issue of inadequate housing.

The toolbox was developed through collaborative efforts within the RE-DWELL network, involving ESRs, supervisors, and partner organizations. It was tested in several network activities, including sessions at the International Social Housing Festival in Helsinki (June 2022), the summer school at the University of Reading (July 2023), a network meeting at TU Delft (October 2023), and the final conference in Barcelona (May 2024).

Subsequently, the tools developed within the network were adapted and applied in focus groups held in Lisbon, London, and Nicosia, with participation from both network members and external stakeholders. These sessions consolidated the knowledge produced by the network on affordable and sustainable housing and invited participants to collaboratively contribute to its development.

The active involvement of ESRs and partner organizations in the implementation of the toolbox significantly enhanced its effectiveness. Their real-world participation contributed practical, actionable solutions and enriched academic discourse. The inclusion of non-academic organizations in the assessment phase provided valuable insights into the toolbox's application, particularly highlighting the importance of local contexts and the specific challenges and stakeholders involved.

1. Purpose and structure of the report

This report focuses on the development and application of a toolbox designed to promote collaborative knowledge construction among stakeholders involved in affordable and sustainable housing procurement within local contexts.

Chapter 2 outlines the development of the toolbox, drawing on literature related to transdisciplinary participatory activities, toolkits, and the components of a transdisciplinary environment as described in Deliverable 4.6.

Chapter 3 details the development and testing of the first versions of the RE-DWELL TEASH toolbox, including experiences and evaluations from meetings in Reading and Delft.

Chapter 4 presents an adaptation of the toolbox applied to three local contexts in Lisbon, London, and Nicosia. These context-specific applications were used to assess whether the TEASH toolbox can facilitate stakeholder interactions and the cross-pollination of knowledge.

Finally, Chapter 5 provides a reflection on the process of developing and implementing the TEASH participatory toolbox.

2. Building the TEASH participatory toolbox

2.1. Introduction

The RE-DWELL Transdisciplinary Environment for Affordable and Sustainable Housing (TEASH) provides a conceptual structure to address affordable and sustainable housing challenges, with the participation of the stakeholders involved, academic experts and practice experts.

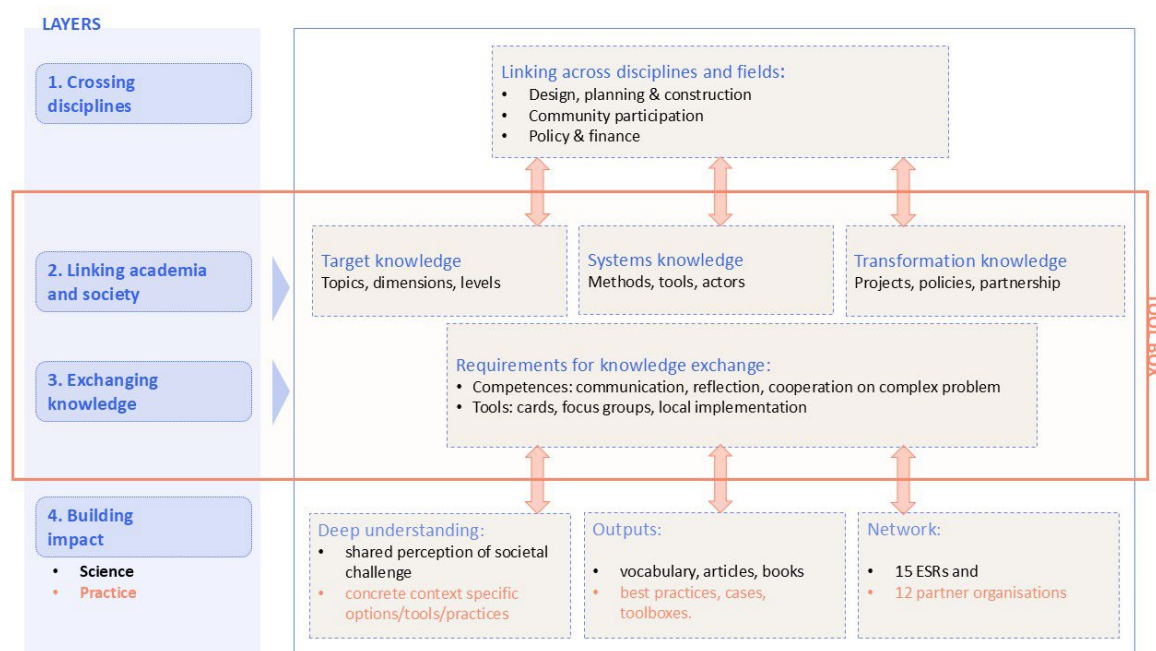


Figure. 2.1. Transdisciplinary Environment for Affordable and Sustainable Housing (TEASH)

The TEASH brings together the components of the transdisciplinary learning and research environment collaboratively developed throughout the three-year project activities. It is organised in four layers (Figure 2.1):

- Crossing disciplines**, necessary to understand the challenges and trade-offs at stake, to identify strategies across disciplines and fields (see Deliverables 4.1, 4.2 and 4.3).
- Linking academia and society**, to collaboratively construct knowledge around specific housing problems, based on a tripartite structure: target, systems, and transformation knowledge.
- Exchanging knowledge**, by means of tools and methods aimed at fostering the collaboration of the diverse stakeholders involved, academic experts and practice experts.
- Building impact**, creating outputs -white papers, guidelines, policy recommendations, academic publications- that facilitate a better understanding of the specific challenges that the various stakeholder involved are facing.

The purpose of the TEASH toolbox is to facilitate communication between researchers, practitioners, and policy makers, an understanding of the societal challenge, and the discovery of new angles and new solutions in the combination of strategies. Through its application in local contexts, the aim is to facilitate a common understanding of the challenges, responsibilities, practices, and possibilities for improvement of a system (e.g., a project, an organisation) in the context of affordable and sustainable housing.

2.2. The process of building the TEASH toolbox

The development of a toolbox to support knowledge construction and exchange across stakeholders involved in housing provision was collaboratively carried out throughout the project with the following objectives:

1. Fostering communication and co-creation of a shared understanding that integrates and interrelates the findings of fifteen ESRs' research projects, primarily consisting of academic knowledge.
2. Facilitating collaboration among researchers, policy-makers, designers, planners, and financial experts to ensure a transdisciplinary approach to affordable and sustainable housing.
3. Applying research outcomes in real-world scenarios through interactive sessions and practical engagements.
4. Promoting the exchange of ideas and best practices between academic and non-academic stakeholders, ensuring the Transdisciplinary Environment's relevance and adaptability.
5. Supporting the continuous development and refinement of strategies to address complex housing challenges, leveraging insights from both theoretical and practical perspectives.

The TEASH toolbox was structured and designed to be flexible and adaptable, enabling its application in diverse scenarios to impact housing problem-solving projects, policies, and partnerships. From its inception in Helsinki ISHF, in July 2022, and through subsequent interactive sessions in Reading, Delft, and Barcelona, with the participation of ESRs, supervisors and partner organisations, different methods and techniques were devised and tested through a learning-by-doing approach in synergy with other project activities Figure 2.2.

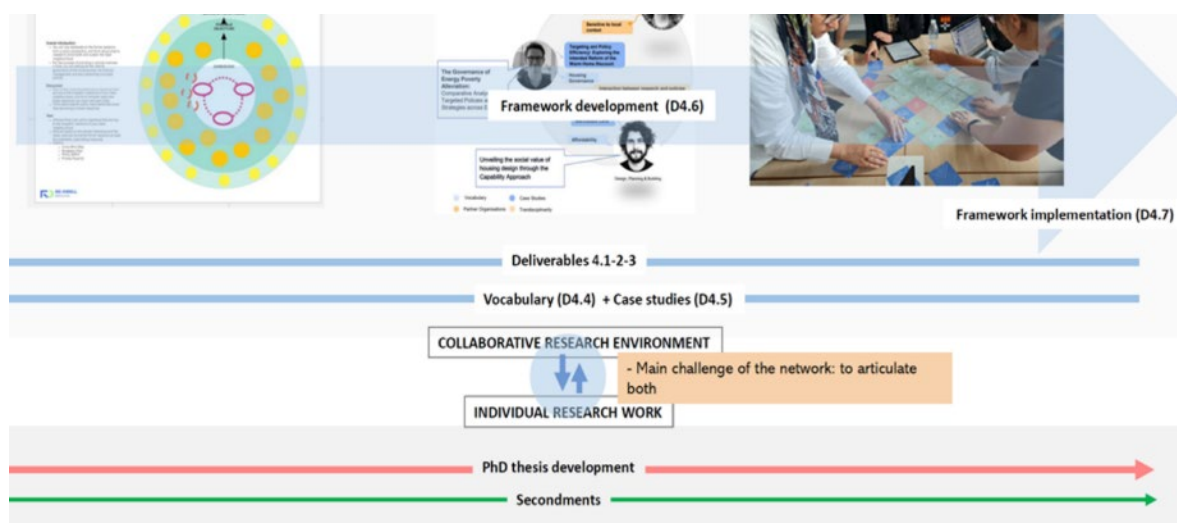


Figure 2.2. Structure of WP4 tasks

The development and testing of the TEASH toolbox involved four team development sessions (Helsinki, Reading, Delft, and Barcelona) and three local implementations (Lisbon, London, and Nicosia).

- **2022, Helsinki:** At the International Social Housing Festival, the RE-DWELL team introduced the idea of a toolkit to facilitate collaboration between RE-DWELL members and external stakeholders. This initial concept laid the foundation for the TEASH toolbox.
- **July 2023, Reading:** A game tool was launched during the summer school to make RE-DWELL's research outputs more accessible and engaging. This tool aimed to promote collaboration, exploration, and understanding between researchers and industry partners, helping generate practical solutions.
- **October 2023, Delft:** The game tool was further developed and tested on energy poverty and retrofitting projects with the support of partner organisations EFL and SYHA. A card set and board tailored to each real-world scenario were used to explore solutions in these contexts.
- **May 2024, Barcelona:** A refined version of the game tool was showcased at the conference, featuring updated boards and card sets structured around dynamic, scenario-based decision-making to enhance collaboration.

In 2024, the tools were applied in workshops in Lisbon, London, and Nicosia, where local stakeholders worked on defining housing problems and developing tailored strategies. These workshops demonstrated the adaptability of the TEASH toolkit to address specific local challenges effectively.

2.3. Insights leading to the TEASH toolbox

In recent years, several toolkits have been developed to promote inter and transdisciplinary collaboration among the various stakeholders involved in housing provision. Some of these precedents have informed the development of the TEASH toolbox.

In particular, we took interest in the “Toolkits for Transdisciplinarity” published in the scientific journal *GAIA – Ecological Perspectives in Science and Society*, between 2015 and 2017 (Bammer, 2015a, 2015b, 2016a, 2016b, 2016c, 2016d, 2017a, 2017b) as well as from the *Transdisciplinary Knowledge Co-production. A guide for sustainable cities* (Hemström et al., 2021).

These toolkits are designed to support collaborative and cross-disciplinary approaches to complex problems. They do so by focusing on several key aspects, including the use of co-creation and participation methods (Brandt et al., 2012; Sanders & Stappers, 2012), which encourage active collaboration among participants. They involve diverse actors and roles to bring varied expertise and perspectives into the problem-solving process. Structured sessions are prepared to provide stakeholders with opportunities to discuss issues, share knowledge, and collaboratively develop solutions. Clear guidelines are adopted to support these processes, while accessible language ensures communication is inclusive and understandable for all participants.

Another important feature of the GAIA toolkits is their emphasis on knowledge management, such as compiling case studies and best practices. This documentation of successful projects or strategies serves as a valuable resource for future initiatives, offering practical insights and inspiration.

- [Urbanology](#) (BMW Guggenheim Lab) is a group role-playing game that explores the complexities of urban development by having players make decisions on urban issues like housing, healthcare, or mobility, matching their values and needs. At the end of the gameplay, the system uses eight categories—innovation, transportation, health, affordability, wealth, lifestyle, sustainability, and liveability—to reproduce the city that was created. The game can be played on-site or online and is often used in workshops to facilitate discussions about urban policies. The game was developed by the BMW Guggenheim Lab, a think tank that resulted from the collaboration between the Solomon R. Guggenheim Foundation and the BMW Group, operating from 2011 to 2014.
- [Affordable Housing Game: Amsterdam](#) (Play the City Foundation) is a policy making serious game for collaborative decision-making commissioned by the city of Amsterdam and developed by Play the City in 2018. It involves the professionals dealing with the actual housing problems being discussed—policy makers, housing associations, private developers, and investors. The materials comprise of a game board, which corresponds to a land use map of the city of Amsterdam; Area Passport Cards, which provide information about existing housing; Strategy Cards, based on case studies and best practices from around the world; and three-dimensional game pieces representing different housing typologies. The gameplay happens in several rounds, beginning with individual proposals for solutions that get voted to remain in the game. Five selected proposals are allocated to five groups that continue discussing them separately, resulting in

distinct project proposals. Play the City is a global practice that develops serious games for complex city challenges using the ‘City gaming’ method—a method originating from the founder’s PhD research project.

- [Participatory Chinatown](#) (Engagement Game Lab, Emerson College) is a 3D immersive multiplayer game designed to be played in a physical space (with multiple computers playing simultaneously), where participants assume the role of residents of Boston’s Chinatown. The players have one of three missions: to find a job, to find a place to live, or to find a place to socialize. The missions have added challenges such as language barriers, income level, or other circumstances. Participatory Chinatown is designed to engage citizens in urban planning processes, and their comments and decisions are shared with actual decision-makers. The game was developed by the Engagement Lab, an applied research lab, as part of the 2010 Chinatown master plan to supplement traditional community engagement mechanisms of town-hall meetings.
- [BIP/ZIP Manual for Local Development](#) in Lisbon (Locals Approach) operates on a different scale, translating technical documents into a platform and subsequently into a manual. Locals Approach created a series of cards that explain all the different activities developed over time by the BIP/ZIP programme. These cards can be read as a manual for local development, but they can also be used in a game format for a better understanding of projects and enhanced co-creation of new ones. This Manual for Local Development was conceived for workshops accessible to every citizen. Through different rounds, players chose and discard cards to collaboratively design a project capable of reaching an assigned goal placed at the centre of the board. At the end of the game, the co-designed project was pitched.

These initiatives, whether commission-based and targeted at specific audiences or open to the general public, demonstrate effective ways to engage stakeholders and foster learning by addressing the challenges of urban planning and community development. Using participatory methods rooted in serious games (Van der Hoorn, 2022; Sousa et al., 2022), they highlight the importance of inclusiveness in decision-making. These methods ensure that diverse stakeholder needs are considered and encourage participants to collaboratively redefine the challenges they face.

Additionally, these initiatives shed light on the complexity and interconnectedness of urban systems, where a single decision can significantly affect other areas. Players are encouraged to think critically about the consequences of their choices, balancing diverse interests and needs. They are also prompted to develop creative solutions to complex problems while considering both immediate outcomes and long-term sustainability.

2.4. The elements of the TEASH toolbox

Below, we outline the key elements that informed the design of the TEASH toolbox, incorporating insights from the GAIA toolkits and research on transdisciplinary collaboration.

2.4.1. Actors and roles

Among key aspects considered crucial across transdisciplinary research and practice is the involvement of diverse **actors** in transdisciplinary collaboration (Pohl & Hirsch Hádorn, 2007; Mauser et al., 2013). That is, integrating disciplinary experts, those directly affected by a given issue, as well as strategic players that can add value across the various facets of a project—such as policymakers and practitioners, who are able to translate research into actionable policies and practical applications. Having the direct participation of diverse actors enables a holistic approach that considers the multidimensional nature of complex issues. Such an approach captures unique insights and expertise, but it also allows for the integration of distinct perspectives. This renders the discussion space more inclusive, relevant, and innovative. By integrating these different viewpoints, this approach also ensures more sustainable (and potentially more impactful) solutions overall. Examples of the types of actors that can be involved to address a complex issue such as the one of affordable and sustainable housing are researchers, practitioners, policymakers, citizens, residents and other community stakeholders, industry representatives, and NGOs and nonprofit organisations.

In addition to integrating different types of actors, the TEASH toolbox—similarly to previously developed resources aiming at facilitating transdisciplinary research and practice like the GAIA toolkits—considered specific **roles** that participants might take to improve transdisciplinary collaboration. From these roles we highlight four which we have taken into consideration: the *facilitator*, who guides the process and ensures communication is clear and all participants are able to contribute; the *experts*, who bring specialised knowledge and provide differentiated value to the project; *stakeholder representatives*, representing the needs and interests of various interested parties and ensuring that the project considers aspects that would otherwise (possibly) be overlooked; and the *evaluator(s)*, the person(s) responsible for assessing progress and impact of the process and outcomes.

2.4.2. Guidelines

Another important consideration from previously experiences on participatory processes is having a set of **guidelines** for collaboration (Lang et al., 2012). Guidelines can be flexible governing principles or more fixed rules and serve to ensure an effective use of the method or framework under consideration. This approach to transdisciplinary collaboration helps sail the inherent complexity and diversity of wicked problems, ensuring a structured, equitable, and productive approach to it. Specifically, established guidelines can clarify roles and responsibilities, provide a structure for navigating progress, facilitate decision-making and conflict resolution, ensure that ethical considerations are taken (for example, using informed consents and accounting for data privacy), and define metrics and procedures for assessment.

Resources supporting transdisciplinary research and practice, like the GAIA toolkits, often draw from narrative methodologies to support transdisciplinary cooperation (Polk, 2015).

Narrative has a crucial role in (re)framing and contextualising problems in an engaging and recognizable way, which helps build trust and motivate action among participants (for example, by illustrating possible futures or highlighting successful interventions). This approach helps make abstract concepts more accessible, putting situations in perspective and in new scales and making findings more relevant to different audiences. Furthermore, this approach helps weave in the perspectives of others, adding them in to a coherent story in which everyone plays a part. In effect, it also helps integrate insights from various fields and stakeholder groups, allowing for a more holistic understanding of the issue.

Guidelines supporting a participatory activity part of the TEASH toolbox are meant to be adapted to the context in which it takes place—for example, discussing how an organisation works and can be improved is different from exploring the challenges of a neighbourhood or a housing complex; likewise, conducting a session with decision-making stakeholders is different from having residents as participants. In that sense, we devised some general instructions to guide the activity.

We begin with a shared definition of the problem. This is a pivotal step in which participants take time to exchange perceptions and needs. In this moment, the processes of generalisation (identifying common patterns or properties to find an idea that can be applied across various situations) and abstraction (creating a simplified model by reducing complexity and focusing on the essential characteristics of something) are key. Subsequently, (at least) three main stages of interaction take place: a preparation stage, in which participants define the challenges and consider possible key actors, tools, and methods; a co-creation stage, in which participants choose key actors, tools, and methods and explore possible responses to the challenge; and a stage to define conditions for long-term impact, based on the outlined solutions.

The guidelines are a starting point for other, more tailored case-based procedures to facilitate the participatory activity, depending on the participants, the context, and the challenges.

2.4.3. Participatory methods

Tying together the elements discussed above is the setting in which these are staged: the **participatory methods** often employed by transdisciplinary research and practice to effectively collaborate and integrate knowledge across disciplines (Doucet & Janssens, 2011; Jacobi et al. 2022). Previous literature states that this is a fundamental aspect to effective transdisciplinary collaboration (Scholz & Steiner, 2015). Examples of these are Living Labs, which are user-centred, often urban environments for citizens to co-create and test innovations with other spheres like governance and industry; Participatory Action Research (Kindon et al., 2007), a collaborative research approach that involves participants directly in addressing community issues and driving social change; or World Cafés, which are structured conversational sessions in small groups that switch periodically and cross-pollinate ideas, leading to a common comprehension of the issues being discussed.

The application of transdisciplinary research in addressing complex societal challenges requires the integration of diverse stakeholder perspectives to co-create solutions that are sustainable and impactful. Participatory processes, therefore, have a pivotal role in bridging the gap between scientific knowledge and societal needs.

2.5. Bringing it all together in a participatory toolbox

The TEASH toolbox is a collection of tools that support the goal of creating a common understanding of issues around affordable and sustainable housing. Our definition of “tools” is informed by the field of design where these are considered instruments that streamline actions, facilitate the use of methods, and make processes less abstract (Dalsgaard, 2017). The tools that compose the TEASH toolbox can vary. Throughout the process of building the TEASH toolbox we considered a participatory activity supported by a card set—which is an instrument that summarises complex information in a tangible format that is possible to handle, display, and prioritise—and a board—a surface with structured markings that predefine steps to follow sequentially with certain objectives. Other tools in the TEASH toolbox are non-tangible resources, such as the RE-DWELL libraries “vocabulary” and “case studies”—offering structured compilations of specific information.

The reason why we call it a toolbox lies in the idea that elements we found useful for our aim can be added or adapted according to particular challenges or contexts. As such, we do not consider the TEASH toolbox to be a game tool design, because games have particular components (like points, teams, levels), particular mechanics (like feedback, competition, winning), and unique dynamics (like constraints, progression) that we have not incorporated (Sanoff, 1979). Furthermore, serious games often serve different purposes than what we aim for, like data collection, simulation of complex systems, or testing interventions (Thiel et al., 2019). The TEASH toolbox is a collection of information and means to facilitate a dialogue and does not exist as a fixed or closed product.

Learning and knowledge exchange are fundamental objectives of the TEASH toolbox. With this in mind, it has become essential to align the tools with the principles of transdisciplinarity as outlined by Buser (2016): to grasp the complexity of the problem, consider diverse perspectives (encompassing both academic and non-academic views on problems, aims, and solutions), connect abstract and specific knowledge, and develop understanding and practices that contribute to the perceived common good.

As described Pohl and Hirsch Hadorn (2007), transdisciplinarity is about joint learning and exchange of different types of knowledge: target, systems and transformation knowledge. This knowledge integration is inherent to the design of the TEASH toolbox. As seen in Figure 2.1, the toolbox combines elements of Layer 2 “Linking academia and society” and 3 “Exchanging knowledge”. The elements included in these layers as in turn by the knowledge derived from the interlinking of research areas through the ESRs research projects (Layer 1 “Crossing disciplines”) and the results of the application of the tools contribute to societal impact (Layer 4 “Building impact”).

The next two chapters describe the development process of the TEASH toolbox within the network activities, prior to their application in local contexts.

3. Developing the TEASH toolbox

3.1. Introduction

Throughout a series of collaborative activities taking place throughout the project, carried from the Helsinki ISHF workshop in June 2022 until the final conference in Barcelona, in May 2024 (Figure 3.1), the TEASH toolbox was stepwise developed and tested. This development was carried out with the collaboration of the RE-DWELL network members: early-stage researchers, supervisors, and non-academic partner organisations.

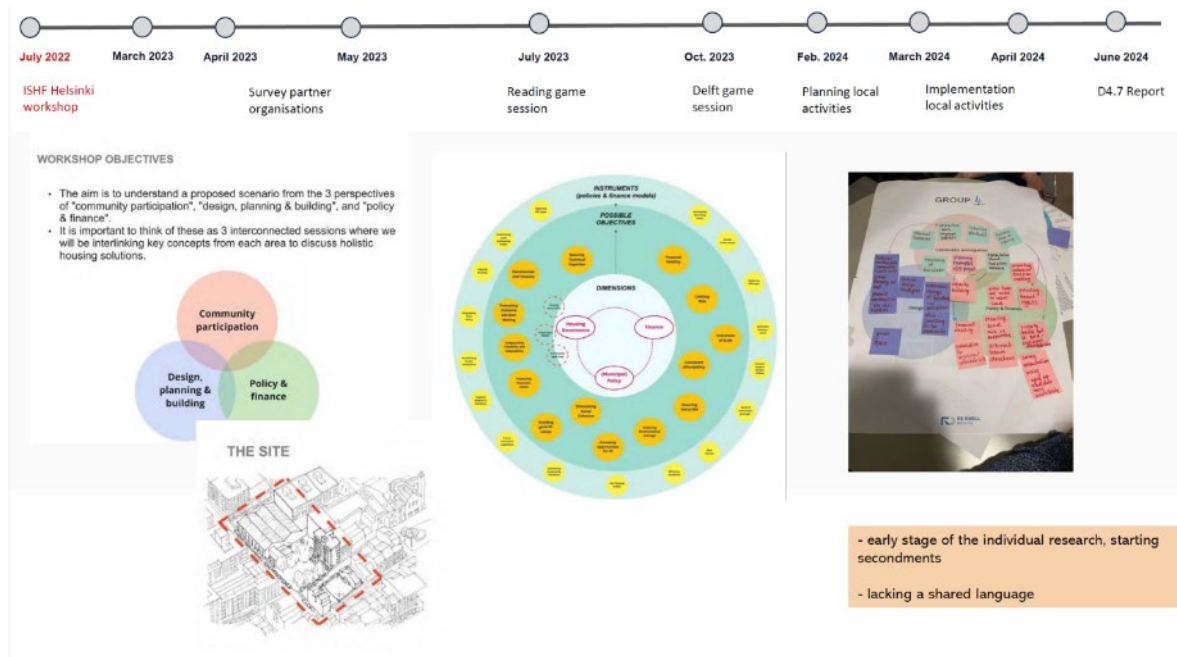


Figure 3.1. RE-DWELL ISHF 2022 workshop

3.1.1. The origins: building the TEASH as an interactive process

The [International Social Housing Festival 2022 \(ISHF\)](#), in Helsinki, Finland, offered the first opportunity for the RE-DWELL team to devise an interactive toolkit for stakeholders with diverse background discuss housing challenges and strategies.

The three-hour workshop aimed to apply a holistic approach to affordable and sustainable housing through a use case: developing a piece of land in a working-class neighbourhood with a sustainable master plan, including affordable housing. Participants were divided into teams and developed a step-by-step strategy considering the interconnections between three RE-DWELL research areas: Design, Planning and Building; Community Participation; and Policy and Financing (Figure 3.2). A hypothetical scenario –“A municipality has a piece of land in a working-class neighbourhood that is to be developed through a sustainable master plan, including affordable housing”– for a housing renovation project at a neighbourhood scale was prepared for the development of proposals that consider the differing interests and opinions of stakeholders, short- and long-term challenges, and the social impact at the neighbourhood level and beyond. A board was created for each scenario, highlighting key components needed to address the housing challenge from a transdisciplinary perspective (Figure 3.3).

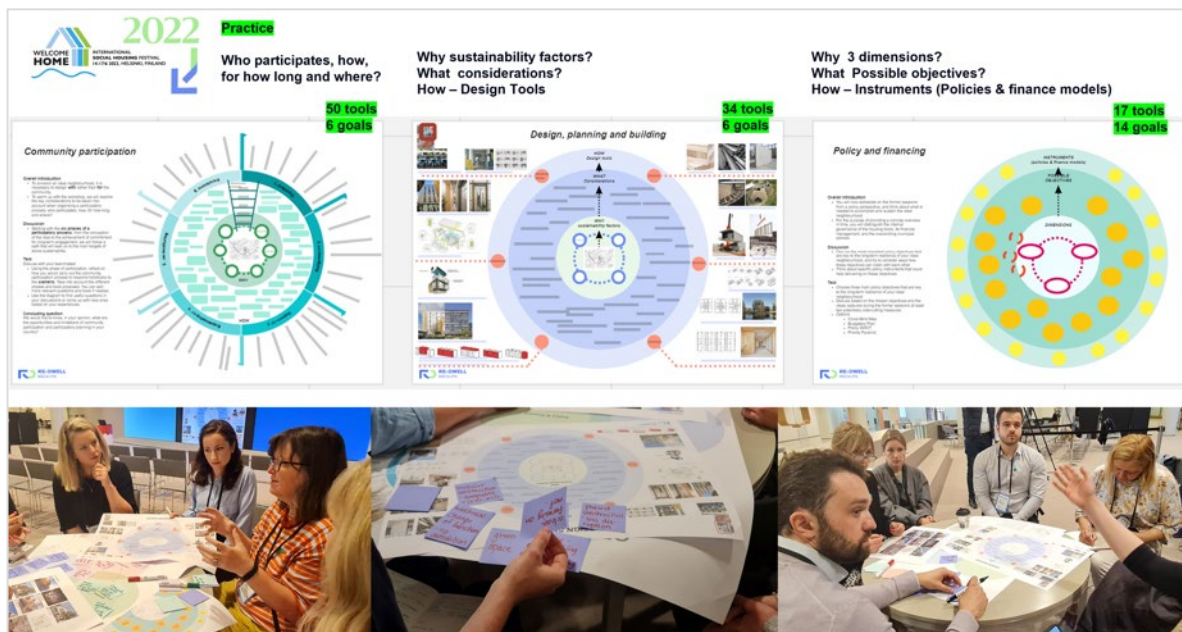


Figure 3.2. RE-DWELL ISHF 2022 workshop

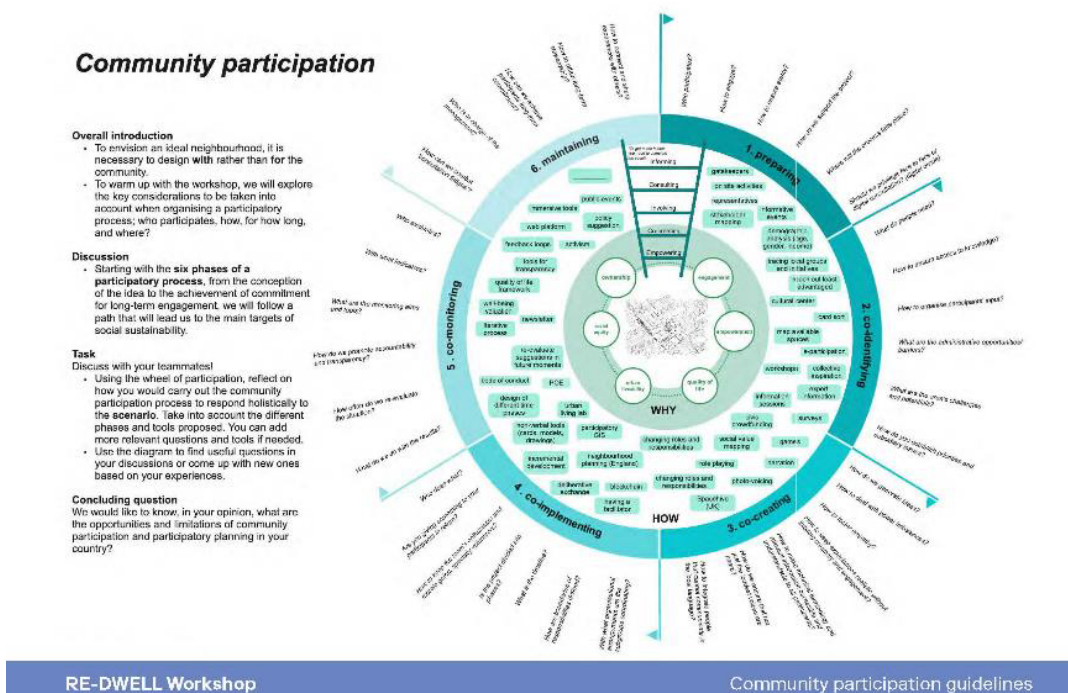


Figure 3.3. Board for the discussion focusing on “Community Participation”

Participants, organized into teams, discussed housing issues and proposals, with RE-DWELL members acting as facilitators (Figure 3.4).



Figure 3.4. Discussion group at ISHF Helsinki workshop

Each group used a specialized board tailored to one of the three focus areas, incorporating key elements to facilitate a holistic discussion of housing challenges across multiple dimensions and scales, in line with RE-DWELL's transdisciplinary approach. During the discussions, post-its were used to identify interrelated issues within each of the three key research areas (Figure 3.5).



Figure 3.5. Outputs of the group discussions

3.2. Reading summer school

The next significant step in the development of the TEASH toolbox took place at the University of Reading, in July 2022 (see [Deliverable 3.6](#)). A game was prepared for the participants in the meeting - ESRs, supervisors and partner organisations - to test its

feasibility as tool to facilitate knowledge exchange in a transdisciplinary context. The game was developed by supervisor Alexandra Paio, as leader of the task leader, with the collaboration of ESR Androniki Pappa, following an analysis of several tools and games with similar goals.

3.2.1. Game tool design

The first TEASH toolbox contained an activity meticulously designed with integrated guidelines that defined goals and procedures. These guidelines were complemented by narratives that provide a specific context for the activity, making the scenarios more engaging and relevant. The activity was developed with carefully crafted mechanisms to facilitate complex decision-making, ensuring that participants were able to explore various outcomes and strategies. Furthermore, the activity defined facilitators, helping participants through it and ensuring that they could fully understand the decisions, roles, and interactions therein. This guidance was essential during the introduction and debriefing stages, helping participants effectively comprehend the broader implications of their actions during the sessions.

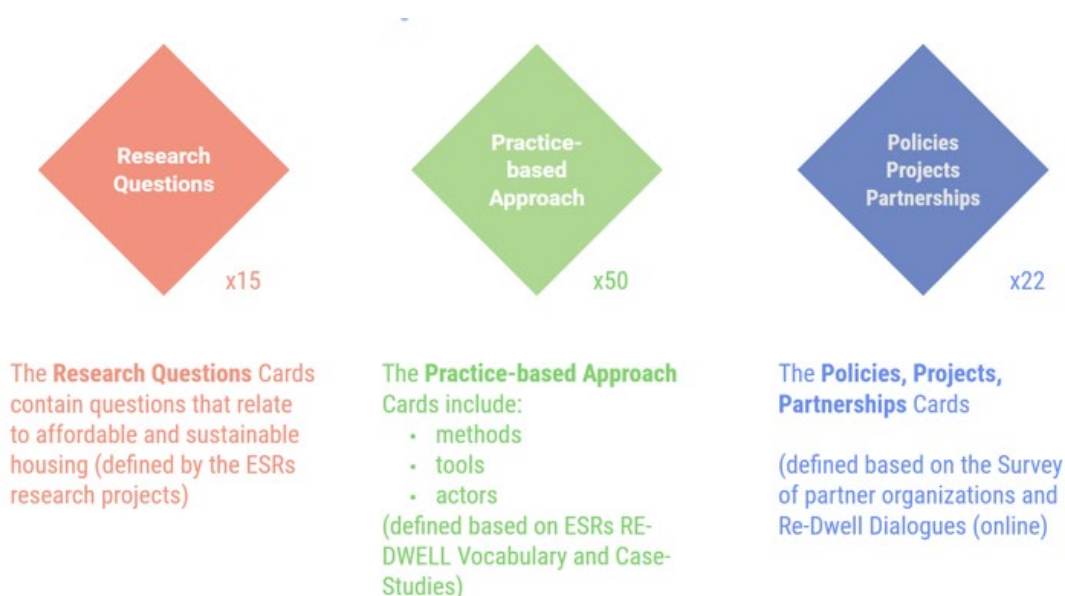


Figure 3.6. Overview of the cards used in the Reading summer school activity

The game consisted of a sets of cards (Figure 3.6 and 3.7), each one corresponding to the three types of knowledge that can be produced in a transdisciplinary context (see Deliverable 4.6):

- **Systems knowledge:** 15 cards (orange) containing “Research Questions” that relate to affordable and sustainable housing, defined by the ESRs’ research projects.
- **Target knowledge:** 50 cards (green), that include possible methods, tools, and actors, based on the ESRs’ “vocabulary” and “case-studies” libraries, available on the RE-DWELL website.

- **Transformation knowledge:** 22 cards (blue) with policies, projects and partnerships based on the survey of partner organisations and their dialogue with ESRs in the supervisory board meeting on May 2023.

The indicators on the back of the cards derived from the RE-DWELL research areas.

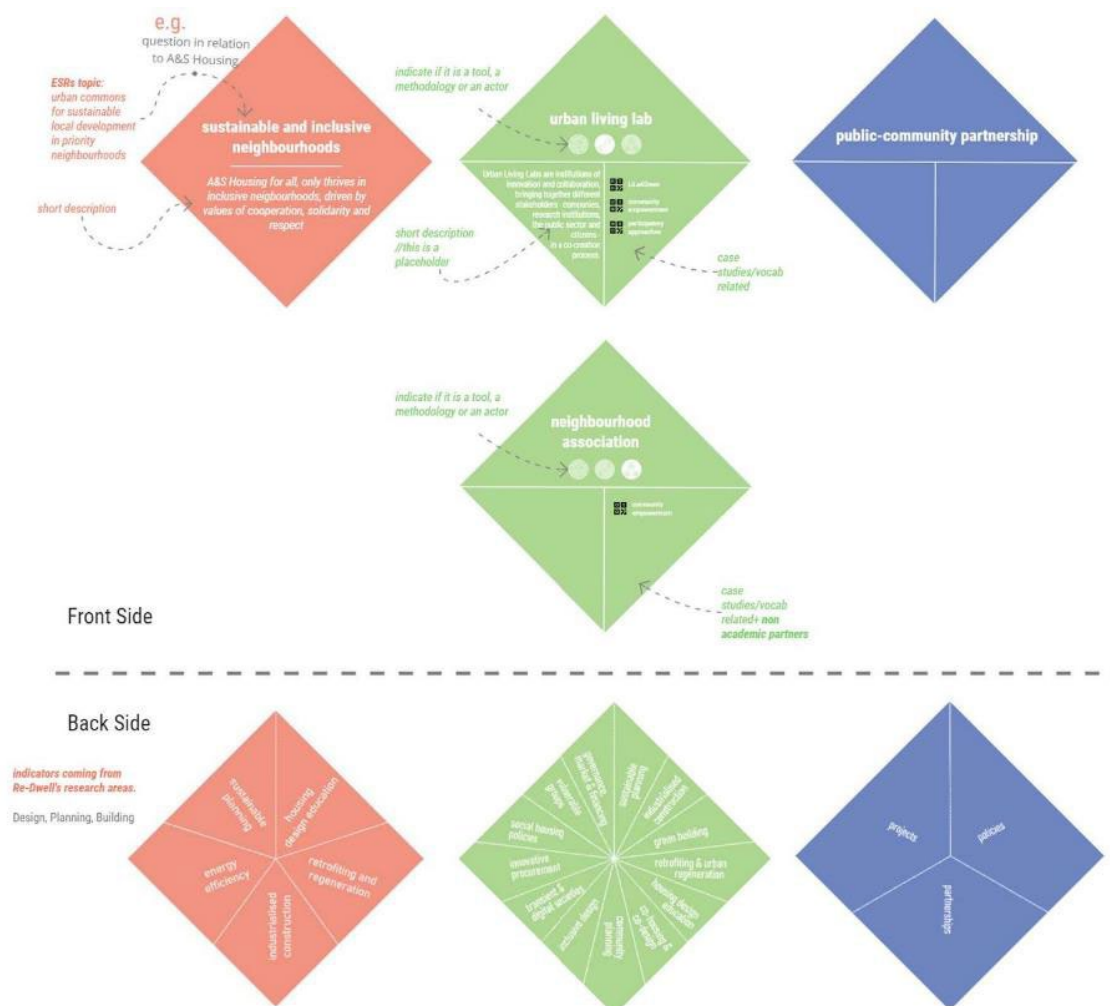


Figure 3.7. Details of the cards used in the Reading summer school activity

The game was played during the Reading meeting in two rounds (Figure 3.8) to test the strengths and limitations and to verify to which extent facilitated the creation of a shared language based on the outputs produced by the network so far (vocabulary entries, cases, secondments).

Overview & Aim

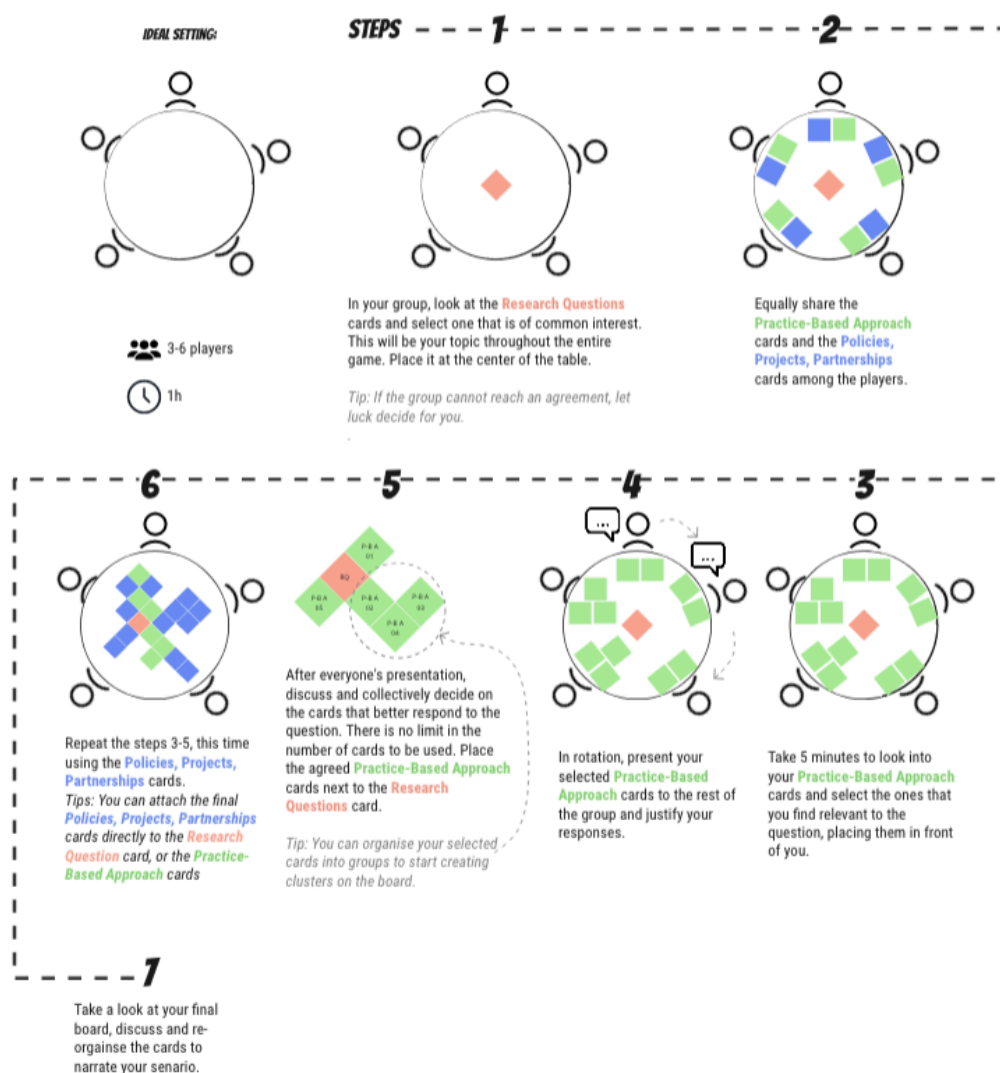


Figure 3.8. Steps in the activity at the Reading summer school

3.2.2. Participatory session

The game was played at the University of Reading, on Wednesday, July 5, 2023, during a three-hour session. There were 31 participants, including one online participant, eleven supervisors, one communication manager, six representatives from partner organisations, and 13 ESRs (Table 3.1).

Table 3.1. Teams in the Reading session

Team	Research area focus	ESRs	Partner organisations	Supervisors
1	Design, Planning & Building	Anna Martin, Aya Elghandour, Zoe Tzika	Elanor Warwick, (Clarion Housing Group)	Leandro Madrazo, Gerard van Bortel
2	Design, Planning & Building	Andreas Panagidis, Annette Davis, Alex Fernández (online)	Charalambos Iacovou, (Cyprus Land Development Corporation)	Nadia Charalambous, Lorraine Farrelly
3	Community Participation	Androniki Pappa, Carolina Martín, Tijn Croon	Maria Antónia Vitória, (Lisbon Municipality)	Adrienne Csizmady, Karim Hadjri
4	Policy & Financing	Saskia Furman, Effrosyni Roussou	Margherita Marinelli, (Housing Europe), Natalie Newman (South Yorkshire Housing Association) (online)	Marja Elsinga, Adriana Diaconu
5	Policy & Financing	Mahmoud Alsaeed, Marko Horvat, Leonardo Ricaurte	Margarida Maurício, (Lisbon Municipality)	Gojko Bezovan, Carla Sentieri

The objective of this interactive session, facilitated by Alexandra Paio (ISCTE), was to engage participants, clarify doubts and define the times to interact in the two rounds (Figure 3.9). After an introduction to the game and the process, participants started the activity divided into five groups, each with a specific theme. These themes were organized around the three key RE-DWELL research areas: 1. Design, Planning & Building (2 teams); 2. Community Planning (1 team); and 3. Policy & Financing (2 teams) (Table 3.1).



Figure 3.9. Start of the session in Reading

The discussion developed in two rounds, each lasting approximately one hour. In the first round, the groups started with a “Research questions” cards (orange) and in the second they started with “Policies, practices and partnerships” cards (blue). Following the guidelines, participants first had to agree on the cards they would use and then discuss how to put them together. During this discussion, the knowledge each participant possessed, derived from their unique perspective, research, or practice, was verbalized. The potential connections between research questions; methods, tools, actors; and projects, policies, and partnerships were discussed.

Throughout the discussion, various arrangements of the cards were laid out on a table (Figure 3.10, see Annex 1 - Card configurations Reading session for the full compilation). At the end of the session, each team filled out an evaluation form describing the selected cards and the rationale for their choices (see Annex 2 – Evaluation Reading session). To conclude the session, a representative from each team shared and explained the process and outcome with the whole group.



Figure 3.10. One of the arrangements created during the session

3.2.3. Assessment of the tool

The assessment of this tool took into consideration notes from the observer (Gerard van Bortel, TUD), the teams' presentations after each round, the card configurations from each team, as well as the feedback form completed after the session. Due to time constraints, not all participants were able to fill the form.

The dynamic nature of the activity encouraged discussions among participants about the need for a shared language to frame housing issues and challenges, leading to suggestions for new cards (Table 3.2). Additionally, feedback on the selected cards and the rationale behind their choices offered valuable insights for improving the activity's mechanics and card design.

Table 3.2. Suggestions for new cards

Group 1	Group 2	Group 3
Green Cards <ul style="list-style-type: none"> • Construction company + supply chain • User behaviour (real or perceived) • Carrot and/or stick incentives (One idea: taxes example from the Netherlands evaluating housing associations) • EU, national e local government all housing Providers 	Green cards <ul style="list-style-type: none"> • Urban Room method • Digital mapping tool • Favourable financial vehicles (EiB, CEB, EBRD) • Favourable loans 	
Blue Cards <ul style="list-style-type: none"> • End – open source • Authority giving planning permission to think of health of people & health of planet • Library of LLC details • Sustainable construction regulation + policy • Outcome – mass – scaling-up capacity 		Blue Cards <ul style="list-style-type: none"> • Advocacy • Public-private partnership (picture) • Public-civic partnership (picture) • Assembly co-governance (picture) • CLTs Community Land Trusts; • Participatory diagnosis

The session was recognized as a good start for further development, and the toolbox was described as essential and very useful. The following suggestions were gathered from the participants responses and organized thematically:

Alignment with RE-DWELL's core objectives

ESRs suggested that future iterations of the toolbox should remain aligned with RE-DWELL's core research objectives to maintain continuity. They proposed that tools like this should be a primary output of RE-DWELL, focusing the consortium's efforts on creating a flexible and adaptable toolbox that uses accessible language and inclusive rules. This approach would help avoid excluding the general public with jargon-heavy reports, which could undermine the consortium's transdisciplinary goals.

Innovation and engagement

The session was recognized as a good starting point for further development, with the experience of the game being described as essential and highly useful. Positioning the toolbox as a primary output of RE-DWELL was seen as a potential way to enhance innovation and engagement within the consortium.

Reflection and knowledge co-creation

Participants emphasized the importance of using tools like the game for reflection and knowledge co-creation, rather than simply replicating card placements. The game effectively stimulated dialogue among participants about the connections between problems in affordable and sustainable housing, moving beyond just problem identification and solution-finding.

Improvement suggestions for the game

- **Guidelines and time for discussion:** To ensure the final selection of cards reflected a shared understanding rather than individual viewpoints, participants suggested clearer guidelines and more time for participants to explain their card placements. Allowing more time for discussion and reflection was seen as a way to deepen the collaborative learning process and ensure a more effective outcome.
- **Activity dynamics:** The dynamics of the activity and time constraints were noted to sometimes limit discussions, leading to uncertainty about whether the final set of cards represented consensus, compromise, or conflicting opinions. Clarifying the activity's process and adjusting the pacing could help achieve a more robust shared understanding among participants.

Round structure

Participants found the first round of the activity more engaging, while the second round was perceived as less effective due to participant fatigue. A small break or team swap between rounds was suggested to improve the experience and maintain engagement.

Clarity of tools and content

- **Tools and Methods Confusion:** Participants noted confusion between the tools and methods, particularly the green cards representing system knowledge. Some indicators on the research questions cards were considered too general, and it was suggested that clearer definitions and more specific content would improve the game's usability and understanding as a toolbox.
- **Research Questions:** Some research questions were considered too narrow, and the game experience was noted to be somewhat disconnected from real-world scenarios. ESRs felt that more constraints were needed to reflect actual situations, and clarified the scope of the toolbox (such as focusing on new construction versus renovations) would enhance its realism and practical applicability.

Visual arrangement and interaction

The visual arrangement of the cards was appreciated, with suggestions to integrate clearer concepts and more interactive visual tools to further enhance the educational and engagement value of the toolbox.

Societal challenges vs. research questions

The orange cards, which contained research questions related to the PhD projects of the ESRs, were found to be too academic and difficult for partner organizations to engage with. It was decided to replace these research questions with societal challenges (target

knowledge) that underlie the research questions, making the content more accessible to a broader audience.

Online play considerations

While the game was viewed as an innovative tool for problem clarification and decision-making, some participants felt it might not be suitable for online play. The online version was criticized for being difficult to follow in a remote setting. This feedback highlights the need for careful consideration of how the game is implemented across different platforms to ensure accessibility and engagement for all participants. Adapting the game to different target groups by adjusting the language and content would improve its effectiveness and inclusivity.

Adjusting language for inclusivity

Adjusting the language to be less academic was seen as essential for ensuring the toolbox's usefulness across diverse audiences. The Transdisciplinary Environment was also considered to need better context-specific guidance, with more constraints that reflect specific challenges to enhance the relevance and applicability of the activity.

3.2.4. Conclusion

The evaluation of the session in Reading Summer School targeted several aspects of the game, including its potential for knowledge construction. Some of the aspects covered were the activity's structure and dynamics, as well as the tool's potential for reflection and knowledge co-creation as a result of its ability to stimulate dialogue and collaboration. The scope and reach of the tool were also discussed, focusing on the need for better adaptation and accessibility to improve its realism and applicability. An important takeaway was both the necessity and its potential for reaching context-specific cases, which represent added complexity that requires wider adaptation possibilities.

In sum, the game successfully stimulates dialogue among diverse participants regarding connections between problems in affordable and sustainable housing. It encourages exploring these connections collaboratively, moving beyond mere problem identification and solution-finding. Providing clearer guidelines or more time for participants to explain their card placements, ensures that the final selection reflects a shared understanding rather than individual viewpoints.

While the session received positive feedback for its potential in problem clarification and decision-making, there are clear opportunities for refinement. Future iterations should prioritize clarity in the activity's mechanics, adaptability to different contexts, and deeper integration with the practical realities of affordable and sustainable housing challenges. These steps should ensure that the TEASH toolbox evolves into a robust means to facilitate meaningful dialogue and innovative solutions derived from the collective findings of the RE-DWELL network.

3.3. Delft plenary meeting

The second iteration of the game was implemented and tested in a network meeting, in Delft, the Netherlands. There were two important new elements in this round: the research questions were replaced by "societal challenges" and a description of a concrete case from a partner organisation.

In preparation for the session, the ESRs were tasked to define three challenges for affordable and sustainable housing initiatives which were then collected into a new set of cards. Moreover, the link between the three types of knowledge from the literature and the cards used in the activity was explicitly described (see Deliverable 4.6).

As a second learning from Reading, two partner organisations—SYHA and EFL—proposed two real-world application cases that could serve as scenarios for testing the upgraded version of the game (see Annex 3- Case studies Delft session).

- **Case Study #1 : Retrofit or our housing stock.** The was proposed by Natalie Newman of the South Yorkshire Housing Association (SYHA). The underlying challenge in this case was the retrofit of the existing homes (5,500 in total). The table below specifies the different elements of the case.
- **Case Study #2 : Lack of knowledge on targeted policy instruments to alleviate energy poverty** was brought by Ben Pluijmers of the European Federation for Living (EFL). The challenge for this case was the lack of knowledge on targeted policy instruments to alleviate energy poverty, focusing on how to align short and long-term measures by three levels of actors: National Government, Local Authorities and Housing Associations.

The primary aim of the session was to collaboratively address these challenges and apply the new version of the game to the two real-world cases, evaluating its effectiveness as a tool for fostering innovative solutions and knowledge exchange.

3.3.1. Game tool re-designed

The new version of the game incorporated learnings from the Reading session, and the latest development of the collective research work.

In the session, four sets of cards (Figure 3.11) were used:

- **Challenges**, 34 cards (orange) contain the challenges related to affordable and sustainable housing, defined by the ESRs on the RE-DWELL website.
- **Target knowledge**, 24 cards (yellow) that include dimensions, levels, and topics based on the ESRs' contributions.
- **Systems knowledge**, 70 cards (green) with methods, tools, and actors, also based on the ESRs' contributions.
- **Transformation knowledge**, 60 cards (blue) including policies, projects, and partnerships.



Figure 3.11. Card types used in the Delft session

For this next version of the game, a physical board was not used. A guide on how to carry on the discussion was introduced, which served a similar purpose (Figure 3.12).

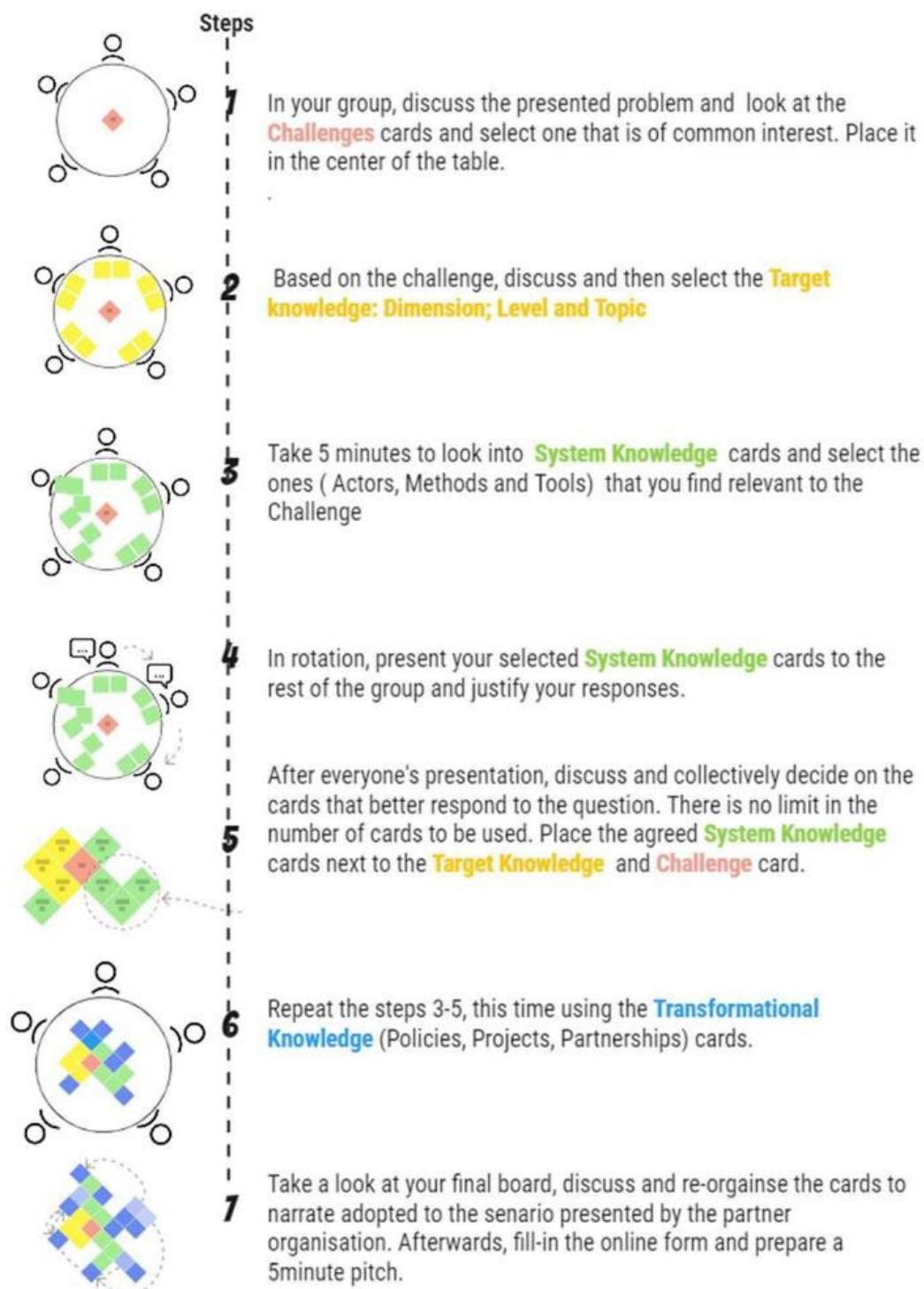


Figure 3.12. Guide on how to carry out the discussion using the cards

3.3.2. Participatory session

The session took place during the RE-DWELL plenary meeting in Delft on Wednesday, October 24, 2023 (Figures 3.13 and 3.14) during a morning and an afternoon session.



Figure 3.13. Case study #1 being presented by SYHA



Figure 3.14. Case study #2 being presented by EFL

In the morning session, after a general introduction, participants started the activity divided into four groups, each with a specific theme, with the input of two partners—EFL (European Federation for Living) and SYHA (South Yorkshire Housing Association)—who provided real-life problems from their organisations, in response to the points found in the previous evaluation moment. Each team consisted of three ESRs, each representing one of the core RE-DWELL perspectives (i.e., Design, Planning & Building, Community Planning, and Policy & Financing) (Table 3.3). Building on lessons from Reading, the Delft activity included supervisors and observers for each team. The observers' role was to summarize the team interactions and doubts as external evaluators.

Table 3.3. Teams in the Delft sessions

Team	Partner organisations	Research area focus	Facilitator and Observer	ESRs	Supervisors
1	Case Study #1 Natalie Newman, SYHA	Design, Planning & Building, Community Participation, Policy & Financing	Alexandra Paio (facilitator), Gerard van Bortel (observer), Daylam Dag (observer)	Annette Davis, Effrosyni Roussou, Alex Fernández	Adrienne Csizmady, Leandro Madrazo
2	Case Study #1 Natalie Newman, SYHA	Design, Planning & Building, Community Participation, Policy & Financing	Alexandra Paio (facilitator), Adriana Diaconu (observer)	Carolina Martín, Leandro Ricaute, Marko Horvat	Núria Martí, Krzysztof Nawratek
1	Case Study #2 Ben Pluijmers, EFL	Design, Planning & Building, Community Participation, Policy & Financing	Marja Elsinga (facilitator), Joris Hoekstra (observer)	Saskia Furman, Aya Elghandour, Zoe Tzika, Tijn Croon	Gojko Bezovan , Paulette Duarte
2	Case Study #2 Ben Pluijmers, EFL	Design, Planning & Building, Community Participation, Policy & Financing	Marja Elsinga (facilitator), Marietta Haffner (observer)	Anna Martin, Androniki Pappa, Mahmoud Alsaeed, Lucia Chaloin	Karim Hadjri

For each of the two real-world cases, two teams discussed the links using the new version of the game (Figure 3.15). After the activity, in the afternoon session the groups presented the results. Following the presentations, an evaluation of the game through a questionnaire took place. This evaluation provided support for further improvements to the format and process.



Figure 3.15. Teams discussions using the game cards

3.3.3. Assessment of the tool

The evaluation of the Delft activity was done through an online survey completed by 18 participants during or shortly after the morning session (full survey and results are detailed in Annex 4 - Evaluation Delft session). In the afternoon, each team shared their findings, while the observers explained the issues they had identified. Below is a reflection on the main lessons drawn from the survey results. The contents of the online evaluation forms were analysed by Gerard van Bortel from TUD and Mafalda Casais from ISCTE.

The following suggestions were gathered from the participants responses:

- ESRs expressed confusion regarding the meaning and need of certain components of the cards, such as the levels and dimensions. Additionally, they indicated feeling ambiguity about distinguishing between influencers and decision-makers within the “actors” category. Clearer definitions and categorizations are necessary to resolve these uncertainties.
- Feedback suggests that the cards were still too academic and mainly suited for experts. To make them more accessible to non-academic stakeholders, the content needs to be adapted, especially by providing context during activities. This would allow the game to remain general enough for various problems but still be tailored to specific contexts during participatory sessions. Additionally, the challenges described by individual researchers need to be reviewed to create a shared understanding and clear categories.
- Feedback on the cards indicates that they are perceived as too academic and primarily tailored for experts. To increase accessibility to non-academic stakeholders, the content requires adaptation, particularly through contextualization within an activity.
- Participation in activities using the game as considered as creating opportunities for self-reflection, which can lead to the reformulation of the problems at hand. In that sense, the toolbox was considered an important learning means for both researchers and non-academic actors. Including examples of best practices from

case studies on the cards was indicated as a way to significantly enhance the toolbox's utility.

- Another point to highlight to improve the effectiveness of the tool is integrating instructions on how to engage with the activity into its introduction. The presence of a moderator to guide participants through the process, along with the use of a board for structuring the activity, was recommended in the evaluation. Role play and scenario-based context-setting are suggested as additional elements that can enhance the experience.
- An important outcome of the evaluation is realising this kind of tools, when combined with a participatory activity, does not aim to provide direct solutions to problems. Instead, it fosters a deeper understanding of complex issues, facilitates dialogue, and helps develop strategies and processes for engaging with different actors. Through these participatory activities, housing challenges can be collaboratively defined using the knowledge generated during these sessions.
- There is a reciprocal relationship between the tools and localized participatory activities: while the game provides a shared language for discussion, insights from these discussions help to refine and expand the knowledge of both academic experts and practice experts. Participants are encouraged to start by redefining the problem from their own perspectives, using the knowledge embedded in the game as a foundation. To broaden the approach, alternative methods like sequential role-playing were suggested. This way collaboration and collective knowledge-building is reinforced, empowering participants to feel like experts in the discussion.

3.3.4. Conclusion

The evaluation of the game in Delft highlighted both its strengths and areas for improvement. The game session was successful in fostering a transdisciplinary exchange by providing a common language for structuring knowledge across disciplines. However, the need for clearer definitions and a more accessible approach for non-academic stakeholders became apparent. Participants expressed confusion about certain components of the game, such as the distinction between influencers and decision-makers, and the academic nature of the cards was seen as a barrier to broader engagement. Adaptations, including clearer instructions, role play, and context-specific examples, were suggested to make the toolbox more relevant and user-friendly across diverse settings.

The sessions highlighted that these tools, when combined with participatory activities, are not intended to provide direct solutions but rather to deepen understanding of complex issues, foster dialogue, and support strategic thinking. To enhance its effectiveness, the tools should be customised based on the specific needs of stakeholders, balancing complexity with practical applicability. By simplifying terminology, refining content, and tailoring sessions to context, the TEASH toolbox can better foster cooperation, generate ideas, and serve as a valuable tool for tackling challenges in affordable and sustainable housing.

The main takeaway of the sessions is the need for ESRs, together with non-academic partner organisations to tailor the toolbox based on their own needs, ensuring a balance between complexity and effectiveness, with specific recommendations and strategies for

context-specific cases. This customization should aim to clarify the toolbox's purpose, simplify its terminology, refine its structure and content for better clarity and focus, and enhance the interaction and content of the cards to ensure tangible outcomes. By adapting the sessions to fit different contexts and stakeholders' needs, the TEASH toolbox can better serve as a means for fostering cooperation, facilitating dialogue, and collectively building knowledge to address complex challenges in affordable and sustainable housing.

3.4. Barcelona conference

The final stage of the toolbox's development took place at the Barcelona Final Conference, Spain, featuring a participatory session centred on the TEASH toolbox. In preparation for this session, ESRs were tasked with defining issues and objectives for the customised partner organisations' game board, drawing on insights from ESRs' secondment reports and the May RE-DWELL non-academic partner organisations survey.

This process facilitated the refinement of the boards, which were updated and structured as dynamic, scenario-based tools to encourage collaborative dialogue between partner organisations, supervisors, ESRs, and external participants. The connection between the three types of knowledge outlined in the literature was explicitly embedded in the session (Deliverable 4.6).

3.4.1. Game tool re-design

The updated version of the game integrated insights gained from the Reading and Delft sessions, along with the most recent advancements from the collective research efforts. For this session, the toolbox included three types of cards:

- **Target knowledge** 24 cards (yellow), meaning the “Dimensions”, “Levels”, and “Challenges” to define the problem at hand
- **Systems knowledge** 70 cards (green), corresponding to “Actors”, “Methods”, and “Tools” that are able to operate within the system
- **Transformation knowledge** 60 cards (blue), including “Policies”, “Projects”, and “Partnerships” which become instrumental in applying measures that impact the given reality (Figure 3.16)



Figure 3.16. Card types used in the Barcelona session

In addition to the cards, the TEASH toolbox for the Barcelona session included a board customized to fit the non-academic partner organisations that participated, tailored to address the issues and objectives identified in the May 2023 surveys and ESRs' secondment inputs (Table 3.3). The board simulates the design process of creating impactful solutions, providing a hands-on, interactive way to explore and develop strategies (Figure 3.17).

Table 3.3. Issues and corresponding objectives from the Housing Europe group's board

Issues	Objectives
Promoting policies and initiatives that increase access to affordable housing, ensuring that everyone has a place to call home without facing financial hardship	Fit with financial means of the people in need
Promoting energy-efficient building practices, retrofitting existing housing stock, and incorporating principles of universal design to ensure accessibility for all residents	Building homes, within limits of the natural resources
Creating inclusive communities where everyone has the opportunity to thrive	Influencing policy changes at local, national, and international levels to prioritize affordable housing and address systemic barriers to accessibility

In addition to specifying the challenges being discussed, the board provided structure to the interactive session, based on three stages — 1. Preparation, 2. Co-creation, and 3. impact—, which were supported by key-questions and tips that gave directions to address them (Figure 3.18).

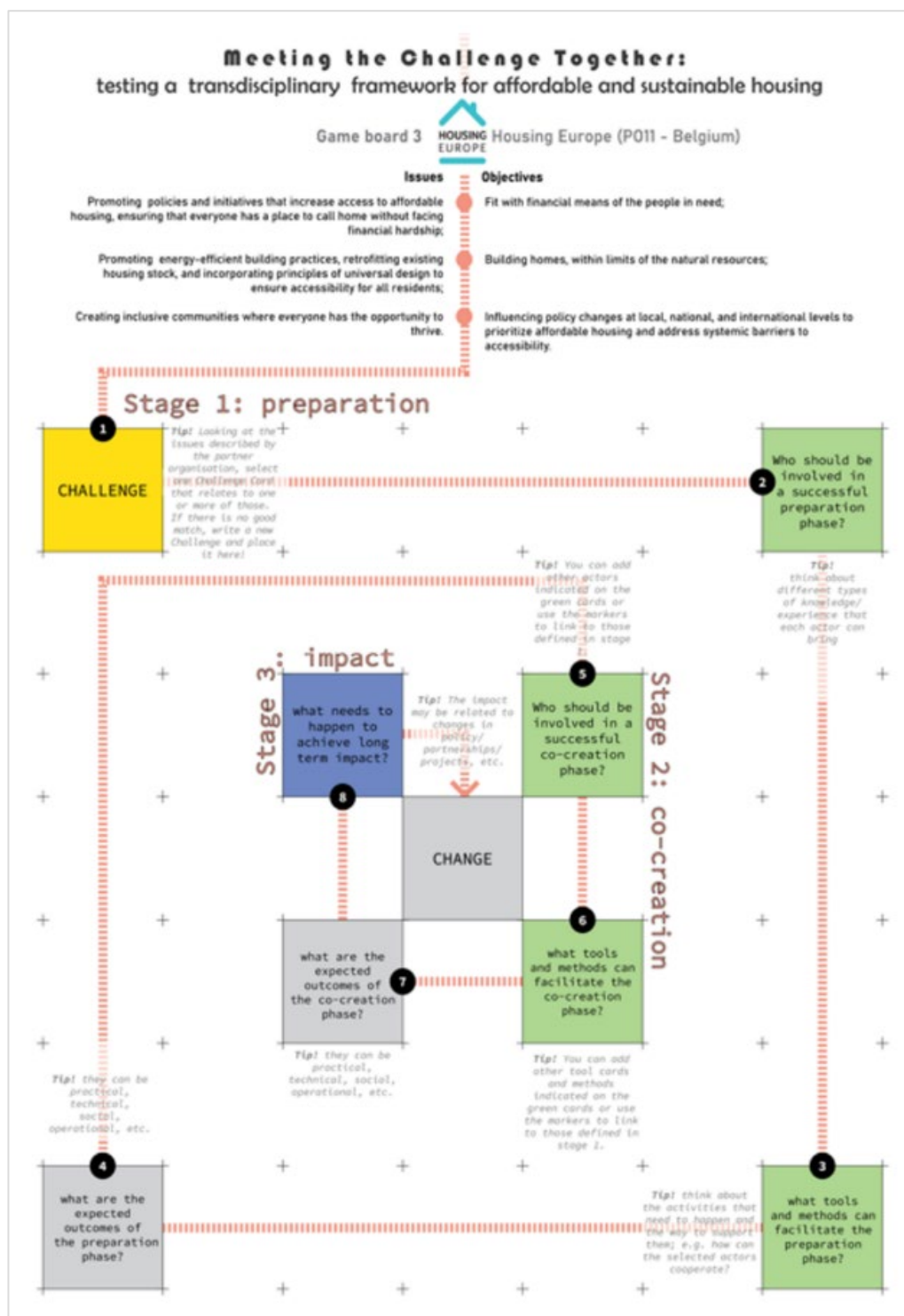


Figure 3.17. Board used by the Housing Europe group



Figure 3.18. A team engaging with the board in the Barcelona session

Table 3.4. The three stages defined in the board

Stage	Cards	Tips
Stage 1: Preparation	1. Challenge (yellow)	Looking at the issues described by the partner organisation, select one Challenge Card that relates to one or more of those. If there is no good match, write a new Challenge and place it here!
	2. Who should be involved in a successful preparation phase? (green)	Think about different types of knowledge/ experience that each actor can bring
	3. What tools and methods can facilitate the preparation phase? (green)	Think about the activities that need to happen and the way to support them; e.g., how can the selected actors cooperate?
	4. What are the expected outcomes of the preparation phase? (grey)	They can be practical, technical, social, operational, etc.
Stage 2: Co-creation	5. Who should be involved in a successful co-creation phase? (green)	You can add other actors indicated on the cards or use the markers to link to those defined in stage 1.
	6. What tools and methods can facilitate the co-creation phase? (green)	You can add other tool cards and methods indicated on the green cards or use the markers to link to those defined in stage 1.
	7. What are the expected outcomes of the co-creation phase? (grey)	They can be practical, technical, social, operational, etc.
Stage 3: Impact	8. What needs to happen to achieve long term impact? (blue)	The impact may be related to changes in policy/ partnerships/ projects, etc.

3.4.2. Participatory session

The session was carried out in six teams, with one team focusing on Design, Planning, and Building, two teams dedicated to Policy and Financing, and three teams concentrating on Community Participation, facilitated by Alexandra Paio (ISCTE). The division of the team members was based on the ESRs' secondments and the expertise of supervisors, who have a deep understanding of the context, issues, and challenges faced by the specific non-academic partner organisations (Table 3.5). This structure ensured that each team could leverage specific knowledge and skills to address relevant topics effectively.

Table 3.5. Teams and focus areas of the Barcelona session

Team	Partner Organization	Research area	ESRs	External	Supervisors
1	Elanor Warwick (Clarion Housing Group)	Design, Planning & Building	Leonardo Ricaurte, Carolina Martín	Margaux Lespagnard	Lorraine Farrelly, Núria Martí
2	Charalambos Iacovou (Cyprus Land Dev. Corporation)	Community Participation	Andreas Panagidis	Lorenzo Stefano Iannizzotto, Fabio Lepratto, Michelle Norris	Nadia Charalambous
3	Margherita Marinelli (Housing Europe)	Policy & Financing	Tijn Croon, Mahmoud Alsaed		Marja Elsinga, Krzysztof Nawratek, Ignacio Guillén
4	Jose Téllez (Sostre Cívic)	Community Participation	Androniki Pappa, Zoe Tzika	Newsha Salari	Carla Sentieri, Leandro Madrazo
5	Ana Zadelj Kovač, (Ceraneo)	Policy & Financing	Marko Horvat, Anna Martin	Aboli Mangire, Giuliana Miglierina, Adirane Calvo	Gojko Bezovan, Adrienne Csizmaday
6	Jordi Serrano-Codina (Incasòl)	Community Participation	Saskia Furman, Lucia Chaloïn	Noémi Gyárfás	Karim Hadjri, Adriana Diaconu, Ana Vaz Milheiro (External Advisory Board)

The structure of the session followed a clear progression, organized into the following stages:

1. **Team formation:** Participants were divided into teams, ensuring a mix of expertise and perspectives;
2. **Problem identification:** Each team identified key issues and challenges relevant to their focus area, drawing on the specific knowledge and expertise of team members;
3. **Strategy development:** Teams brainstormed and developed strategies to address the identified problems, integrating insights from their fields and the practical experiences of non-academic partners (Figure 3.19);
4. **Final presentation:** Each team presented their refined solutions, highlighting anticipated benefits and implementation strategies, ensuring a comprehensive approach to the issues;
5. **Feedback and iteration:** After the presentations, each team filled out an online form to provide feedback and reflect on the session.



Figure 3.19. A nearly completed board at the Barcelona session

3.4.3. Assessment of an example

The Barcelona version of the TEASH toolbox was used in a discussion that exemplifies this connection: the case brought forward by Housing Europe.

Initially, the team focused on the lack of housing, thinking in economic terms of demand and supply and in terms of land and production of new dwellings. However, while exploring the problem definition with the toolbox and input from different disciplines and policy, a new definition was co-created: a lack of dwelling space. This new problem definition opened a wider scope for strategies to tackle the problem: not only the production of new dwellings, but also more efficiently use vacant and underoccupied dwellings.

What happened while following the route on the board is that the target knowledge became more abstract—it was not only about housing production, but about dwelling—leading to a brainstorming about more efficient use of the housing stock at various levels (Figure 3.20). Merging these perspectives means that the systems knowledge to consider was different, opening the way: the team was able to draw from different disciplines, and identify new solutions and strategies (transformation knowledge), such as taxing underoccupied or vacant houses, regulating the use of dwelling spaces, and organizing new living concepts, like cooperatives or collaborative housing.

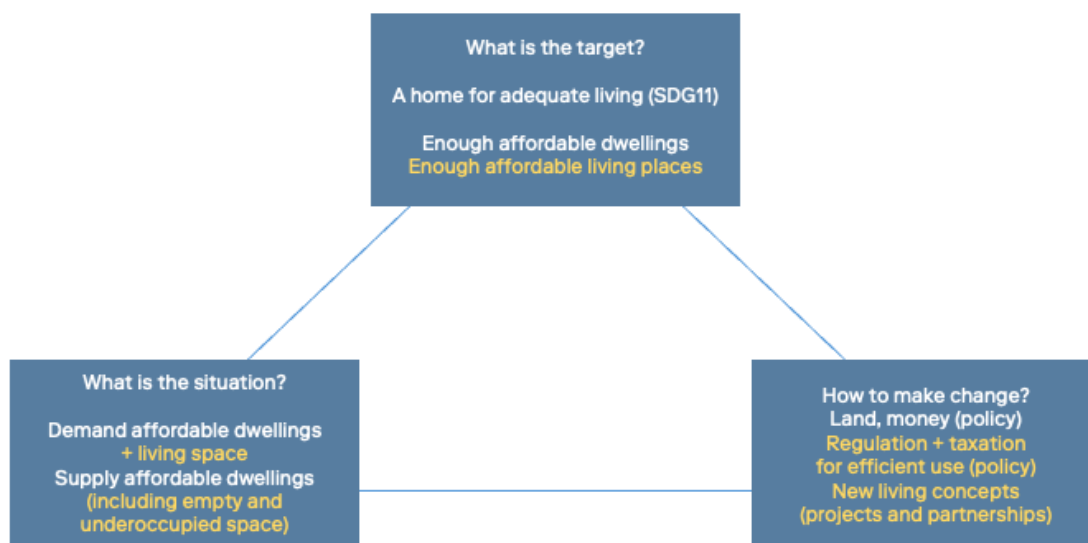


Figure 3.20. Redefinition of the problem
(in white the original definitions, in yellow the reframed issues and solution space)

Problem definition is a critical first step in addressing complex issues. Bringing together diverse expertise to understand the issue at an abstract level and produce a joint definition often leads to new problem definitions, which, in turn, open pathways to innovative strategies.

Abstraction is a cornerstone of transdisciplinarity, and participatory tools plays a pivotal role in this process. By distilling complex issues to their essential characteristics and omitting less relevant details, the toolbox fosters broader understanding and enhances communication among diverse stakeholders. This is particularly valuable in housing provision, where it bridges divides between individuals with varying expertise, needs, and interests. For example, abstracting the core elements of sustainable housing design can help urban planners, architects, and policymakers align their objectives, resulting in more inclusive and effective solutions.

As a tool for transdisciplinary knowledge exchange, the TEASH toolbox facilitates collaboration among disciplines and supports engagement with both academic and non-academic partners, including experts and non-experts. There is significant potential for further customization of the toolbox, such as incorporating concrete examples or creating tailored versions for specific contexts. By integrating diverse knowledge and balancing abstract concepts with practical issues, the toolbox helps build shared understanding and enables the development of targeted strategies.

Our assessment of the TEASH toolbox highlights its effectiveness in supporting collaboration among stakeholders in housing projects. By promoting abstraction, structuring discussions, and aiding in decision-making, the toolbox addresses complex factors such as technical details and regulations. This approach fosters common ground, increases the potential for consensus, and guides stakeholders toward broader, more accessible concepts, ultimately enhancing decision-making and project outcomes.

3.4.4. Conclusion

The evaluation of the Barcelona session (see Annex 5 - Evaluation Barcelona session) provided valuable insights into the TEASH toolbox's effectiveness and its potential to address affordable and sustainable housing challenges. Participants acknowledged its practical utility while highlighting areas for improvement, such as allocating more time for activities, clarifying instructions, and ensuring the involvement of all relevant stakeholders. Addressing these concerns will enhance the toolbox's application in real-world contexts and increase its overall impact.

Key challenges identified during team discussions included rising homelessness and the absence of regulations for accessing vacant buildings in degraded neighbourhoods. Participants proposed involving new actors, such as civil society organizations (CSOs), housing cooperatives, and EU-level organizations. Suggestions also included categorizing stakeholders as "blockers" or "enablers" and mapping hierarchical relationships among them to better understand power dynamics.

In terms of strategies, participants emphasized the effectiveness of lobbying, cross-sector collaboration, and tools like mapping and road-mapping to address housing issues. They also introduced a European-level perspective, highlighting the importance of considering broader institutional frameworks for comprehensive solutions.

3.5 Conclusions

The three development sessions demonstrated that the TEASH toolbox holds significant potential as a tool for fostering dialogue, clarifying complex housing issues, and guiding stakeholders toward collaborative solutions. Participants valued the diversity of perspectives, noting that interdisciplinary collaboration enriched problem-solving and revealed solutions that individual disciplines might not have identified. Fair representation of stakeholders and a thorough understanding of local contexts were deemed critical. Additionally, cultural differences in addressing housing challenges highlighted the need for flexibility and adaptability in applying the knowledge embedded within the framework.

One of the key strengths of the toolbox is its integration of theory and practice. It provides a platform where academic knowledge intersects with practical solutions, enabling participatory exercises. However, participants emphasised the need for stronger alignment between European-level policymakers and local housing providers. Greater flexibility in navigating the framework's steps and improved support for subgroup discussions were also recommended.

The TEASH toolbox proved to be a valuable instrument for facilitating stakeholder dialogue, identifying strategies, and organising complex issues. Its effectiveness, however, depends on the participants involved, the objectives set, and the outcomes sought. It supported problem clarification by identifying challenges and bringing stakeholders together, fostering a shared understanding that could lead to outcomes such as policy reforms and the redistribution of responsibilities.

The sessions illustrated that the TEASH toolbox, especially when combined with participatory activities, is not designed to provide direct solutions but rather to deepen understanding, foster dialogue, and support strategic thinking. Customising the toolbox to meet the specific needs of stakeholders, simplifying terminology, and refining its content will enhance its effectiveness. Tailoring sessions to different contexts will ensure

that the TEASH toolbox serves as a valuable resource for fostering cooperation, generating ideas, and addressing challenges in affordable and sustainable housing.

The key takeaway is the necessity for ESRs, in collaboration with non-academic partner organisations, to adapt the TEASH toolbox to their unique needs. Balancing complexity with practicality will be crucial for its success. By tailoring the framework to suit diverse contexts and stakeholders, the TEASH toolbox can more effectively facilitate dialogue, foster collaboration, and support innovative approaches to tackling complex housing challenges.

4. Implementation and evaluation in local settings

The significance of considering sustainability and affordability in housing design, policy and neighbourhood and community management cannot be overstated, as it holds crucial implications for practitioners including housing associations, municipalities, community groups, and the construction industry, as well as for residents and other local stakeholders. It is crucial to recognize and accommodate local constraints and variations, as each project may have unique requirements. Creating quality living environments involves more than just providing shelter; factors such as accessibility, community integration, green spaces, and amenities are essential for the overall well-being and satisfaction of residents. In this regard, the TEASH toolbox can contribute to find a common ground and fostering collaboration across different disciplines, organisations and stakeholders can significantly enhance sustainable housing initiatives.

The application of the TEASH toolbox in specific local contexts spanned multiple fields, including planning, design, policymaking, and financing. The setup and procedures were designed to foster a shared understanding within these contexts, integrating the research findings of ESRs, the expertise of partner organizations, and the knowledge of supervisors to create a tailored solution. In each setting, participants are encouraged to identify the most effective participatory tools to engage stakeholders in meaningful conversations about housing challenges.

This chapter delves into the various local applications of the RE-DWELL TEASH toolbox, illustrating how the principles and strategies outlined in Deliverable 4.6 and following the experience gained during its development within the network. Through the examinations of specific projects, we explored how stakeholders can use the tools to address unique specific challenges, adapt to local constraints, and foster sustainable and affordable housing solutions that enhance the quality of life for residents.

Three local implementations were carried out in Lisbon (Portugal), London (UK), and Nicosia (Cyprus) are describe next.

4.1. Lisbon focus group session

On February 27, 2024, a team led by ESR Lucia Chaloin, supported by ESR Androniki Pappa and supervisor Alexandra Paio, organised the focus group session “APROXIMAR” (which loosely translates to “to get/bring closer”) at Vila Romão in Campolide, Lisbon (Figure 4.1). This local implementation happened in the context of Lucia’s secondment at the Lisbon Municipality and examined the integration of residents into retrofitting projects, focusing on the Vila Romão case. Vila Romão—a historic workers’ housing development in Lisbon—is a housing complex undergoing rehabilitation, with 25 housing units being renovated and five newly constructed, all offering affordable rents.

This renovation project presents a unique case where residents live amidst ongoing construction. This situation fosters an intriguing collaboration between residents and the construction team, providing a basis for engaging various stakeholders in discussions about integrating residents into the project from its inception.

The focus group session aimed to foster collaboration among stakeholders by analysing their needs and aspirations through individual interviews and a group session. The objective was to develop guidelines for transforming housing governance, introducing a

methodology to facilitate retrofit and urban regeneration processes, and strengthening community integration. Central to this approach is the understanding that quality living environments encompass more than just providing housing—they require inclusive, collaborative efforts that address the wider social and environmental dimensions of urban life.



Figure 4.1. Lisbon focus group session

4.1.1. Preparation

The preparation of the focus group was informed by established methodologies and contextualized within the specific needs of the project. It included a “Connecting Phase” and an “Exploratory Phase”, drawing on the framework described by Morgan (1997) for effective focus group facilitation and the exploratory research design principles outlined by Bloor et al. (2001). This approach situates the focus group within a collaborative and participatory framework, ensuring alignment with both theoretical foundations and practical considerations relevant to the local context.

The “Connecting Phase” involved establishing contacts with key actors from Lisbon Municipality, who facilitated a site visit and initiated connections with the local association “R/C-Rés do Chão” (<https://resdochao.org/>). This organisation specialises in participatory architecture and provided valuable advice on engaging local stakeholders and addressing community-specific challenges.

In the “Exploratory phase”, a series of interviews and informal discussions were conducted. Pre-session interviews included personnel from the Lisbon Municipality's housing policy, building, and participation divisions, specifically engaging architects, policymakers, and social workers, as well as residents. The goal was to gain insights into the participants' perspectives, explore the context, and understand the attitudes of key stakeholders.

Specifically, the aim of these contacts was to firstly uncover beliefs on the Vila Romão project: opinions about strengths, weaknesses, and expectations. Secondly, these interviews and informal talks aimed to explore people's attitudes towards participatory

activities. Lastly, they provided an opportunity for a discussion about the expectations of the upcoming focus group session. Based on the inputs received, the preparation of the workshop moved to the next stage.

4.1.2. Participants

The participants were recruited through the Lisbon Municipality through formal invitations addressed to the municipality personnel (Table 4.1) and informal invitations in the form of a flyer were distributed by counsellors to residents.

Table 4.1. Information relayed to municipality personnel

Good morning,

I'm a sociologist and researcher at the University of Grenoble Alpes, and I'm at the GVFR [Office of City Councillor for Housing, Local Development and Public Works of the Lisbon Municipality] until the end of February to develop a case study on the municipal process of the Vila Romão da Silva project, as part of the European RE-DWELL project, in which the Lisbon Municipality and ISCTE are the Portuguese partners.

One of the programme lines of RE-DWELL aims to contribute to the development of participatory processes, optimising organic cooperation practices between entities, services and residents.

So, I'd like to let you know about the workshop I'm organising with the GVFR in collaboration with DMHDL, DMMC/DHM [Housing and Local Development Municipal Department of the Lisbon Municipality] and the Participation Division, and I'd like to invite you to an on-site participatory game session in Vila Romão da Silva on 27 February (4.30pm), involving architects, municipal services, local associations, experienced community groups, residents and academics from ISCTE and the University of Grenoble.

I therefore ask for your willingness to take part.

Best regards, Lucia

It was important to have a diverse group of participants including the resident population and key stakeholders involved in the project, including all involved actors from all relevant sectors of the Lisbon Municipality, representatives of the construction company, and residents.

Vila Romão's residents are predominantly seniors, dealing with mental, social, and physical challenges that considerably affect their daily life. Through the recruitment process, the researchers were able to secure the participation of several members of the housing complex and key actors working on the project for all stages of the local implementation—pre-session interviews, focus group session, and post-session survey (Table 4.2). A total of 22 participants joined the focus group session, including residents, civil engineers, civil servants from the Lisbon Municipality, architects, academics, and architecture students. The Lisbon Municipality facilitated the organisation of the event.

Table 4.2. List of participants including role and attendance

Type of actor	Role	No. of people
Lisbon Municipality	Organiser/ participant	3
Lisbon Municipality - Civil engineers (including the chief of the construction department)	Participant	2
Social workers Lisbon Municipality	Participants	2
Lisbon Municipality - Community Participation (link to the Local Community groups)	Participant	1
Researcher/academic	Facilitator	2
Researcher/academic	Observer	1
Residents	Participant	6
Civil engineer (Open Line construction company)	Participant	1
Architecture student	Participant	4
Architects	Participants	2

4.1.3. Participatory session

The activity was organized into three main stages, each with multiple steps: “Preparation,” “Co-creation,” and “Impact” (see Table 4.3). To guide participants through each phase, a specially designed board was created (Figure 4.2), utilizing the cards previously developed in the RE-DWELL game sessions.

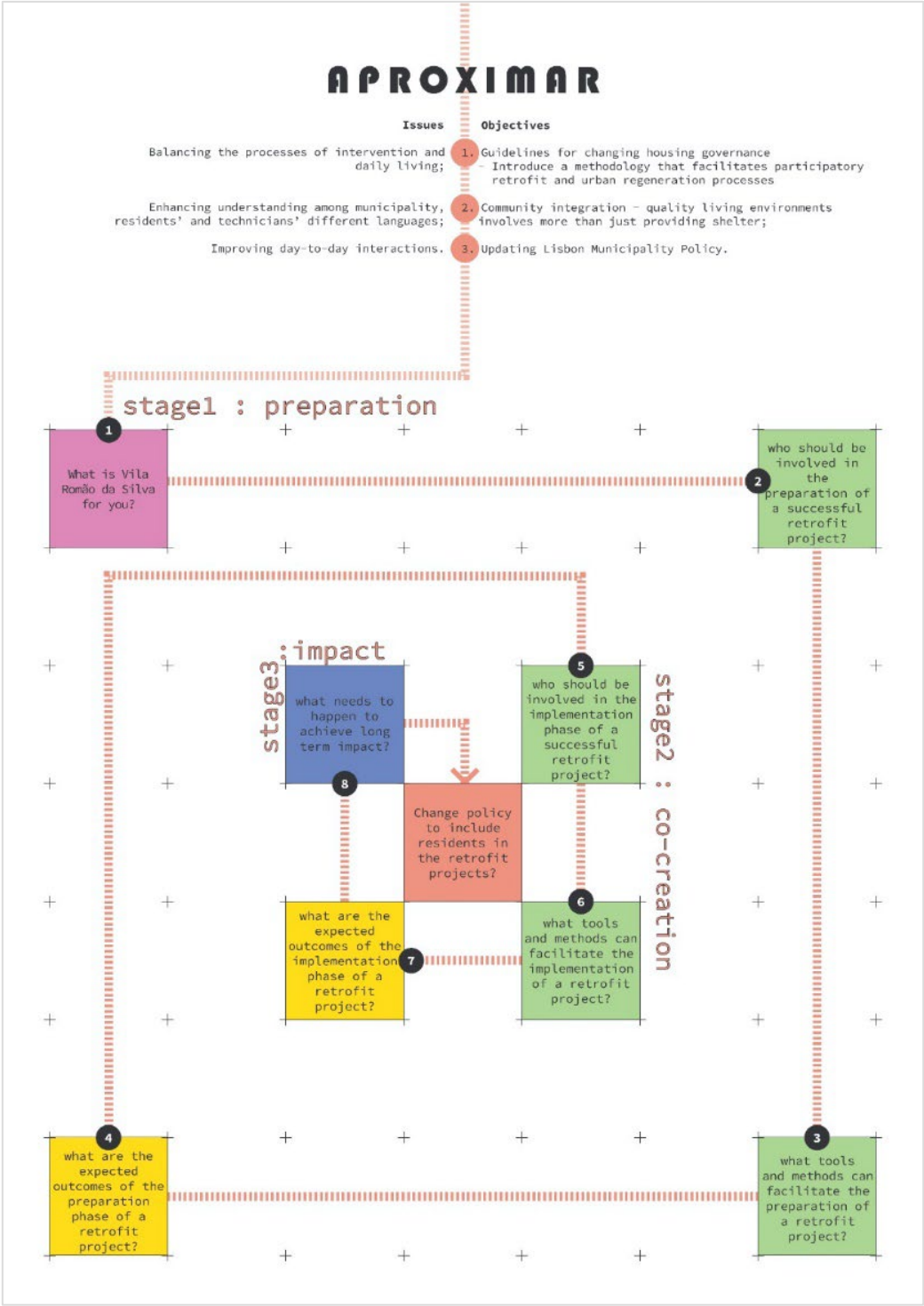


Figure 4.2. Board developed for the Lisbon focus group session

Table 4.3 Structure of the Lisbon focus group session

Stages of the activity	Stage 1: Preparation	Stage 2: Co-creation	Stage 3: Impact
Questions	<ul style="list-style-type: none"> • What is Vila Romão for you? • Who should be involved in the preparation of a successful retrofit project? • What tools and methods can facilitate the preparation of a retrofit project? • What are the expected outcomes for the preparation phase of a retrofit project? 	<ul style="list-style-type: none"> • Who should be involved in the implementation of a successful retrofit project? • What tools and methods can facilitate the implementation of a retrofit project? • What are the expected outcomes of the implementation phase of a retrofit project? 	<ul style="list-style-type: none"> • What needs to happen to achieve long-term impact? • Change policy to include residents in retrofit projects?
Focus	Discussing conception phase of Vila Romão, focusing on involved actors, methodologies, resources, and tools used.	Addressing implementation phase by recomposing the network of current actors, methodologies, and tools.	Imagining the future of rehabilitation processes beyond their current project experience.

The themes guiding the discussion were based on some of the pressing issues that the rehabilitation project poses, namely: 1. balancing the intervention processes and daily living; 2. enhancing understanding among municipality, residents, and technicians; and 3. improving day-to-day interactions among all involved in the project.

Participants were divided in two groups and realized the activity in three rounds, each lasting approximately 90 minutes.

4.1.4. Key insights

This focus group highlighted the complexity of retrofitting projects that aim to involve residents with diverse approaches and interests. Table 4.4 summarises the main insights that emerged from the focus group session.

Table 4.4. Key insights from the Lisbon focus group session

Themes	Key insights
Transdisciplinary Environment as a facilitator	<ul style="list-style-type: none"> • Facilitation tools allowed for multi-perspective dialogue • Allowed people whose paths would usually not cross to interact • Opened possibilities for stakeholders to communicate and act • Promoted a shared willingness to collaborate and listen • Helped participants share their knowledge beyond traditional discussion methods • Post it exercise helped bring residents' opinions and suggestions into the discussion
Added value for the challenge	<ul style="list-style-type: none"> • Combining technical and social orientations • Highlighting complementarity of concerns and interests • Supporting the decision-making process by considering more bottom-up inputs

The activity brought together stakeholders who typically would not engage directly, offering them a valuable opportunity to collaborate. This experience provided participants with a comprehensive view of the entire process, which some may not have had the chance to learn about or access otherwise.

The focus group session emphasized the importance of multi-perspective dialogue facilitated by various tools, enabling participants to leverage their expertise and share their knowledge and experiences beyond traditional discussion methods. The game fostered communication among policymakers, technicians, workers, and residents, helping them build a shared understanding of the issues impacting their community. In addition, the use of post-its (as “customizable cards”) played a crucial role in supporting bottom-up input, allowing residents' knowledge to surface through practical, everyday insights.

The interviews revealed some potential dissonance between residents' bottom-up input and a vertical decision-making approach based on professional competencies, meaning that at times there is a conflict between what residents want and need, and what is considered best according to a top-down assessment (from the Municipality and other high-level stakeholders).

Despite these issues, the focus group session promoted a collaborative and incentivising atmosphere that mitigated those barriers. The high participation in the activity suggests that the materials and processes used supported a generative and effective collaboration environment (Figure 4.3). The session showed that residents were the least engaged—in spite of the efforts of other participants in stimulating the discussion for all.

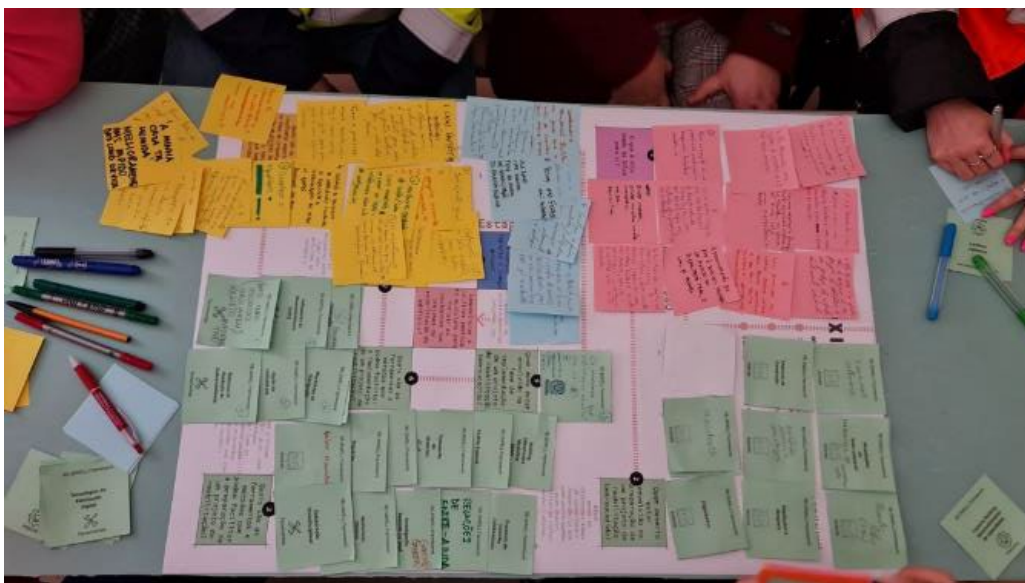


Figure 4.3. The board after the discussion

Vila Romão's context-specific challenges and benefits underscore the complexities of keeping residents in their homes during renovations to avoid displacement. While this approach offers practical and social support, it also leads to delays due to the need for temporary utility connections and continuous communication efforts. The group session highlighted the intricacies of stakeholder collaboration in participatory renovation projects and underscored the potential of combining technical and social approaches in participatory retrofitting. It also emphasized the importance of multi-perspective dialogue and diverse facilitation tools to improve collaboration and decision-making throughout the process.

4.1.5. Evaluation

Following the focus group session, a questionnaire evaluating the experience was provided to the participants.

In the analysis of the responses some moderation-related issues were identified, such as the need for briefing and debriefing moments, the need for better time management, and safeguarding that all the stakeholders were heard. Other questions mentioned in the evaluation relate to the difficulty of some participants (mostly residents) in understanding certain concepts on the cards—e.g., materials portfolio, participant observation. This was justified by the short time for understanding the concepts and due to social, cultural, and power barriers, which constituted significant challenges. As a result, some participants, mainly residents, considered it hard to express different positions in the group interaction.

Some participants pointed out the need for simpler and more dynamic materials, better adapted to support residents' understanding (like better readability, more colours, explanations)—something that should be considered and developed taking a case-by-case approach.

The methodology of combining individual and group data collection highlighted the challenges participants faced in expressing differing viewpoints. It became clear that

group interactions made it easier for individuals to voice their perspectives compared to one-on-one interviews. Participants also noted the positive, willing attitudes of others, which, while not inherently reproducible, may have been encouraged by the collaborative environment of the activity.

In addition to the evaluation questionnaire, a brief post-session survey was conducted to gather a more comprehensive understanding of the participants' impressions and the insights they gained from the activity. The survey responses emphasized the need for clearer and more accessible materials and processes, including a better introduction to the activity's objectives. Participants also suggested enhancing the experience by incorporating additional activities or site visits. To improve group dynamics, they recommended forming smaller, more diverse groups in terms of participants' backgrounds.

Despite the difficulties, participants indicated high levels of satisfaction, particularly about the dynamics of the activity that promoted spontaneous opinions and the rare intersection of stakeholders' viewpoints, as well as the overview of the whole process, to which some might otherwise not have access.

4.2. London focus group session

On May 22, 2024, a team led by ESR Leonardo Ricaurte, supported by Clarion Housing Group representative Elanor Warwick, organized a focus group session entitled “Beyond Standardisation: social value innovation and contextual adaptation” at Clarion's offices in London, UK (Figure 4.4). The session took place in the context of Leonardo's secondment at Clarion Housing Group—a UK-based Housing Association. The aim was to explore opportunities and barriers to developing a Post-Occupancy Evaluation (POE) process that can elucidate the quantitative and qualitative impacts of Clarion's activities that connect POE and Social Value.



Figure 4.4. London focus group session

Housing associations (HAs) play a crucial role in creating long-term social value in the housing sector. With their wide-ranging interactions and interest in community wellbeing, HAs are in a unique position to implement innovative strategies that drive regeneration, development and retrofit initiatives.

4.2.1. Preparation

In preparation of the focus group session, Leonardo conducted a series of interviews with Clarion staff to explore the environment and attitude of participants, about their approach to creating, monitoring and evaluating social value. This was a fundamental step in preparing for the session, not only because it sensitised participants about the topics being discussed, but because it gave the researcher information that would be used to guide the focus group session.

This data collection process fed into Leonardo's PhD research, which seeks to unveil the links between social value creation, the design of the housing block and the expansion of residents' capabilities as a metric to assess their quality of life. The intention was to provide feedback and show preliminary findings of the first stage of data collection to participants and other relevant Clarion staff.

4.2.2. Participants

To prepare the focus group session, it was necessary to select and recruit participants based on their interest and relevance to the social value chain within the organisation, aiming at covering the range of responsibilities comprehensively. An invitation was sent introducing the objectives of the activity and outlining questions and a challenge to be addressed based on the analysis of the data collected (Table 4.5). In addition, a report was sent together with the invitation, containing an introduction to the collaboration between Clarion and the RE-DWELL programme. This served to get their attention and show that the participation could be valuable to them as well.

Table 4.5. Recruitment message explaining the activity

Leonardo is proposing a 90 min two-part session as below:

Session proposal

1. Clarion's social value testimonies: The first part of the session will revolve around the main takeaways and findings from the interviews conducted over the last year with Clarion staff.

Presentation by Leonardo followed by discussion.

Key themes of the discussion are:

- How can we get an accurate picture of the outcomes and impacts that our intervention has on our residents?
- Are all our outputs reflected and fairly accounted for on current social value figures?
- How can we get access to a true picture of the local scale of need and opportunities?

2. From Social Value to POE: Collecting the data systematically and accurately is crucial to developing a robust social value strategy across the group. POE can help to engage with residents at a local level and better understand the impact of interventions, local values and increase empowerment and sense of agency.

- What are Clarion's next steps to progress and reinforce the benefits from both processes?

Problem case

This session will be focused on the opportunities and barriers to developing a POE process that can help shed light on the quantitative and qualitative impacts of Clarion's activities. Focusing on the context of the Neighbourhood Standard and the work done with the Quality of Life Foundation, it will address the practical challenges to implementing the theoretical capabilities approach which connects POE and Social Value.

Clarion operates across the UK and some participants are not based in London or work in the offices where the activity took place (this is particularly true for the resident involvement staff). To maximise attendance, it was therefore necessary to offer the option of a hybrid meeting (online and in-person) to include those who could not be at the organisation's offices in central London, but whose attendance was very important for the purposes of the activity.

When selecting participants, emphasis was placed on ensuring representativeness and relevance within the social value chain. To achieve this, a wide range of departments and disciplines was included in the selection process (Table 4.6).

Table 4.6. List of participants including role and form of participation

Type of actor	Participation	
	In person	Online
Director of Strategic Asset Management		x
Director of Regeneration	x	
Regeneration Project Manager		x
Partnerships & Projects Manager	x	
Community & Social Impact Lead		x
Portfolio Analyst		x
Head of Asset Strategy	x	
Head of Strategic Partnerships	x	
Regional Resident Involvement & Scrutiny Manager		x
Resident Involvement & Scrutiny Manager (2)		x

The session aimed to be relevant to a wide range of staff. An ideal list of participants included individuals from various levels of the business hierarchy: a few directors, some strategic decision-makers and, crucially, front-line staff delivering programmes and directly engaging with residents. For this session, Leonardo considered including residents, as the simplified version of the activity on a topic more relevant to social housing tenants would have worked well; however, due to logistic limitations, it was not possible.

4.2.3. Participatory session

The activity needed to be both grounded and feasible, yet conceptually stimulating, providing space for reflexive and speculative interactions that are often rare in a highly action-oriented organization. For the interactive session, the RE-DWELL transdisciplinary knowledge taxonomy—target, systems, and transformation knowledge—was employed to guide the discussion and facilitate the development of common ground among representatives from different departments within the company. A board was designed to structure the conversation into three phases (Figure 4.5), corresponding to the three types of knowledge. Each phase followed the same order and used the same prompt questions from the RE-DWELL cards. This format enabled the discussion to focus quickly on key issues, leveraging participants' existing expertise and addressing the challenge of limited time for the activity.

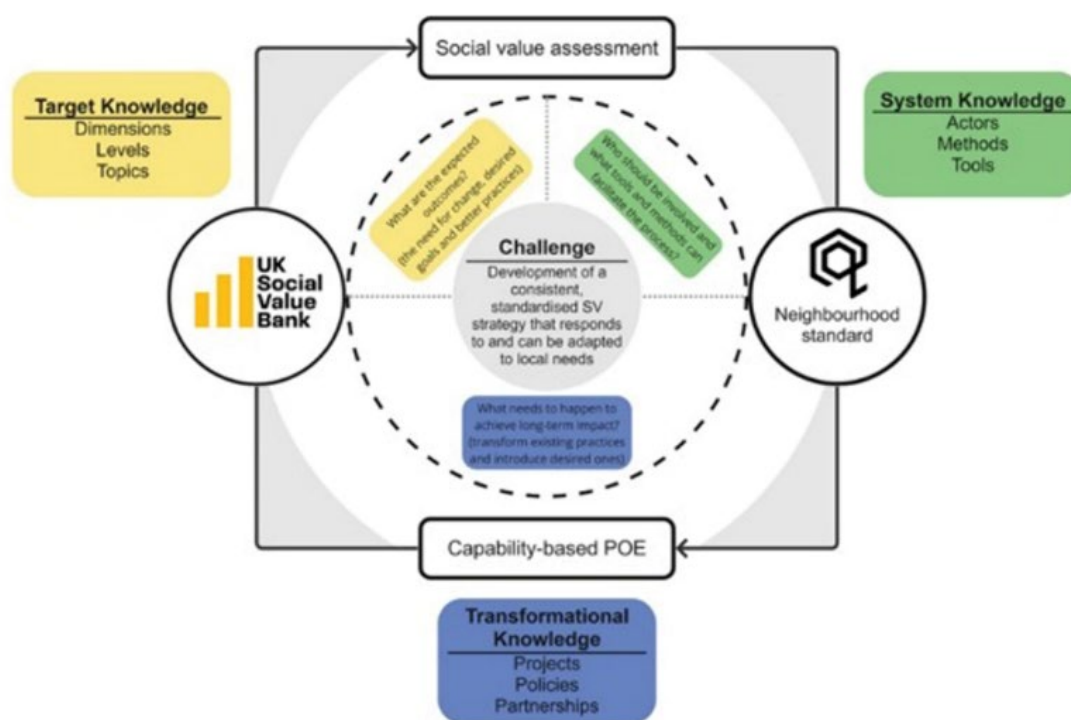


Figure 4.5. Board developed for the London focus group session

The focus group session began with Leonardo explaining the preliminary findings of his secondment and introducing the RE-DWELL programme. After Leonardo presented findings from the first phase of the interviews and fieldwork, the activity was introduced. For that, a diagram with the relevant concepts and the key types of knowledge was presented (as described in Deliverable 4.6).

In addition to the printed on-site version, the Miro online platform was used to include the online and in-person participants. The hybrid format implied a pre-registration on Miro, which ensured that people became familiar with the board structure and were curious to see how it would be used it.

After introducing the structure of the activity and the overall objectives, the potential benefits of open discussion among staff were highlighted, who rarely have the opportunity to discuss issues impacting their roles. Each phase of the focus group session was then explained in detail. Table 4.7 summarises the questions for each type of knowledge.

Table 4.7. Structure of the London focus group session

Type of knowledge	1. Target Knowledge	2. Systems Knowledge	3. Transformation Knowledge
Time allocated	15 minutes	10 minutes	15 minutes
Questions	What are the expected outcomes? • Group-wide social value strategy • Connecting the top-down with the bottom-up • From Social Value to POE. Establishing learning-loops	Who should be involved and what tools and methods can facilitate the process?	What needs to happen to achieve long-term impact? (transform existing practices and introduce desired ones)
Focus	Discussing conception phase of Vila Romão, focusing on involved actors, methodologies, resources, and tools used.	• Actors • Methods • Tools	• Projects • Policies • Partnerships

The participants were familiar with each other's roles and responsibilities, which saved time on introductions, but had little experience in collaborating together. This meant that there was enough trust to talk openly and frankly about difficult situations and barriers, while also having an interest in hearing fresh opinions and occasionally opposing viewpoints.

Following various iterations of the RE-DWELL game cards, presenting a simplified format with the board—moving directly to outcomes without an initial preparation phase—felt justified. This was due to the pre-work selecting the session topic and participants sharing familiar organisational objectives and targets. Clarion's longstanding practice in measuring social value and maturing Post-Occupancy Evaluation (POE) approaches were referenced, but much of the discussion centred on what the organisation is not yet doing.

These shared core aims, which could be deemed as the establishing common ground phase, led to rapid switching between subjects and examples, with minimal time spent on explanation. This reliance on a common organisational language with cryptic references to internal challenges, personnel, or existing programmes made connections that might have been less obvious to an external observer. However, this slight obscurity was offset by a deeper level of discussion.

The elaboration of specific, topic-related questions for each knowledge level (target, systems, and transformation) helped to quickly embed the concepts in participants' minds. Nevertheless, it was essential to have two facilitators — one to steer the discussion as the focus group lead and one to act as a scribe.

4.2.4. Key insights

This local implementation highlights the complexity of considering a large organisation like Clarion that operates across fields of knowledge and practice with diverse

approaches, where understanding and creating social value collectively and linking it to POE processes can be challenging.

The following table summarises the main insights that emerged from the focus group session.

Table 4.8. Key insights from the London focus group session

Themes	Key insights
Transdisciplinary Environment as a facilitator	<ul style="list-style-type: none"> • Enabled participants to translate abstract problem statements into work-related issues • Served as an explorative tool (rather than a decisive strategic one). • Highlighted struggles while encouraging multiple viewpoints and speculation • Providing rare opportunities for open discussion on overarching issues • Allowed for the discussion of multiple facets of a complex issue in a balanced way • Supported a highly productive session, with key actions to take forward
Added value for the challenge	<ul style="list-style-type: none"> • Reinforced the willingness and the collective commitment to embed social value creation in Clarion's daily tasks • Helped to identify actions for achieving a culture shift: <ul style="list-style-type: none"> – Ensuring every staff member has a social value-related personal objective – Integrating social value into every role/job description – Increasing executive team buy-in for actions with less certain results – More acceptance of qualitative outcomes – Better sharing of insights and applying learning loops in a less fragmented, project-specific way – Understanding the connection between mechanistic POE processes and resident-focused social value generation – Raising broad range of ideas, from generating social value to energy focus and risks of inaction

The activity enabled each participant to translate the somewhat abstract problem statement into an issue directly related to their area of work. The range of ideas raised was surprisingly broad, from new ways to generate social value to concerns about where to focus energy or the risk of social value dissipating through inaction. The activity could have been more explicit about setting priorities (perhaps in the green section), so it served more as an explorative tool than a decisive strategic one.

Two strategically important conclusions were reached in the yellow (target knowledge) stage: Clarion needed to place greater emphasis on the social value generated from day-to-day activities, such as managing and maintaining its estates, rather than solely on set prices, procurement, or regeneration schemes. This reinforced some findings from the [secondment](#), in which according to interviewees, a range of the organisation's outcomes was not accounted for in the social value assessment because of the perceived

constraints of the methodology and tools used. Achieving this required a culture shift to genuinely embed these values across the business and develop the necessary methods for their assessment.

The session quickly progressed to discussing what needed to happen to achieve this culture shift (transformation knowledge). Practical actions included ensuring every staff member had a social value-related personal objective, integrating social value into every role/job description, and increasing executive team buy-in for actions with less certain results. This shift involved being less fixated on quantitative KPIs and more accepting of qualitative outcomes. There were calls for better sharing of insights and applying learning loops in a less fragmented, project-specific way. This approach involved seeing the connection between mechanistic POE processes and resident-focused social value generation. Closing this loop and understanding the golden thread of social value can help focus on activities that benefit both the residents and Clarion.

The flow of ideas naturally followed the structure of the session. There were no artificial pauses when the discussion moved from yellow (target) to green (systems) to blue (transformation) cards. Participants were willing to discuss several issues, but occasionally skipped over thoughts that would have been worth exploring further. If more time had been available, it would have been useful to revisit these discarded topics. Overall, the session allowed participants to discuss multiple facets of a complex issue in a balanced way. These types of encounters, where there is room for open discussion on issues that may not be directly related to their daily activities but have overarching implications for the whole organisation, rarely happen; and the focus group was an opportunity to explore them. Thus, the activity realistically highlighted struggles while encouraging multiple viewpoints and discussion of ideas. In addition to the two key actions to take forward, the session proved to be highly valuable (Figure 4.6).



Figure 4.6. The board after the discussion

4.2.5. Evaluation

An introductory report to sensitise the conversation and the Miro board provided in advance helped capture the interest of participants and reinforce the value of the activity. Combining the session with the findings of previous data collection was a positive reminder that Clarion had made progress in Post-Occupancy Evaluation (POE) and in measuring social value during the year of Leonardo's secondment. Furthermore, the hybrid implementation (online and face-to-face) showed significant potential for recruiting participants in the context of a large and complex organisations such as Clarion. This experience shows that it is possible to simplify the materials and the activity (compared to previous versions) while still including the content embedded in the game cards, even in a hybrid format.

The discussion was lively and free flowing, contrasting with typical internal meetings that follow an agenda and with formalised action points. The informal and speculative nature of the conversation meant that participants were noticeably reluctant to note down points on Post its. More contributions were made via the online chat function of the Teams call and the Miro platform, emphasising the need for a scribe facilitator or more breaks for participants to write down their views, plus time at the end of the session to collate the mixed sources.

The session reinforced both the willingness and the collective commitment to embed social value creation in Clarion's daily tasks to establish it as a genuinely shared culture and the driving force behind the organisation's actions. Achieving culture change requires long-term persistence and progress monitoring to prevent it from getting lost in the daily busyness of a large organisation. Re-running the session in a few years would revisit this commitment, and a final improvement to the activity would involve drawing out and articulating this kind of long-term aspiration.

4.3. Nicosia focus group session

On May 30, 2024, ESR Andreas Panagidis, supported by supervisor Nadia Charalambous, organized the focus group session “Collaborative Neighbourhood Planning” in Nicosia, Cyprus (Figure 4.7), in partnership with the Housing Association Cyprus Land Development Corporation (CLDC).

The aim of the focus group session was to identify barriers and opportunities for improving neighbourhood planning through enhanced collaboration among stakeholders. The session focused on addressing the communication gap between key actors involved in planning and maintaining affordable neighbourhoods, including the Department of Town Planning and Housing (Ministry of the Interior of Cyprus), local authorities, and the CLDC Housing Association, a RE-DWELL partner organisation. The activity took place in the Dafni neighbourhood of Strovolos Municipality, an affordable housing area that faces issues such as vandalism and a lack of stewardship of public spaces.



Figure 4.7. Nicosia focus group

The challenges identified in this case included fragmented communication and coordination among stakeholders (government, local authorities, and housing associations), a general lack of knowledge about best practices, and limited engagement in collaborative problem-solving. Additionally, the limited availability of affordable housing options exacerbated the situation. The absence of clear procedures and access to critical information, such as best practices, hindered effective knowledge sharing across the housing project lifecycle. This contributed to the scarcity of affordable housing options, particularly for individuals facing financial constraints and eligibility criteria, further deepening housing inequality and exclusion from the private market.

4.3.1. Preparation

To prepare for the focus group session, Andreas's process went through a "Connecting phase" and an "Exploratory phase" as was done in the Lisbon case. In the first phase, Andreas established a network of actors and discussed common challenges, timeframes, and the scope of the focus group session. The network was composed of the CLDC, the Department of Town Planning and Housing, and Dafni residents. The Strovolos Municipality was not able to participate.

In the "Exploratory phase", the researcher conducted a semi-structured interview with the Technical Department Coordinator at the CLDC, Charalambos Iacovou, to explore opinions, beliefs, and attitudes of the CLDC regarding current practices related to affordable housing and neighbourhood planning. The conclusion of this interview was that there is a need for better channels of communication between local authorities, the government, and the CLDC.

Andreas also promoted a preparatory site visit to an affordable housing neighbourhood built by the CLDC, with two CLDC employees, including Mr. Iacovou, to explore the challenges being discussed at the upcoming focus group session.

4.3.2. Participants

The preparation ("Connecting phase" and "Exploratory phase") resulted in the formulation of questions to explore partnerships and activities that could be part of a collaborative approach to the design and maintenance of public spaces in affordable housing neighbourhoods.

For the activity, Andreas aimed to recruit participants that were as diverse as possible, directly connected with the process of neighbourhood planning—the municipality, the housing association, the Department of Town Planning and Housing, and residents. To recruit participants, the municipality and public servants were contacted by telephone and e-mail (Table 4.9), and residents of the neighbourhood were contacted by word-of-mouth (snowball sampling).

Table 4.9. Recruitment message explaining the activity

<p>Session proposal</p> <p>We are a research team from the University of Cyprus, Department of Architecture, conducting a focus group session at the Cultural Centre of the Strovolos Municipality. We are dealing with sustainability in the neighbourhood and the participation of residents. More specifically, we are looking at the neighbourhood of the project Dafni. We will explore issues of urban design, maintenance of open spaces, and municipal-resident cooperation.</p> <p>We aim to use focus group session to investigate:</p> <ul style="list-style-type: none"> • The relationship between the Department of Planning and the local authority in the study of both enacting planning incentives and institutional barriers to new ways of encouraging the development of affordable housing and generally sustainable neighbourhoods. • The possibility of involving the municipality (off-site parking, public infrastructure, etc.) and residents (social needs, daily needs—e.g., safety, sports, green spaces) in some stages of urban planning.

A total of 10 participants were involved (Table 4.10), including a city planner, CLDC representatives, academics, an architect, and residents. The Strovolos Municipality facilitated the organisation of the event and offered the space for the activity, but none of the personnel were able to attend.

Table 4.10. List of participants including role and attendance

Type of actor	Role	No. of people
Strovolos Municipality	Organiser	--
Researcher/academic	Organiser/facilitator	2
Researcher/academic	Participant	1
City planner	Participant	1
Resident	Participant	2
CDLC representative	Participant	3
Architect	Participant	1

4.3.3. Participatory session

The focus group session began with Andreas presenting the Dafni neighbourhood and the challenges it faces, followed by an explanation about the RE-DWELL. Subsequently, Andreas presented the activity, using a board developed for this focus group session (Figure 4.8) to engage participants in a horizontal discussion, dealing with expectations and possibilities of reforming housing and planning policy and practices. To answer the challenges, the activity included cards with various actors, tools, and methods, as well as post-its (as “customizable cards”) to allow for supplementary input.

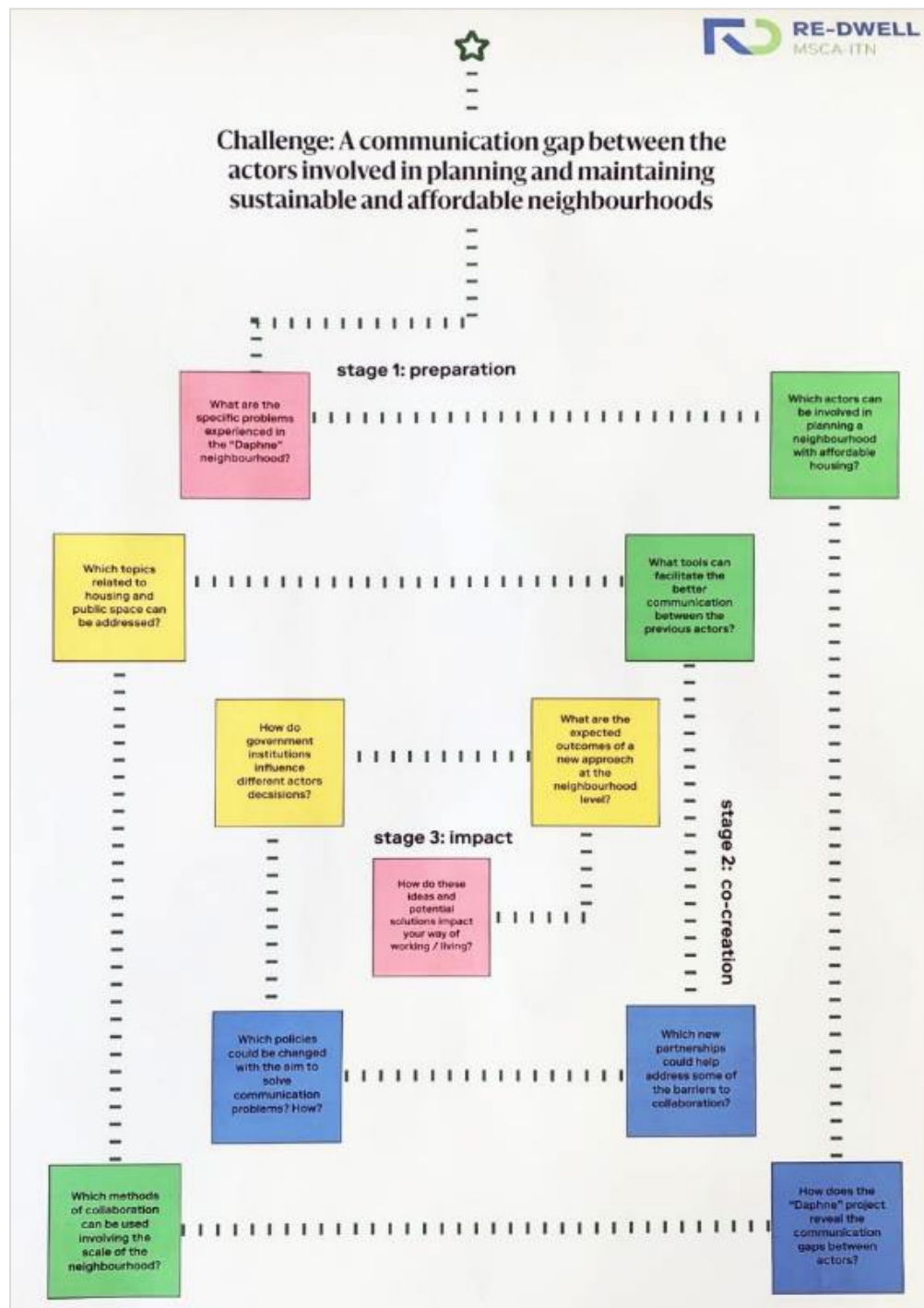


Figure 4.8. Board developed for the Nicosia focus group session

The board guiding the activity consisted of three stages: "Preparation", "Co-creation", and "Impact". Table 4.11 below details the three stages and the questions in each.

Table 4.11. Structure of the Nicosia focus group session

Stages of the activity	Stage 1: Preparation	Stage 2: Co-creation	Stage 3: Impact
Questions	<ul style="list-style-type: none"> • What are the specific problems experienced in the Dafni neighbourhood? • Which actors can be involved in planning a neighbourhood with affordable housing? • How does the Dafni project reveal the communication gaps between actors? • Which methods of collaboration can be used involving the scale of the neighbourhood? • Which topics related to housing and public space can be addressed? 	<ul style="list-style-type: none"> • What tools can facilitate better communication between previous actors? • Which new partnerships could help address some of the barriers to collaboration? • Which policies could be changed with the aim to solve communication problems? How? • How do government institutions influence different actors' decisions? 	<ul style="list-style-type: none"> • What are the expected outcomes of a new approach at neighbourhood level? • How do these ideas and potential solutions impact your way of working/ living?

The focus group session prompted a discussion about ways of sharing information and knowledge from the initial stage to the implementation of a project, including platforms for cross-learning and for developing policy and practice recommendations. Another key topic of discussion was the provision of affordable housing options—both for purchasing and renting—specifically for individuals who face difficulties accessing housing through the private sector, while still meeting financial criteria.

The activity was carried out in two rounds, each lasting approximately one hour.

4.3.4.Key insights

Table 4.12 below summarises the key insights from the focus group session and the added value for the challenge.

Table 4.12. Key insights from the Nicosia focus group session

Themes	Key insights
Group session	<ul style="list-style-type: none"> • Functioned as a platform for exchanging opinions, meeting people, and discussing problems • Allowed varied perspectives and solutions that might not have emerged in a more homogenous group • Provided a structured yet open forum
Added value for the challenge	<ul style="list-style-type: none"> • The activity fostered the involvement of different people from government, local authorities, and residents • It allowed moving the discussion from the scale of the municipality to the scale of the neighbourhood • Using of photos and maps facilitate a neighbourhood-focused approach, bridging the gap between abstract discussions and the tangible realities of the context • Including all stakeholders in a horizontal discussion leads to more sustainable and contextually appropriate solutions

Participants expressed that broader participation would have enriched the discussions and outcomes. While they acknowledged the value of the session, particularly in providing an opportunity to meet and interact with others, there was a strong consensus that the effectiveness of the focus group session could be enhanced by involving a wider range of voices.

Many participants underscored the importance of regular and sustained involvement from a more diverse cross-section of stakeholders, including both government representatives and residents in the efforts to plan and manage affordable housing neighbourhoods. They noted that the inclusion of these groups is crucial for fostering a more comprehensive dialogue and ensuring that the discussions are not only reflective of a variety of perspectives but also grounded in the realities and needs of the broader community. The participants felt that the presence of government officials would provide a direct link to policy-making processes, while the participation of citizens would ensure that the community's concerns and aspirations are adequately represented.

Furthermore, participants emphasized the importance of diversity within the group, particularly noting the presence of community members. They pointed out that the mix of backgrounds, experiences, and viewpoints among the group was one of the session's most valuable aspects. The inclusion of community members was especially significant, as it ensured that the discussions were rooted in the lived experiences of those who are directly affected by the issues being addressed. This diversity allowed for a richer and more nuanced exploration of the topics at hand, enabling participants to consider different perspectives and solutions that might not have emerged in a more homogenous group.

The group agreed that the approach taken to discuss neighbourhood problems was both innovative and engaging. They found the participatory methodology to be a refreshing and effective way to bring attention to the various issues facing their community. The participants appreciated the opportunity to engage with one another in a structured yet open forum, where they could voice their concerns, share their insights, and collaboratively explore potential solutions.

However, despite the overall positive response, the participants highlighted the need for more time to thoroughly explore and address the complex issues that were brought to the table. They noted that many of the topics discussed, such as urban planning, social inequality, and affordable housing, are deeply intricate and interconnected, requiring thus a more extensive discussion.

Moreover, the participants acknowledged the inherent challenges in addressing such complex issues within their community. They pointed out that these problems often involve long-standing practices and established attitudes, making it difficult to convince people to adopt new ways of thinking and doing things.

The group stressed that one of the biggest challenges lies in building consensus around new strategies for tackling neighbourhood problems. This involves not only convincing individuals but also navigating the diverse and sometimes conflicting interests within the community. The participants further recognized the need for ongoing education and dialogue to help people understand the benefits of alternative approaches and to foster a willingness to experiment with new solutions. As such, future discussions could benefit from a more sustained engagement process, where the community can revisit topics over time, allowing for the gradual building of consensus and the co-creation of new strategies.

One of the key lessons that emerged was recognising of the importance of shifting the focus of discussions from the broader scale of the municipality to the more localised scale of the neighbourhood. Participants realized that while municipal-level planning and discussions are essential for overarching policy and infrastructural frameworks, they often overlook the unique characteristics, needs, and dynamics of individual neighbourhoods. By concentrating on the neighbourhood scale, the discussion can become more relevant, targeted, and impactful, allowing for a deeper understanding of the specific issues that affect residents on a day-to-day basis. In addition, the shift to a more specific scale like the neighbourhood was seen as not only desirable but necessary, allowing for the identification of specific needs and challenges that might be overlooked in broader municipal-level planning.

The materials employed during the activity, which included photos and maps, were particularly effective in facilitating this neighbourhood-focused approach, bridging the gap between abstract discussions and the tangible realities of the context. These visual elements provided participants with a concrete and detailed understanding of the site in question, allowing them to engage more meaningfully with the space and its challenges.

During the discussion, participants emphasized the need for more horizontal dialogue, advocating for less top-down communication between different levels of governance and the community. Traditional top-down approaches were seen as insufficient for addressing the nuanced needs of individual contexts. A more inclusive process would ensure that diverse

perspectives are considered, leading to more sustainable and contextually appropriate solutions that truly reflect the needs and desires of the community.

Finally, participants stressed the importance of widening the scope of collaboration to include a more diversified range of stakeholders. This includes local businesses, non-profit organisations, schools, and even informal community groups. This would ensure more comprehensive and inclusive solutions. Engaging a wider range of stakeholders would also help to build stronger community ties and foster a sense of shared responsibility for the neighbourhood's future, making the implementation of plans more effective and sustainable.

4.3.5. Evaluation

After completing the session, participants were asked to fill out a short questionnaire to evaluate their experience. The data collected was then analysed to provide an idea of strengths and weaknesses of the activity, the interactions and outcomes.

One of the key strengths identified was the session served as an effective forum for the exchange of ideas and opinions. Participants appreciated the opportunity to meet with others from diverse backgrounds, which facilitated rich discussions around the issues being addressed. This collaborative environment enabled the cross-pollination of ideas, fostering a deeper understanding of the system, its problems, and the stakeholders involved through the sharing of multiple perspectives.

However, the analysis also revealed some areas for improvement. A common concern was the need for more time to address the complexity adequately. Participants felt that, while the activity encouraged broad discussions, the time available was insufficient for diving deeply into more intricate topics. This was seen as a limitation to fully exploring the dimensions that the focus group session aimed to address.

The materials provided to support the discussion were generally regarded as useful, especially in aiding participants' understanding of the site, its challenges, processes, and stakeholders. However, some participants suggested these materials could be improved. They recommended a simpler format and content, particularly at the outset, to facilitate a smoother introduction to issues at hand. A more streamlined presentation of the materials and the activity could help participants engage more quickly and effectively, allowing them to focus on the substantive discussions rather than dealing with the initial effort.

Overall, the feedback confirmed that the focus group session was to a valuable means for fostering dialogue and collaboration, although there is room for refinement, particularly in terms of time management and the presentation of materials, to better support participants in navigating complex issues.

4.4. Takeaway from the local implementations

The local implementations took place in three contexts: 1. in Lisbon, paying attention to issues surrounding a housing complex under a retrofitting process, and particularly on the challenges of coexistence between residents and construction personnel; 2. in London, discussing issues around the operation of a large housing association involving various departments and organisational levels and their concerns on connecting post-occupancy evaluation processes to social value creation; 3. and in Nicosia, focusing on the deficient communication between the actors involved in planning and maintaining affordable housing, considering matters of urban design, maintenance of spaces, and municipal-resident cooperation at the neighbourhood scale.

In order to apply the TEASH toolbox in these context-specific local cases, the structure of the participatory sessions and the material used was adapted to fit the unique challenges of each location. In common, the local implementations carried out a session in the form of a focus group (conversational session with a small group of individuals with certain needs and interests about a particular subject), using card sets based on the previous development of the game within the RE-DWELL network, adding and a board containing tailor-made questions to guide the participatory activities in discussing contextual issues around housing provision.

The tripartite knowledge acquisition categorization directly informed the questions used in the sessions. Systems knowledge shaped questions about the structures and interactions within the context, focusing on the overall complexity of the challenge. Target knowledge guided questions about goals, values, and the criteria for evaluating the desirability or acceptability of potential solutions or interventions, helping to develop a shared vision among participants. Transformation knowledge contributed to questions about the strategies and actions necessary to achieve the desired outcomes identified during the discussions.

4.4.1. Adaptations for different contexts

All local implementations benefited from a “Connecting phase” in which ESRs gathered stakeholders relevant for the subsequent focus group sessions. These networks were fundamental in the recruitment of diversified groups representing the different needs, interests, and desires of the people affected by the challenges being proposed for discussion. In Lisbon and Nicosia, the sessions also benefited from an “Exploratory phase”, prior to the focus group sessions. This additional step helped the ESRs to better understand the contexts and their challenges in preparation for the discussions, and helped sensitize the participants for the topics being considered.

In Lisbon, the tools used facilitated interactions between different levels of stakeholders that typically do not engage with one another. In addition, it provided residents with an overview of the entire process, a perspective they rarely gain. However, as laypeople, residents required special adaptations in methods and language to ensure their full integration and participation. It was noted that a better introduction to explain the process would enhance understanding and engagement.

In London, specifically within the Clarion Housing Association, the focus group session was carried out in a hybrid format (online and in person), which was desirable for a large organisation, attesting to the toolbox's flexibility. This adaptability enabled the inclusion of many relevant voices in the discussion of overarching implications for the organisation, conversations that seldom occur within such a structured environment.

In Nicosia, the session enabled a shift in focus from the city scale to the neighbourhood scale, addressing specific local challenges. Like in Lisbon, the need for a better introductory explanation of the process was identified to ensure participants fully grasped the objectives and procedures.

4.4.2. Highlights from the evaluation

Across the three local implementations it is possible to observe that the terminology was often complex, particularly for residents, and that the activities required more time to be fully effective. Differences emerged as well: in Lisbon and Nicosia, most group members were unfamiliar with each other, leading to a different group dynamic, while in London, colleagues who already knew each other experienced a new, more flexible way of working together during the activity, characterized by a free-flow approach rather than following a strict agenda. This prompted the use of a different board in London, supporting the reasoning behind this variation.

In Lisbon and Nicosia, the focus was primarily on geographical areas and scales, while in London, the emphasis was on the culture within the organisation. These differences resulted in the experience with the activity being different among the participants, with variations in how the format and materials were perceived and utilized. In Lisbon and Nicosia, where many participants were new to each other, the activity served as an introduction to collaborative problem-solving. In contrast, in London, where participants were colleagues, the activity provided a fresh approach to working together, promoting a more fluid and flexible discussion format. These insights underscore the importance of tailoring the toolbox to fit the specific needs and dynamics of each local context.

Across all sessions, the activities provided significant value by fostering a deeper understanding of both the topic and the diverse perspectives involved. However, some aspects of the activity were perceived as too abstract, suggesting a need for simplification or further clarification in future iterations. The presence and role of expert facilitators proved crucial in guiding the sessions, ensuring that discussions remained focused and productive.

In conclusion, the methods and tools applied in the participatory have proven to be a valuable and versatile means for engaging stakeholders in affordable and sustainable housing projects, offering a structured yet adaptable approach that can be tailored to the unique dynamics of each local context. The differences in focus, experience, and key insights in the three sessions underscore the toolbox's adaptability and its potential to address the unique needs of diverse local contexts. The insights gained from these implementations are helpful in refining the toolbox further, ensuring it meets the diverse needs of stakeholders while continuing to foster meaningful dialogue and collaboration.

5. Final reflections

The TEASH toolbox was developed and applied to operationalize the principles of transdisciplinarity in addressing the challenge of providing affordable and sustainable housing. It aimed to: 1. understand the complexity of the housing challenge; 2. incorporate diverse perspectives—both academic and non-academic—on housing problems, goals, and strategies; 3. bridge abstract and specific knowledge across both academic experts and practice experts; and 4. develop shared understanding and practices that contribute to the common goal of solving the societal issue of inadequate housing.

The components of the TEASH toolbox were designed to be adaptable and customizable to meet the specific needs of stakeholder groups tackling affordable and sustainable housing challenges in different contexts. This adaptation process involved providing participatory tools to foster constructive exchanges among stakeholders. Through these discussions, participants were able to collectively define the problem, set objectives, explore strategies for achieving them, and anticipate the impact on the prevailing conditions.

The active involvement of ESRs and partner organizations in implementing the TEASH toolbox has greatly enhanced the effectiveness of these collaborative efforts. Their participation in real-world settings allowed them to contribute not only to academic discourse but also to provide practical, actionable solutions tailored to address context-specific challenges. The inclusion of non-academic partner organizations in the assessment phase further enriched the toolbox's development, offering valuable insights into its application. For example, following the assessment sessions in Reading and Delft, a key insight emerged about the critical role of local contexts and the specific challenges and stakeholders that shape them.

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Annex 1 – Card configurations Reading session

This annex compiles the card arrangements made by the teams in the participatory activity in Reading. Some groups submitted various configurations of their game cards. This annex presents the latest configuration submitted.



Figure A1.1 – Round 1: Group 1



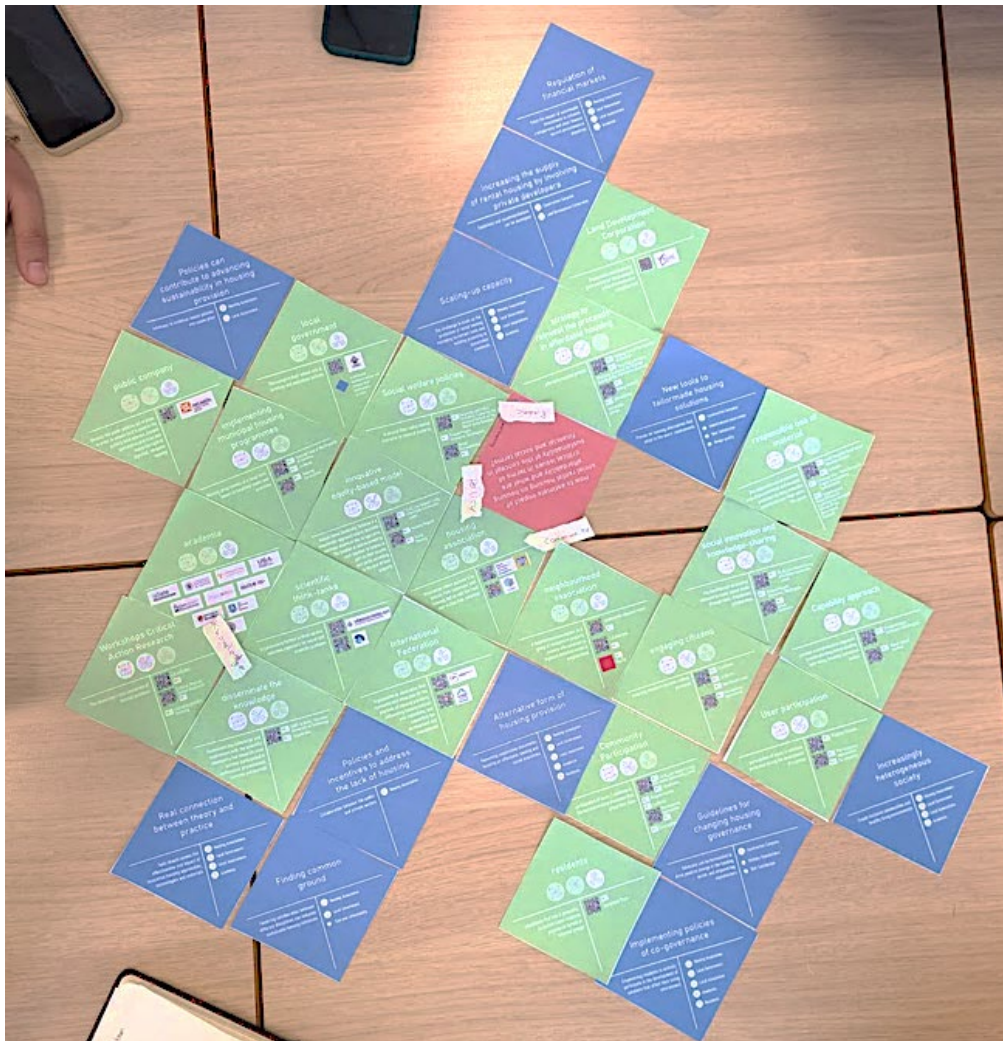
A1.2 – Round 1: Group 2



A1.3 – Round 1: Group 3



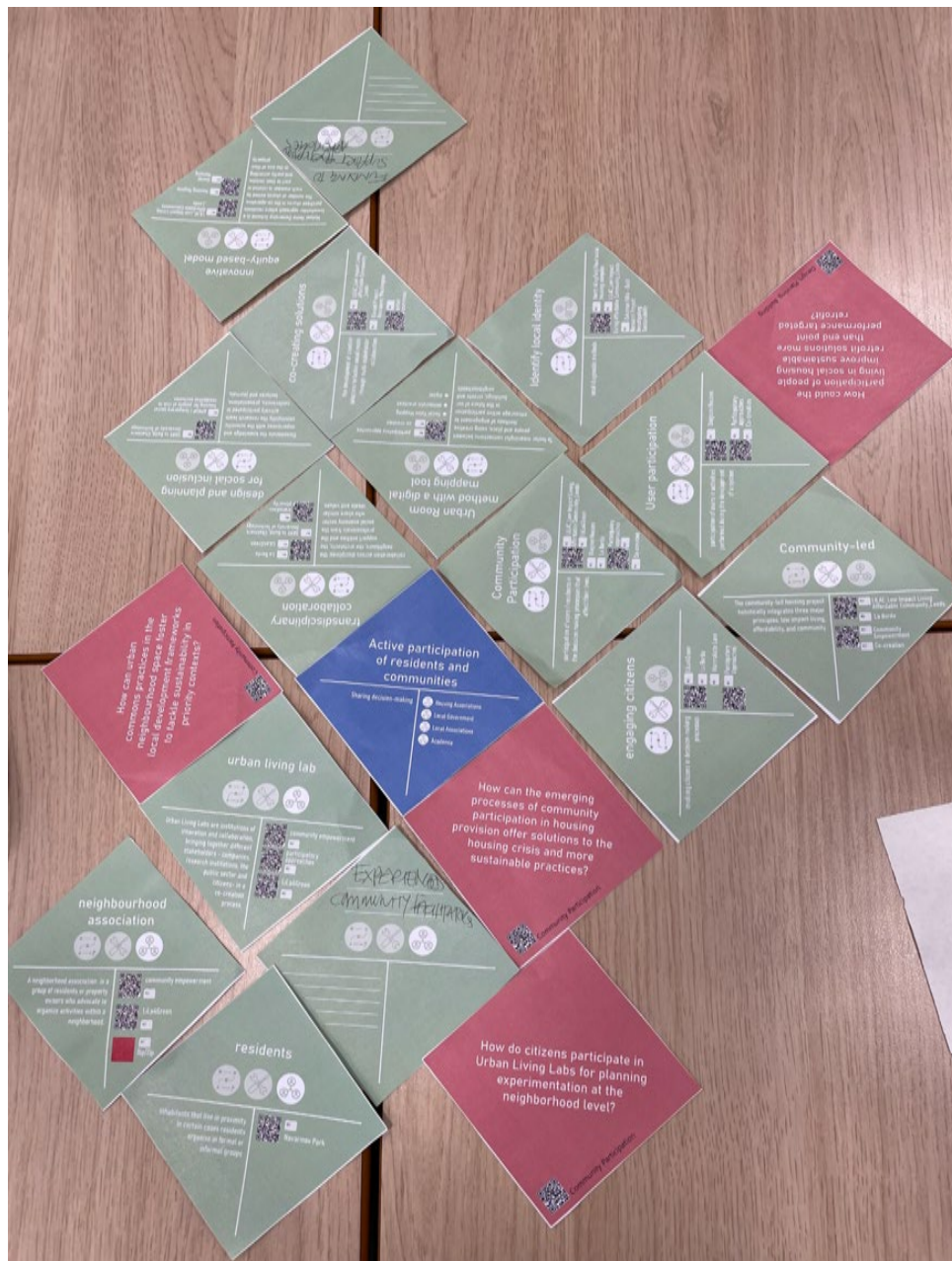
A1.4 – Round 1: Group 4



A1.5 – Round 1: Group 5



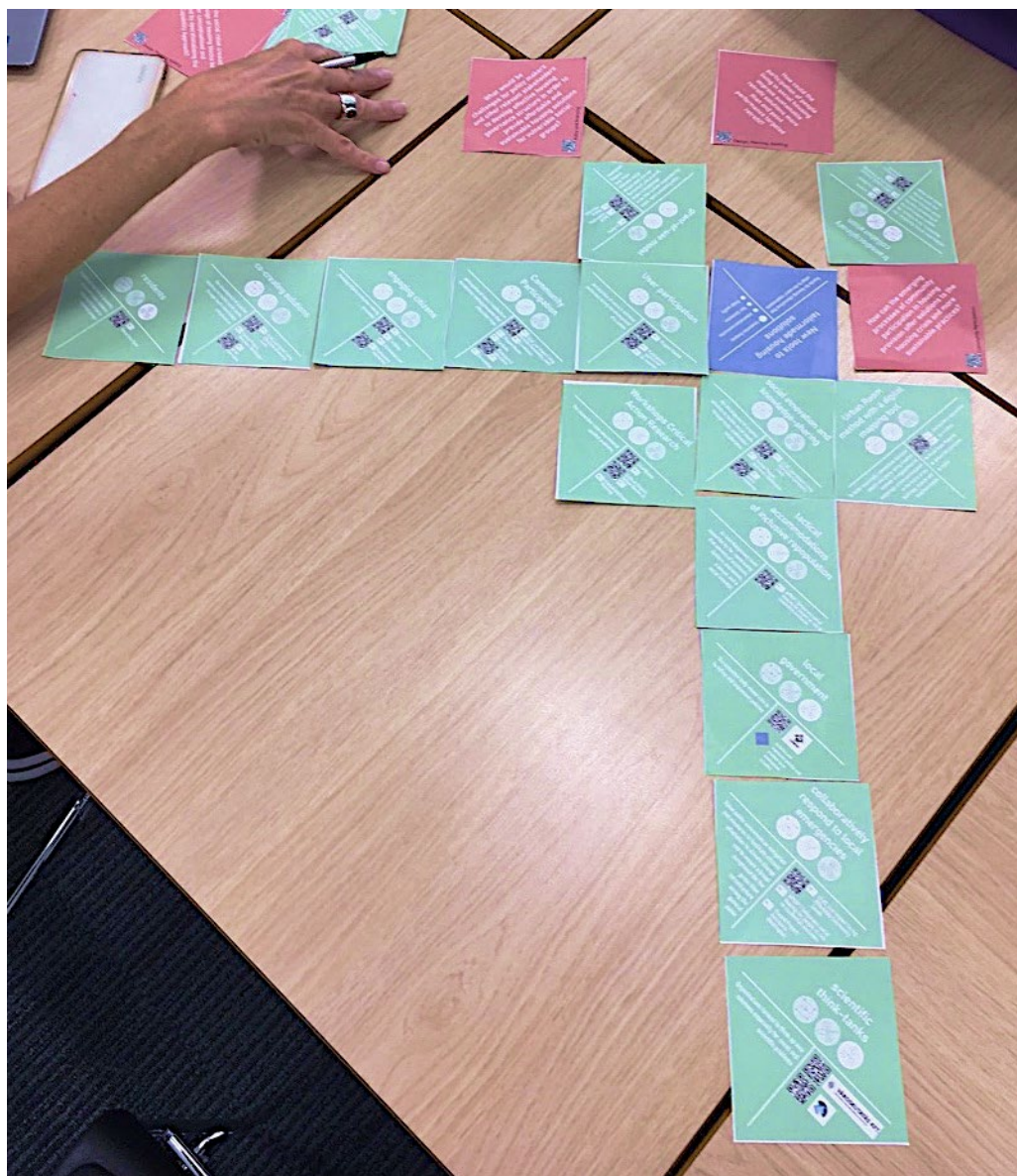
A1.6 – Round 2: Group 1



A1.7 – Round 2: Group 2



A1.8 – Round 2: Group 3



A1.9 – Round 2: Group 4



A1.10 – Round 2: Group 5



A1.11 – Round 2: Group 5

Annex 2 – Evaluation Reading session

This Annex contains the evaluation form and respective answers from the participatory activity in Reading. The information was extracted from Deliverable 3.6.

Question: Day 3 - Wednesday 5. Please evaluate "RE-DWELL Assessment Framework" session (from 1-lowest to 5-highest)

Answers	Supervisors	ESRs	Average
16	4.0	4.0	4.0

Question: Day 3 - Wednesday 5. Briefly explain the reasons of "RE-DWELL Assessment Framework" session evaluation (Open answer)

It was a useful session, I was just wondering if that could have been better organised by the three leaders giving Re-Dwell's context through state-of-the-art presentations on the three areas before/instead of presenting our research questions. Also some more context on what a framework is according to the so far research would be helpful.

The similarities between the various PhD topics are becoming far clearer - it would be interesting to see where the tensions / contradictions were?

Interesting examples, more theoretical input on "social innovation" would have been useful to support the argument.

Question: Day 3 - Wednesday 5. Please evaluate "Game session" session (from 1-lowest to 5- highest)

Answers	Supervisors	ESRs	Average
18	4.6	4.0	4.3

Question: Day 3 - Wednesday 5. Briefly explain the reasons of "Game session" session evaluation (Open answer)

The kick-off of the game with its positive and negative points was one of the most transdisciplinary moments of our network.

I think the first trial of the serious game was a total success.

The 'Game Session' was an engaging and interactive experience that provided a unique approach to engage with the framework. The session effectively combined education and entertainment, allowing participants to learn through gameplay.

Excellent case of innovation in teaching.

I would suggest instead of a second round, leave some more time for the first and a feedback session right after so that people's questions/doubts on the game are resolved.

I personally enjoyed more the first round than the second one, as the whole team was slightly more tired, and collaboration and innovation were not carried out with the same enthusiasm as in the first one. A small break or a team swap would have improved this. As mentioned in Reading, some of the cards were difficult to understand, so it is necessary to have an expert on each of the fields on the table in order to play the game to its fullest.

Not suitable to be played online. Don't understand why we're playing a game if we're short on time and the deliverables are running late.

Annex 3 – Case studies Delft session

This Annex details the case studies that were part of the TEASH toolbox used in Delft.

Case Study #1 : Retrofit of our housing stock

Presented by Natalie Newman, South Yorkshire Housing Association

All social landlords in the UK must improve the energy performance of their homes. There are various funds available to help towards the cost of this; however, the financial markets will be relied on heavily for loans. Due to funding cycles, there is a boom bust effect on the supply chain. The housing archetypes vary hugely, so the retrofit solution is different for each, as is the cost. The works can vary in terms of disruption to those living in the homes.

Policies:

Having no properties less the Energy Performance Certificate (EPC) Band C, Standard Assessment Procedure (SAP 69) by 2030. This affects roughly a fifth of our housing portfolio (~930 homes) as shown below, and aligns with Government's:

- ‘Sustainable Warmth’ strategy (2021) – which sets out the target to “ensure that as many fuel-poor homes as is reasonably practicable achieve a minimum energy efficiency rating of Band C, by 2030”.
- Heat and Buildings Strategy (2021) – which identifies that Government will consider setting a long-term regulatory standard to improve social housing to EPC band C; this may well be embodied in the ongoing review of the Decent Homes Standard.
- The Social Housing Decarbonisation Fund which aims to improve sub EPC C properties to that level.
- Achieving a net zero carbon performance for our ~5000 homes by 2050 at the latest.
- This aligns with the UK's legislative commitment under the Climate Change Act (2008) to reduce greenhouse gas emissions by at least 100% of 1990 levels (net zero) by 2050.
- Heat and Buildings Strategy (2021) – which identifies the need that “to meet Net Zero virtually all heat in buildings will need to be decarbonized”, and also that Government will consider the case for setting a date to ensure that all homes meet a minimum energy performance standard before 2050.

Projects:

- Procurement of contractors
- Citizen engagement
- Organisational buy in

Partnerships:

- Funders- Grants and Loans
- Consortia (to aggregate delivery pipeline)
- Other landlords/ homeowner

Case Study #2 : Lack of knowledge on targeted policy instruments to alleviate energy poverty

Presented by Ben Pluijmers, European Federation for Living

How to align short- and long-term measures by three levels of actors: National Government, Local Authorities and Housing Associations.

Energy poverty is mainly concentrated in Social Housing, simply because Social Housing is provided to low incomes. The main actors in this area are the National Government (income subsidies, regulations for Housing Associations, regulations housing quality), Local Authorities (Individual income aid, City planning) and Housing Associations (providing good quality homes, affordable rents). These actors have different means/tools to alleviate energy poverty that are very poorly coordinated.

Policies:

Coordination and tuning of means/ tools by the three levels of actors to effectively lower energy poverty, using an example project.

Projects:

Design of an integrated approach towards an existing residential area with (approximately 250-500 homes) of a rather low housing quality and a high level of energy poverty.

Partnerships:

- Ministry of Housing
- Municipality
- Housing Association
- University/ consultants

Annex 4 – Evaluation Delft session

This Annex contains the evaluation form and representative answers from the participatory activity in Delft.

Evaluation questionnaire

Question 1: A first purpose of the RE-DWELL Assessment Framework is to aid stakeholders involved in affordable and sustainable housing in finding strategies and solutions for their challenges in practice.

The questions put forward by me should have been more specific. Reality is even more complicated than assumed. I would like to turn the case into a real project. Involvement will be complicated, but necessary.

The brief for the practitioner. A real-life case. A problem. I wondered if greater clarity was required to give the participants what they needed. But for this group – that was not the case.

Complexity of decision-making process having in mind involvement of respective stakeholders.

I would have liked to sit with the group and listened intently. The conversations I overheard were really fascinating. The richness in this exercise for me, was there.

Opening doors to another knowledge. Help navigate solutions.

Discussion tool. Active participation with a topic/problem. Hearings others' views and at times misconceptions (which was also fascinating). Teasing these out with internal team for example would be invaluable.

Knowledge transfer: links. Case studies. Examples from elsewhere. Learning lessons. Richness to discussions.

Help organise: value in my team using it, to them to look up and make considerations during project inception. I have a team of project managers who are steeped within detail.

Wasn't it a game – who wins? How do you know how you have finished? What's the incentive? How engaging is it?

Question 2: A second purpose is to get ideas for (new) research directions and questions. Researchers what were your main takeaways from today's play of the game?

Need more references.

There are lots of challenges not covered by our proposed challenges, such as 'legacy' presented by Natalie from SYHA

We realised that methods are very research-oriented, and we had a hard time to fit the methods into the framework.

That I don't know what a framework, I don't understand what the game is for, and I have a lot of interviews to transcribe and code that I should be focusing on.

Relevant methods and tools and how these inform research and residents engagement in housing provision. We felt that bottom-up approaches are missing.

We realised that some of the methods were too academic and less applicable in real-life challenges.

It would be more beneficial to have the stakeholders around the table to help make some of the cards more concrete as some became a bit abstract.

Share definitions among disciplines/contexts is a long process.

Question 3: Which new elements of the framework (e.g. new “Challenge”, new “Actors”, new “Methods”) or descriptions of existing ones (e.g. reformulating a “Challenge”, enhancing a “Topic”) have been discovered?

Methods are too academic. No needed here.

“Interdisciplinary collaboration” as a method might be already implied in the use of dimensions (so could be omitted).

Still don't understand the basic working principles of the game.

Expand the number of actors (first and second level).

We proposed a new level, City.

Institution could be a level or a dimension. “Housing unit” and “home” missing as levels. Finance missing, this is different from economics.

The Regional/city level missing from the dimensions.

Maybe “instruments” could replace “tools” because right now there is a confusion between methods and tools.

Sometimes we wanted to use a card, but the explanation on the back was confusing.

Confusing mix of cards in each colour (actors mixed with methods etc).

Instead of knowledge we have to talk about “capacities”.

Question 4: What are the main lessons learned by individuals in the team?

Very confusing process, much more development needed. Main issue is many overlapping categories which in themselves are not self-explanatory. It is not possible to anticipate the challenges which stakeholders may present - is there any point in cards already having defined challenges which might not be relevant?

Discussion was stimulated. Good way to combine knowledge and learn about the complexity of a challenge. However, too complex, overlap: What's different between methods (higher level) and tools (lower level)? Terminology: what's different between governance and institutional (compulsory regulation for everyone)? What does dimension mean: disciplinary expertise needed? Expertise of people that need to take action?

The guideline was helpful, but more clarifications could be helpful, particularly the meaning/differences/links between actors, levels, methods, tools, etc.

Question 5: What is missing in the game?

Nothing. It is too big already.

A purpose, an audience, a direction ... Easier to focus on what we do have: some very nicely printed cards.

Possibilities to go beyond what is on the cards or merge cards.

Remove duplicates and use a less complicated terminology.

There are too many options and categories that for the purposes and scope of the game can be seen as repetitive and not very insightful. E.g., "tools" were more thought-provoking than "methods". The number of possible options should be purposely reduced to encompass the more relevant and innovative aspects of the game.

Other actors as residents, inhabitants, local associations, companies...

We discussed that it would be beneficial to link the blue cards to case studies were this has been implemented, as in real-world practice it would be easier to understand how this has been applied.

A more focused discussion? For example, are dimensions needed (they return later as interdisciplinary cooperation). More naturally understandable framework terminology.

Facilitator and guidelines / what are we trying to achieve? what is the scope and output. Fun element (e.g., opposing positions through roles / distribution of cards between the members/discussion in rounds etc.) too for academics - roleplaying between different heterogeneous actors.

Would make sense to be process-based and not proposed any prescribed terms. For example, if many stakeholders came to the table and brought up an issue, such as "legacy", all actors can take turns to say what this means to them.

Some inputs on the learning processes would be useful to better steer the process (e.g., what participants should be attentive at, how to engage in the discussion – i.e., redefine the problem in order to understand what the different participants have sought from the presentation, what experience, knowledge, background they have on the discussed issues). Some collaboration techniques could be useful.

A common understanding should be agreed upon, followed by steps towards co-created solutions.

Lines on the back to encourage new definition of the cards;

- *One-page manual text next to the cards explaining or reminding the rules of the game;*
- *Something to mark the “main” challenge;*
- *We need a bigger font and an icon for the subcategories;*
- *Indication of how much time should be spent per colour card, or at least a recommendation to end up with enough time to discuss the solutions, as these are the cards that our partners are most interested in;*
- *Something to bring together what we discussed – a form for the final result;*
- *Something that the people can keep after the end of the game;*
- *Maybe a board on the table, so it is easier who to play the game / the steps.*

Partly reality, more real fact and figures talking about the solutions.

Other comments

Is the game the framework? Is this game overcomplicated and underdelivering?

The cards need a context to become meaningful. The purpose of the participatory activity is precise to create that context where these terms (and their relationships) become meaningful, in a particular setting. The purpose of the participatory activity (i.e., game or the like) is not to provide solutions, but allow participants to broaden their knowledge, to find a shared understanding of the problem at stake, to define the problem. We need to distinguish between the framework as structure to gather the insights coming from the research projects, and the activities to bring this knowledge to practice.

We didn't get to finish playing the game. Who the project is aimed at and what is the objective should be clear from the beginning.

Often, the content of the different cards overlaps which makes it difficult to make clear choices. Having the option to merge cards, or make new cards altogether, would make the process more flexible.

There are many cards, with too many possibilities of being related and interpreted. It is necessary a strategy to select the relevant ones and focusing the discussion around them.

The current state of the framework is too-open ended; it needs to become more contextualized in a “real” setting, with “real” actors.

Because actors (such as residents) mainly come in the last stages (methods, actors), the approach runs the risk of being a bit top-down. To prevent this, it would be good to play to game not only with researchers but also with end-users, or maybe with various kinds of stakeholders in one group.

Much of the content is clearly positioned from an academic standpoint.

In future iterations of the game, industry partners should be asked to propose things that might be missing. So, we need to reduce a lot of reiterative concepts but also include more practice-based knowledge.

Too many card types add unnecessary complexity (e.g. the yellow cards are touched upon anyway when discussing the actors etc.). The discussion remained at a general level not reaching specific conclusions.

If the game is played by residents, inhabitants, the words on the cards will have to be simplified to be understood.

Too complex, after levels, there was the urge to move on to actors that could be involved. Case study too context specific (public banks)?

Throughout the discussion, differences in national context played a role. How to deal with this is an important challenge. One way to tackle this, could be to present the cases in the forms of vignettes rather than national cases.

Explanations on the back of the cards are not read. Maybe it would be more useful for participants to be able to write their interpretation directly on the cards, instead of creating new cards.

All the terms printed in the cards could belong to another category: a “policy” could be a “tool” in a particular context. Discussing the meaning of terms in the real application contexts is fundamental; a participatory activity could start by putting the key terms on the table and ask participants to define it.

Playing of the game could be recorded to understand the construction of common social representations of the gamers.

We should be looking at references to bring in input from already tried examples, with diverse approaches. 2 examples are: Commonsopoly and Do Neo Nazis eat Kebab?

Annex 5 – Evaluation Barcelona session

This Annex contains the evaluation form and representative answers from the participatory activity in Barcelona.

Evaluation questionnaire

Question 1: Does the RE-DWELL Framework assist stakeholders involved in affordable and sustainable housing in identifying strategies and solutions for their challenges in practice?

Maybe. The framework could help Ceraneo to start the dialogue with the relevant stakeholders and identify potential tools and methods for collaboration. This could then lead to a common understanding that could potentially lead to the result, which is a policy reform and distribution of responsibility between the relevant actors.

Yes- it can offer a useful process to guide and assess a problem and organising and clarifying complex issues and identifying all the stakeholders who can take part to discuss the issues

It depends. Consideration must be paid to the type of participants involved, the goal and the outcome.

Question 2: Which new elements of the framework (e.g. a new “Challenge”, new “Actors”, new “Methods”) have been discovered during the game?

CSOs, Universities,- interdisciplinary collaboration, co-creating, focus groups

New challenge: Rising level of homelessness; new actors: ministries

Challenge: "Although there are vacant buildings at degrading neighbourhoods, there is a lack of regulations and mechanisms to access them. "

Actors "Network (e.g. housing cooperative network"

Tools/Methods "Mapping", "Roadmap", "New consortium"

We identified actors could be defined as blockers or enablers to the process to solve the problem

There could a hierarchy of actors and their involvement in a process

Actors: Tenancy; Housing providers; EU government; Civil organisations and associations; Policymakers and Regulators;

Methods: Lobbying.

Levels, European level was discovered,

As a method cross-sector collaboration

Question 3: What have you learned from each other during the interaction?

Academics sometimes disagree with each other but eventually find a way to add knowledge

Our interdisciplinary team had unique understanding of the problem that helped us find potential methods and tools where individually we would not find them.

Valuable exchange of information on the process; understanding of the supporting methodology of the participatory process we are using

There are many solutions to a problem - there are different solutions culturally about roles, actors and how to deal with a problem.

There is a lot of common ground that we identified sharing experiences. A fair representation from all players is needed.

Too many academic terms particularly the word discipline from Pere's perspective.

Thorough understanding of local context (local and regional government, policies and funding).

Having complexity could be useful, and to address this complexity, multiple solutions emerge.

Question 4: What did you miss?

More flexibility in going from 1-8

We missed explanation (written on the poster) that “Levels” and “Dimensions” need to be included in the first step, and we have first decided on only one, which was the main challenge. We failed to capture “Objectives” to be translated into the “change” part, as we invented a “change” card that had not much to do with the “Objectives” written by Ceraneo. We also missed a person from Ceraneo, Sostre Civic, and more variety of partners.

The board could offer suggestions about how to order responses to provide subgroups or categories on the board steps 4 & 7.

Time.

The absence of mutual understanding between the European level and the on-ground housing provision.

Question 5: Other comments

Participants missed the common context on the main issue and on Ceraneo and their activities.

The union of theory and practice, how academia can contribute to practical solutions; this action provides a space where theory and practice can meet.

You cannot carry out this kind of participatory activities under time pressure.

The physical setting for this participatory action facilitated the activity

We need to understand the proposed process as seen on the board. The board could be something else in another setting, printed in a larger paper.

There could be a rule about how many cards should be placed on the board to focus the conversation. The empty cards are helpful, but their use could be limited.

A short set of instructions could be on the board as prompt.

We missed the presence of the PO during the first half of the activity. It is impossible to carry out the activity without the PO.

The activity is a bit complicated and needs more time to complete.

More time is needed for the game.