

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101036640.

SHARED GREEN DEAL Arena guidelines

Designing translocal, inclusive spaces for co-creation to achieve the EU Green Deal



Giorgia Silvestri Aniek Hebinck Timo von Wirth Wouter Mulders

May 2022

SHARED GREEN DEAL Arena guidelines

Designing translocal, inclusive spaces for co-creation to achieve the EU Green Deal

May 2022

Suggested citation

Silvestri, G., Hebinck, A., von Wirth, T., Mulders, W., 2022. *SHARED GREEN DEAL Arena guidelines: designing translocal, inclusive spaces for co-creation to achieve the EU Green Deal.* Cambridge: SHARED GREEN DEAL.



Giorgia Silvestri* Dutch Research Institute for Transitions, The Netherlands



Aniek Hebinck

Dutch Research Institute for Transitions, The Netherlands

Dutch Research Institute



Wouter Mulders

Timo von Wirth

for Transitions, The Netherlands

Dutch Research Institute for Transitions, The Netherlands

*<u>silvestri@drift.eur.nl</u>

Executive summary

Green Deal policy ambitions. To support the implementation of the EU Green Deal, the SHARED GREEN DEAL project aims to stimulate shared actions across Europe at the local and regional level to generate lessons and knowledge about local and regional implementation in the six streams: clean energy, circular economy, efficient renovations, sustainable mobility, sustainable food, and preserving biodiversity.

All Green Deal policy ambitions address systemic unsustainabilities in complex and coupled socio-technical and social-ecological systems. Deep transformations of human practices in these systems require all societal actors to become included in the deliberations and actions towards more sustainable futures. Scientific or policy attempts alone will not suffice. Designing inclusive and legitimate processes of actor involvement remains a challenge.

This report delivers guidelines for designing an interactive multi-actor process to co-creating transformative pathways to achieving the EU Green Deal. Our design approach builds upon principles of 'Transition Management' to explore the challenges, innovative interventions, trade-offs as well as co-benefits across the six different Green Deal streams with a diverse group of actors.

The process follows a set of guiding principles derived from theories of transdisciplinary and action research. These address how to convene a diverse coalition of the willing, to build upon insights from sustainability transitions research, to create a safe-enough space for critical reflections, to ensure strategic insights through a forward-looking perspective, as well as to develop concrete steps and generate action-oriented knowledge during the arena process.

Four key steps are guiding the selection of methods for this process:

- 1. Problematise: problem structuring and analysis of dynamics
- 2. Envision: define principles of desired, shared futures
- 3. Co-create action: develop an action agenda with strategic pathways
- 4. Reflect: explore the trade-offs and synergies actions between pathways

A coherent facilitation approach guarantees the process being carried out in a series of online and hybrid events over a period of three months in 2022.

SHARFD



List of contents

| Ex | ecutive summary | 3 | | | |
|---------------|--|----|--|--|--|
| Lis | List of contents | | | | |
| Lis | List of figures | | | | |
| List of boxes | | | | | |
| Lis | List of tables | | | | |
| 1. | Setting the scene | 5 | | | |
| | 1.1. The EU Green Deal | 5 | | | |
| | 1.2. The SHARED GREEN DEAL project | 6 | | | |
| | 1.3. Objective of the deliverable | 7 | | | |
| 2. | Sustainability transitions | 8 | | | |
| | 2.1. Complex, coupled systems | 8 | | | |
| | 2.2.Management of Sustainability Transitions | 8 | | | |
| | 2.3.Transition Arena approach | 9 | | | |
| 3. | Creating spaces for transdisciplinary, action-oriented | | | | |
| engagements1 | | | | | |
| | 3.1. Transdisciplinary knowledge production | 10 | | | |
| | 3.2.Six principles for design | 11 | | | |
| | 3.3.First steps in the design | 16 | | | |
| 4. | Acknowledgements | 25 | | | |
| References | | | | | |
| | | | | | |

List of figures

| Figure 1. The European Green Deal5 | |
|--|--|
| Figure 2. How SHARED GREEN DEAL will target and stimulate change in the 'meso-level', in order to target 'micro-level' and 'macro-level' change 6 | |
| <i>Figure 3.</i> The six principles that will be used for the design of the SHARED GREEN DEAL Arena | |
| <i>Figure 4.</i> The X-curve framework which visualises the relation between the patterns of build-up and breakdown in transitions | |

List of boxes

Box 1. Transdisciplinary engagement in SHARED GREEN DEAL10 **Box 2.** Tips to take into consideration when facilitating a hybrid event .. 22

■ List of tables

Table 1. Diverse dimensions for participant selection
 16



1. Setting the scene

Societal transformations are needed to deliver on the European Union Green Deal policy ambitions. To support the implementation of the EU Green Deal, the SHARED GREEN DEAL project aims to stimulate shared actions across Europe at the local and regional level to generate lessons and knowledge about local and regional implementation in the six streams: clean energy, circular economy, efficient renovations, sustainable mobility, sustainable food, and preserving biodiversity. This SHARED GREEN DEAL report delivers guidelines for designing an interactive multi-actor process to co-creating transformative pathways to achieving the EU Green Deal.

1.1. The EU Green Deal

Overcoming the global challenges of climate change, environmental degradation, and social inequities requires profound societal transformation. The European Commission's (EC) Green Deal is a policy communication developed in response to these societal challenges and it sets out to transform the European economy to being more resource-efficient, sustainable, and inclusive. The goal of a transitioning to a net-zero emission economy by 2050, in which economic growth is decoupled from resource use, is central to this communication that will impact on the well-being and health of citizens and future generations. At the same time, the European Green Deal acknowledges that transitions inevitably include 'losers' of change, therefore stressing the need for a just and inclusive transition (EC 2019).

Figure 1. The European Green Deal (EC 2019)



and fostering innovation

Social sciences & Humanities for Achieving a Responsible, Equitable and Desirable GREEN DEAL

To achieve these highly ambitious goals, the EC has defined a number of interconnected policy areas (Figure 1) that include actions for climate, environment and oceans, energy, transport, agriculture, finance and regional development, industry, and research and development (EC 2019). Achieving these goals demands an integrated communication to rethink existing and develop new policies in support of more sustainable practices in energy, food, mobility, biodiversity, industry, housing, and finance. As these systems are interlinked and mutually reinforcing systems, attention needs to be paid to potential trade-offs between the sustainability objectives.

While this ambitious policy communication is a leading effort in integrated sustainability policy, policies should still remain aligned with and applicable to the many diverse local contexts that Europe holds. This not only because each country and region have their own cultural, biophysical, and institutional context, but also because transitions in these eight policy areas might be at a different stage, going at different speeds, or might use a different entry point to address the underlying sustainability challenges (Heyen et al., 2020; Pianta & Lucchese, 2020). In sum, understanding how these European-level policies unfold at the local and regional scale is crucial to the success of the EU Green Deal.

1.2. The SHARED GREEN DEAL project

To support the implementation of the EU Green Deal, the SHARED GREEN DEAL project stimulates shared actions across Europe at the local and regional level and use these to generate lessons and knowledge about local and regional implementation. The project explores actions linked to topics that are at the core of the eight EU Green Deal policy areas (Figure 1). In this, the project focusses on stimulating 'middle range' (or meso-level) changes that can bridge changes in individual behaviour (micro-level) and broader societal change (macro-level) (Figure 2). SHARED GREEN DEAL targets the 'meso'-level by exploring change at dimensions that influence the 'micro' and 'macro' level, such as visions, knowledge, strategies, innovations, narratives, and cultural values.





The project assesses the 'meso'-level by initiating 24 'social experiments' in six specific priority topics across Europe: Clean Energy, Circular economy, Efficient Renovations, Sustainable Mobility, Sustainable Food, and Preserving Biodiversity. Using Social Sciences and Humanities insights on how change unfolds in these dimensions, the project aims to stimulate and further change towards the EU Green deal at a local scale through these social experiments. In addition, by exploring six specific priority topics, the SHARED GREEN DEAL explicitly explores how these complex systems are interlinked and how changes across these topics could add up to addressing sustainability challenges and further the EU Green Deal.

1.3. Objective of the deliverable

This report provides insights into the design of a multi-actor process to co-creating the transformative pathways to achieving the EU Green Deal, while building on transition theory. In the SHARED GREEN DEAL project, we build on the Transition Management approach to explore the role of innovative interventions across the six different streams with a diverse group of actors in terms of their expertise, nationality, gender, and so on. The report sets out guidelines for the design of such an interactive multi-actor process dealing with a high level of complexity with the ambition to provide actionable output. It does not set out practicalities and agendas of the SHARED GREEN DEAL Arena that takes place in the project. Instead, it outlines the underlying rationale for this multi-actor, co-create exercise and highlights principles to ensure its success.

The intended audience of this deliverable is therefore any person who has the aim to further complex sustainability challenges in a multi-actor and co-creative setting. In other words, it can also be applied to other sustainability challenges, as this document sets out the broader theory behind the sustainability transitions thinking and provides detailed insights into how to design and facilitate an inclusive and translocal space. It will also give practical tips and tricks from earlier research experiences, such as the TRANSIT project¹ and the UrbanA project².

¹ The Transformative Social Innovation Theory (TRANSIT) Project was a FP7 funded EU project that featured translocal engagement with diverse grassroots initiatives. This project contributed to a better understanding of empowerment of social innovation on a translocal scale. <u>www.transitsocialinnovation.eu</u>

² The Urban Arenas (UrbanA) project was a H2020 funded EU project that included translocal engagement between urban change makers from cities across Europe. It brough about key lessons on how to create a translocal space for acceleration of just sustainable transitions. <u>www.urban-arena.eu</u>

2. Sustainability transitions

All Green Deal policy ambitions address systemic unsustainabilities in complex and coupled socio-technical and social-ecological systems. Deep transformations of human practices in these systems require all societal actors to become included in the deliberations and actions towards more sustainable futures. Scientific or policy attempts alone will not suffice. Designing inclusive and legitimate processes of actor involvement remains a challenge.

2.1. Complex, coupled systems

Navigating societal change towards a more sustainable direction inevitably is a transdisciplinary endeavour: it requires actors from different scientific domains as well as diverse societal actors to cooperate and explore appropriate means to addressing a shared problem (Lang et al., 2012). Today's sustainability challenges are characterised by being rooted in complex and coupled socio-technical and social-ecological systems. Because of that it can be unclear what systems they connect to, how they can result in impacts across systems, what actors are affected and how, and what pathways to choose to move forward. In recent years, there has been an increasing use of transdisciplinary approaches to develop knowledge with the objective of addressing these sustainability challenges. Going beyond the notion that knowledge should be 'descriptive' or 'objective', it takes a more normative and pragmatic course by seeking to influence and steer these challenges towards sustainability (Norström et al., 2020). These transdisciplinary approaches build on the notion that diverse types of actors, across systems, sectors and levels, are needed to find place-based approaches that can address 'real world problems'. Actors from policy, academia, and society will need to collaborate in developing, implementing, and reflecting on sustainability actions that can enable the deep transformations of human practices towards more sustainable futures. In doing so, these approaches explicitly argue that science alone cannot deliver 'solutions' for societal challenges (Wittmayer & Schäpke, 2014; Fazey et al., 2018; Caniglia et al., 2020) and instead argue that action-oriented knowledge emerges from a process in which action research and capacity building are entangled through the use of transdisciplinary co-creation (Lang et al., 2012). In other words, these processes of knowledge that is action oriented.

2.2. Management of Sustainability Transitions

In responding to the increasingly widely understood need for transdisciplinary and co-creation approaches, the field of Sustainable Transitions research has flourished. This body of research aims to address persistent sustainability and social challenges by gaining a better understanding of the dynamics of societal change in diverse systems (Loorbach et al., 2017). Building on analyses of how past transitions have occurred, this field has developed detailed understandings of how radical societal change comes about (Geels, 2011). While some of this work is more theoretical in nature, the use of sustainability transition and transformations thinking to foster action-oriented knowledge to address transitions-in-the-making is growing rapidly. For example, through the use of frameworks such as the Transition Management framework and the X-curve framework (Loorbach et al., 2017; Hebinck et al., 2022), the development of new forms of transition governance are supported.

Transition Management has been widely used for facilitating the co-creation of knowledge and social learning among diverse societal actors. This co-creative approach has been co-produced by researchers, policymakers and other practitioners and applied in diverse contexts, across different domains, regions, cities,

SHARED

and neighbourhoods. For example, in the governance and policy domain it has been used to accelerate sustainability transitions in public energy policy in (Kemp & Rotmans, 2009), in mobility and infrastructure transitions (Frantzeskaki & Loorbach, 2010), or climate governance (Hölscher et al., 2019). It aims to provide strategic stepwise insights on how to achieve a long-term vision, by setting out four different governance activities: strategic, tactical, operational, and reflexive (Roorda et al., 2014; Geels et al., 2019). A transdisciplinary approach is crucial in this process, as the involvement of a diverse set of actors, that are involved in the system or sustainability challenge in question, are essential to defining the problem and creating strategic, tactical, and operational insights.

To enable the necessary transdisciplinary dialogue between diverse actors, the format of an 'Arena' was developed. In the next subsection we explore the Transition Arena in more detail and why it is useful in the context of the accelerating transitions towards the EU Green Deal.

2.3. Transition Arena approach

In Transition Management, the 'Transition Arena' is a specific participatory method to engage people in a collective process of understanding, learning, visioning, and experimenting around specific societal transition challenges. The Transition Arena approach is of particular interest to the SHARED GREEN DEAL project, because of its stepwise approach to learning and experimenting in a sustainability transitions context, enabling a reflexive approach to shaping sustainability governance. It does so by focussing "on frontrunners, the objective of radical innovation, and [a] selective participatory approach" (Loorbach, 2010:p.162). By using this approach in the SHARED GREEN DEAL project, we aim to co-create strategic insights on how diverse actors across Europe can link innovative practices to the Green Deal ambitions.

A Transition Arena can be described as a structured space for a group of change agents to critically reflect on current societal systems, to problematise current structures and practices of an unsustainable status-quo, while stimulating a change in perspective towards a more sustainable future state (Loorbach, 2010). It provides a "setting in which different perspectives, expectations and agendas are confronted and discussed, and synergies are identified" (Roorda et al., 2014:p.23). This space

is of temporary nature and is made up by a series of meetings during which the diverse change agents meet to critically reflect on a shared problem. The Transition Arena approach provides an informal, yet structured process to co-create a desired (sustainable) vision, and to define actionable, strategic steps to achieving this vision by outlining specific actions and initiating experiments (Loorbach, 2010). The Transition Arena process aims for two key outcomes. First, the formation of a group of actors that are willing to act as ambassadors for change, by linking the radical, innovative ideas that emerged in the co-creative process to their daily practices and to engage with their social networks on the matter. Second, this process should result in a set of concrete steps, or a transition agenda, that provide strategies for the transformation of current unsustainable structures, cultures, and practices (Roorda et al., 2014).

The concepts and methods are in a constant state of development, being continuously adapted and extended based on these experiences and the accompanying explorative and design-oriented action research. The various iterations and adaptations that the arena approach underwent were to ensure it was applicable in diverse contexts (Schipper et al., 2019; Hölscher et al., 2019) and that it can explore sustainability challenges in a translocal setting (Avelino et al., 2020).

3. Creating spaces for transdisciplinary, action-oriented engagements

Transdisciplinary knowledge production is argued to be crucial for the (co-)creation of action-oriented knowledge. This section delivers guidelines for the design of an interactive multi-actor process. It presents six guiding principles that are derived from theories of transdisciplinary and action research, which form the foundation for the design of transdisciplinary, action-oriented spaces. This is followed by several more practical insights from previous experiences on how to create and facilitate this space.

3.1. Transdisciplinary knowledge production

Sustainability challenges always involve a range of different stakeholders, who each have diverse backgrounds, experiences, and might even come from different geographical contexts, resulting in different needs and 'stakes' in the matter (Lang et al., 2012; Brandt et al., 2013; Caniglia et al., 2020). The convening of spaces that can facilitate transdisciplinary engagements between science, policy and societal actors is key for addressing sustainability challenges in complex and coupled socio-technical and social-ecological systems (Pereira et al., 2020; Hölscher et al., 2021). Departing from this perspective, the SHARED GREEN DEAL project builds on transdisciplinary engagement and research to develop knowledge and action that are able to support the EU Green Deal (Box 1).

Box 1. Transdisciplinary engagement in SHARED GREEN DEAL

Engagement with actors from across different systems, levels, and sectors is an important part of the SHARED GREEN DEAL project. The social experiments that are at the core of the project aim to explore and address sustainability challenges and to further action towards the EU Green Deal. Beside approaching the design, implementation, and analysis of the social experiments in a transdisciplinary manner, by building on teams consisting of academic partners and societal groups that work in the topic areas, the project will also gather input from a wide group of stakeholders regarding the starting point of the work. This will help ensure that the designs of the experiments have societal relevance and address societal concerns and sustainability challenges. Therefore, the project starts with a transdisciplinary assessment of the six priority topics and a co-creation of strategic steps towards achieving the European Green Deal ambitions.

Furthermore, the SHARED GREEN DEAL will explore the state of transition of each of the priority areas in a multi-actor setting, followed by co-creation of pathways to achieving the European Green Deal. Insights from this meeting will be used to set the scene for the broader project, but also directly feed into the design of the social experiments that will take place in the years to follow. This approach will allow for the generation of lessons through the social experiments, which provide valuable insights on how Green Deal policy could be applied at the local or regional scale, thereby supporting more effective policy development.

Addressing sustainability challenges in a transdisciplinary manner, thus calls for a space in which these diverse actors can share their knowledge and experiences, outlining more clearly what problem needs addressing and what visions people have for the future (Norström et al., 2020). Such transdisciplinary, reflexive dialogue in a co-creative setting can provide a better understanding of how the system functions

SHARFD

in 'the real world', how it differently affects people in the system, and how people envision their desired system (Schäpke et al., 2018; Fazey et al., 2018).

Such spaces are also called 'transformative spaces' (Pereira et al., 2020:p.161), because these spaces are often convened with the specific aim to empower actors in furthering change towards sustainability (Avelino et al., 2019). Beside their potential to create new types of knowledge by bringing actors from across the system together, they also provide the possibility to forge new connections, networks and collaborations between stakeholders belonging to different societal domains (Loorbach et al., 2020). However, convening a transformative space that can enable dialogue, reflection in action, and reflexive learning' requires considerable effort.

3.2. Six principles for design

There are various methods to designing 'transformative spaces', rooted in diverse scientific disciplines: such as the Transition Arenas originating from Transition Management research (Loorbach, 2010), or the Transformation-Labs (or T-Labs) as often used in social-ecological systems research (Charli-Joseph et al., 2018), or collaborative foresight spaces that are rooted in futures research (Hebinck et al., 2018; Pereira et al., 2018). We now distil six core principles from these diverse transformative spaces, which we will use to inform the design of an arena that can foster inclusive engagement and co-creation to address sustainability challenges (Figure 3). These principles are grounded in research on sustainability transitions and action research and can be used to guide the choice of participants, methods used in the arena, and ways to communicate the objective of the arena.





In this subsection, we discuss the literature behind these six principles and discuss some empirical examples. Understanding the importance of each of these principles helps designing a transformative, inclusive co-creation process. As such, these principles should be read like ingredients of equal importance to co-creating a successful transdisciplinary, co-creative space. The principles and their descriptions are deemed useful as a reflexive tool during the design and organisation of such a space.

3.2.1. Principle 1: Build on insights from sustainability transitions research

Research on processes of change has resulted in a good understanding of the dynamics that result in societal change (Loorbach et al., 2017). Overall, it argues that radical change of dominant systems towards sustainability requires



et al. 2021)

Research on sustainability transitions is clear about the vital role of experimentation, as it allows for the development and creation of 'transformative innovations' that provide alternatives to the dominant system. Experimentation with such new, alternative practices is often done is a shielded environment: an environment that is free from the pressures associated with the dominant system, for example the rules and regulations of the neoliberal market or national policies. This has the advantage that these new, radical, alternative, marginalised ways of thinking, doing, or organising can mature and grow in a safe environment and at their own speed. In time, if such experiments can become more visible and desired, better understood, and organised, they may accelerate and start to compete in the dominant system (Smith & Seyfang, 2007; Sengers, Wieczorek & Raven, 2019; Hebinck et al., 2022). Co-creative processes are considered valuable spaces for initiating experimentation, as they bring together a diverse set of actors who unite around a similar issue. In fact, sometimes co-creative spaces function as a shielded environment themselves, allowing for the maturing of new ways of thinking and practices.

Furthermore, we consider the notion of *directionality* as vital for co-creative spaces that aim to contribute action-oriented knowledge. Directionality here refers to the change that is set in motion and to what future system it connects (Pel et al., 2020; Hebinck et al., 2022). Focus on directionality returns in dialogue on what a desired system may look like, but also in the discussion and assessment of what innovative practices are needed to further a sustainability transition. Here, the concept of directionality helps to understand whether innovations add up to incremental change that optimises the current system; or whether innovation can add up to the radical change needed to result in fundamental change of systems, i.e., transformation.

By putting the notions experimentation and directionality central in the aim and design of a transdisciplinary, co-creative space, the process explicitly assumes a normative position in setting out to support radical change of systems towards sustainability. To enable this, the design of such a space should be geared towards experimenting and providing a 'shielded' environment for the development of new ideas and practices. In addition, to maintain the notion of directionality in the design of the space, it should include methods and activities that enable the critical reflection on whether innovation uphold the status quo or can transform dominant structures and practices.

3.2.2. Principle 2: Convene a diverse coalition of the willing

What people are brought into a co-creation space is vital for its outcomes and whether these are sustainable, action-oriented, and context-specific. Therefore, convenors should be mindful of what actors they involve in these processes and how they link to the system (such as a regional mobility system) and the problem framing (such as the current car-dominated structures of that regional mobility system) at hand. But also, whether the group of people they invite represents a selective diversity of perspectives, mindsets and value systems that makes critical debates about future sustainable pathways more likely. Convenors should be aware not to invite only the "loud and powerful" voices, but also to provide space for overlooked but critical perspectives in order to counterbalance established actors with novel positions. Selection of participants then hinges on two key dimensions: the types of participants and the quality of participation.

Co-creating knowledge to address sustainability challenges is a truly transdisciplinary affair, as the needed transformative change will affect all layers of society, all sectors, and all systems. First, part of convening a space is about reflecting on the types of participants (Hebinck & Page, 2017; Polk & Knutsson, 2008), which demands that convenors identify what actors are part of the system. This will likely result in the identification of actors that are embedded in different systems, domains, contexts, and geographies. Bringing in these diverse knowledge and experiences will allow for the generation of more context-specific and societally relevant knowledge. Second, to foster an inclusive space with a high diversity of participants, attention should be paid to ensuring quality of participation of all participants (see also Principle 3 on safe space). Sustainability issues are often highly contested, meaning diverse actors are likely to have contrasting perspectives to the sustainability challenge at hand and what might be possible ways to address them. In addition, existing asymmetrical power relations between actors might obstruct inclusive dialogue and sometimes even silence more marginalised voices (Dyer, 2018). Here, choice of methods can be an effective tool to ensure quality of participation of all participants: for example, a futures perspective allows participants to think beyond the present and the constraints of the present, allowing to look beyond existing power

SHARED

2

relations. Thinking of the regional mobility system example from above, future perspectives could highlight higher shares of shared and affordable, hence more inclusive mobility options. Developing and reflecting about such concrete mobility system futures might then also have a formative effect on transformative strategies. While these two dimensions are essential to consider when selecting participants, convenors of a space should also reflect on the objectives to convening a space and what actors might be needed to achieve that objective. It is for this reason that Transition Management approaches specifically focus on inviting a diverse coalition of the *willing*. In other words, actors that are willing to make more strategic steps towards achieving a particular sustainability goal, meaning unwilling actors will be excluded (Loorbach, 2010).

3.2.3. Principle 3: Create a safeenough space for critical reflections



Setting the ambition to co-create knowledge for a transformation towards sustainability, demands a space in which people can critically reflect on each other's perspectives and assumption of the system. By inviting a diverse group of actors, a diverse set of perspectives and opinions to sustainability and ideas about how to address issues are also brought into a space. Amidst such differences, contrasting ideas and claims discussion on processes of change can lead to feelings of conflict or discomfort among participants (Pereira et al., 2020; Cuppen, 2012). For example, because one might feel excluded from a future or when being confronted with assumptions about future developments that could question fundamental elements of a person's or organisational identity.

In fact, some feelings of discomfort are expected when discussing transformative solutions to sustainability challenges, as it requires participants to unlearn and relearn how the system is structured and functions (Olsson et al., 2017). As such, it is important to keep such conflict constructive (Cuppen, 2012) as only then will it allow for critical reflections on assumptions and for a change in perspective. As sustainability challenges demand multi-actor and multi-level insights on how to address

issues, such deep reflections are essential to accelerating transitions and overcoming lock-ins. In fact, transdisciplinary, action-oriented spaces may even 'feel dangerous' to particular actors, as they set out to challenge the status quo – and its stability and predictability – by coming up with radical ideas and practices for transformation (Moore et al., 2018:p.38). Meaning, actors that have a more marginal role in the system might become more vulnerable as they share their alternative, radical ideas in a space (Drimie et al., 2018). At the same time, the questioning of current relations of power can also 'threaten' the future position of more powerful people the room, risking resistance to cooperate or even to boycott future actions.

To avoid such internal resistance to change and setbacks in the process, trust and transparency are vital to create a safe-enough space. However, in some cases, the most actionable result might demand a certain level of exclusion when it comes to keeping the dialogue and negotiation constructive (Pereira et al., 2020). Here, a focus on the coalition of the willing can be an effective strategy to ensure the co-creative space results in action-oriented knowledge and strategic output.

3.2.4. Principle 4: Ensure strategic insights through a forward-looking perspective

Sustainability transitions are intimately connected to the future, as they aim to move our societal systems towards a more desired future (Muiderman et al., 2022). Engaging with the future in a multi-actor setting can be useful in two crucial ways. First, to derive a shared understanding of what the system should look like, what is part of that future and what is not. Second, to deal with the uncertainty of the future.

Visioning is considered a key method in many transdisciplinary approaches, as it allows participants to look beyond the structures of today's society and system and to imagine a radically different future. Letting go of today's structures and constraints is essential for exploration of what innovations and alternative practices might lead to a transformed system, rather than add up to optimising the current unsustainable one (Hebinck et al., 2018). The process of visioning itself, has the additional benefit of allowing participants to define a common ground from which they can depart. Reflecting on Principle #3 on creating a safe-enough space, visioning can be a safe starting point, to avoid a situation where contrasting ideas may lead to unconstructive conflict (Pereira et al., 2020).

Another characteristic of sustainability challenges is that their complex, coupled socio-technical and social-ecological nature makes it hard to predict the future. This uncertainty complicates efforts to create interventions and solutions, as the future might unfold in unexpected ways. To plan sustainability action in the face of uncertainty, forward looking methods are increasingly used to explore the future in a structured and consistent manner. The concept 'anticipatory governance' describes efforts that bring the exploration of plausible futures into present-day governance processes (Vervoort & Gupta, 2018). It has the potential to stimulate more reflexive and adaptive thinking, as one can assess what variation the future might hold and subsequently make their sustainability action more resilient to such possible outcomes.

3.2.5. Principle 5: Unpack trade-offs and synergies of pathways



As sustainability challenges are rooted in complex and coupled

socio-technical and social-ecological systems, interventions or pathways of change cannot be considered outside of that complex system (Leach et al., 2013; O'Neill et al., 2018). While the coupled systems provide the opportunity for action to target multiple goals, they also run the risk of resulting in trade-offs (Hebinck et al., 2021). Especially the assessment of the potential trade-offs that might be associated with co-created pathway is essential to prevent unintended consequences in other parts of the system. Literature on management of trade-offs highlights several important insights.

First, the identification of what is a trade-off is strongly subjective and can be influenced by power and politics, as actors might identify different losses and benefits to a certain intervention and its impacts. What appears as a win-win for one, might be a trade-off for another. Here, transparent appraisal of trade-offs between stakeholders is considered an important aspect of ensuring just pathways for change (Galafassi et al., 2017). Second, a system perspective is vital to getting a clear understanding of the complexities at play. Here, different viewpoints are essential in highlighting aspects of the system that might otherwise be hidden or unknown. While it is impossible to get a 'complete' understanding of the system, mapping a system with a diverse set of actors is likely to result in a more comprehensive understanding, able to map out the most crucial aspects that might be affected (Hebinck et al., 2021).

3.2.6. Principle 6: Develop concrete steps and generate action-oriented knowledge

Transdisciplinary, action-oriented spaces set out to contribute action-action oriented knowledge. Nevertheless, such spaces often are a starting point for change rather than transformative in themselves (Pereira et al., 2020). Instead, transdisciplinary, action-oriented spaces are often experimental in nature (Bergmann et al., 2021; Pereira et al., 2020), attempting to find and implement ways to accelerate change towards sustainability. Depending on the readiness for change of the system, these spaces can facilitate the reflection on individual and collective agencies in addressing these challenges, forge new alliances and networks, or formulate concrete pathways of change. In doing so, such a space can create an awareness and preparedness for transformation, by exploring what change might come and to co-create constructive and concrete steps in addressing these.

Sustainability challenges are 'felt' differently across different contexts, meaning sustainability action must be tailored to those contexts. For such a transdisciplinary space to become a starting point for transformative change, they need to ensure societally relevant. It is crucial they are context-specific and are able to translate more generalised knowledge into something that is applicable to a local or place-based scale. Without such embedding, generated knowledge might not align with the local conditions, such as involved actors, institutions, physical structures, and socio-political relations (Caniglia et al., 2020).

SHARFD

6

3.3. First steps in the design

3.3.1. Selecting and inviting participants

What people are invited into and can participate in a transdisciplinary, co-creative space give shape to its potential pathways of change and impacts (Principle #2). Therefore, mapping and identification of stakeholders is an important step of the design of the transdisciplinary, co-creative space. Generally, convenors tend to use their own networks as a starting point for co-creation, which is useful because of the already established relationships of trust. This means that there are also higher changes one can mobilise the participants when it comes to pursuing actions after the co-creative process finished. Nevertheless, it might also result in a selection bias and result in a group of people with similar characteristics, which in the context of sustainability issues has a higher risk of overlooking power issues, trade-offs, or other unintended consequences (Barquet et al., 2022).

To ensure a diverse set of participants, we turn to a system perspective: system boundaries will highlight what processes and scales are in- and excluded, an actor mapping of the relevant processes and scales will help identify the relevant participants. Mapping actors is also crucial to reveal any biases in the identification of stakeholders. For example, when the selection includes too many actors from one sector or too few from more marginalised groups (Barquet et al., 2022). There are various dimensions that can be used for the selection of a diverse, willing group of participants. Table 1 shows a few that are useful in the EU Green Deal context

Depending on the sustainability challenge at hand, one might select various dimensions to select participants. In some cases, this can result in the selection of actors that fit one single dimension, but that one aims to find diversity within that dimension. For example, when by only selecting participants associated with civil society, but still selecting participants that are associated with different sectors or have different gender identities. While identification of actors may have been successful, this is by no means a guarantee that they want to and will participate. Especially

Table 1. Diverse dimensions for participant selection

| Dimensions | Participant types |
|-------------------------------|---|
| Broader stakeholder groups | Public actors, civil society, private sector, researchers, citizens, NGOs, etc. |
| Sector | Engineering, medicine, social and public work etc. |
| Geographic origin | Country, region, continent, etc. |
| Gender identity | Male, Female, LGQBTIA+, etc. |
| Cultural identity and race | Caucasian people, people of colour, etc. |
| Socio-economic background | High-income, low-income, marginalised, or vulnerable groups, etc. |
| Transition logics | Radical thinkers, grassroots initiatives, incumbents, etc. |

when inviting groups that can be classified as vulnerable or marginalised, they might choose to not participate out of fear of not being heard or even to be further marginalised (Principle #3). Here, facilitation and methods can sometimes support situations, but deeper acknowledgement of power differences is essential. This can – to some extent – be done by building a level of trust, listen to their concerns and needs, or by choosing to exclude oppressive voices of power to create a willing space for marginalised voices (Pereira et al., 2020).

Finally, it is essential to provide a reason for potential participants to join in. In other words, what will they take away from the process? Are they able to have a say in what the problem is? Is there space for them to create action that aligns with their needs? While action-oriented research often claims to contribute to solving sustainability issues, they sometimes result temporary, short-sighted interventions

(Torrens & von Wirth, 2021). Attracting diverse participants into a transformative space requires preparing a comprehensive, yet compact problems framing as well as an illustration of the rationale for potential participants to join. This may build upon written documents but can also be communicated in personal interactions for example during explorative conversations with key actors.

Selecting SHARED GREEN DEAL Arena participants

The selection of participants for the SHARED GREEN DEAL Arena process has to cover a wide range of dimensions. As the project explores six different priority areas (or sectors), the Arena will require people who are knowledgeable about these six systems to be in the room. To ensure a diverse range of knowledge on the topic areas, experts for these priority areas will come from different stakeholder groups: policy makers, civil society organisations, and academia. In addition, since the project is interested in exploring local and regional implications of the EU Green Deal will, geographic spread is essential to ensure perspectives from different regions is included. As the EU Green Deal has the ambition to accelerate a just transition, we need to be mindful of gender dynamics and ensure a gender balance. Finally, the SHARED GREEN DEAL Arena sets out to support transformative change that links to the EU Green Deal. Therefore, it will aim to include both niche actors – such as leads from grassroots organisations and local change makers, as well as regime actors – such as policy makers from various levels.

With so many dimensions it is not possible to get the perfect mix where each dimension is covered for each of the six priority areas. This would simply result in too many people. Instead, we aim to get a representative mix of people in the plenary room, ensuring that diverse perspectives and viewpoints are present. This does mean that the choice of methods and facilitation need to be mindful of providing sufficient space to participants who represent marginalised groups and actively create room for them to share their thoughts and concerns.

3.3.2. Choice of activities and methods

How the selected participants engage with each other is shaped by the types of activities that frame the co-creative process. Especially with a diverse group of participants, choice of activities is crucial in creating a space in which people can find common ground, but still be critical and reflexive of all inputs and perspectives.

For example, a Transition Arena uses the following four activities to co-create strategic transition pathways:

- 1. Orienting: mapping the system, learning from existing transformative innovations, creating a shared sense of urgency.
- 2. Agenda setting: develop a transition agenda of institutional break-throughs that accelerate transformative change.
- 3. Activating: connecting to and challenging the status quo and creating critical mass for transformative change.
- 4. Reflecting: creating space for social learning.

What outcomes are wanted from the co-creative process is generally a good starting point to defining what activities should be included. While the design of a methodological procedure often includes several sequential steps, it is useful to maintain a level of flexibility in case the co-creative process does not go according to expectation. Following the progress of the participants can be crucial to avoid 'going through the motions' and to simply complete the steps. For example, a co-creative process that has arrived at the agenda-setting step, might realise they have not mapped the system sufficiently, requiring them to take a step back.

Like the choice of participants, the scale that the co-creative space hopes to address is also essential for the choice of activities and methods. As a space with actors from one locality can be highly place-specific in its problematising, envisioning, co-creating action, and reflecting on trade-offs. Whereas this will be somewhat different for a translocal process which connects people who come from various places but have certain goals or activities in common. Here activities should result in knowledge that can be translated across contexts, but that can still empower and support activities taking place on a local scale.



Choosing SHARED GREEN DEAL Arena activities and methods

The SHARED GREEN DEAL Arena process will explore the 'state of transition' of the six priority areas that are central to the project, co-create pathways towards a desired future, and reflect on trade-offs and synergies. Insights from this meeting will be used to set the scene for the broader project, but also directly feed into the design of the social experiments that will take place in the years to follow (Box 1).

For the SHARED GREEN DEAL Arena process we build our choice of methods on four types of activities that are mindful of the six principles and that can navigate the complexity of the six priority topics and the project's ambition to generate insights on how Green Deal policy could be applied at the local or regional context. The methods and steps that are associated with each of the activities (problematise, envision, co-create action, and reflect trade-offs) are described in Figure 2.



Photo 1. Facilitators engaging with the online and in-person participants at the Rotterdam translocal arena as part of the Urbana project, photo by Jan van der Ploeg

1. Problematise

The SHARED GREEN DEAL project explores six EU Green Deal priority areas across Europe, meaning the Arena process will have to explore sustainability challenges and action for diverse, yet interlinked systems. Beside moving around in different systems, the challenges and priorities might be very different across the six-priority area and might also be differently felt across the different geographic contexts. To make sense of these coupled, complex systems, the Map the system and SHARED GREEN DEAL arena will start with multi-actor define the system mapping exercises. These have the following sustainability objectives: 1) to get a shared understanding of the challenge for system; 2) to get a shared understanding of the each of the six sustainability challenges and what drives them: priority areas 3) to get an understanding of what priorities might be across the different systems and geographies; 4) to get insights into the 'state of transition' in terms of progress, speed, and direction. After this phase, participants will have a shared sense of direction and an understanding of the state of transition. REFLECT

4. Reflect on trade-offs

Having defined transition pathways for six priority areas, between there is the risk they have unintended consequences or pathways trade-offs with one another. In this final phase, we will explore potential trade-offs by taking a futures perspective to the earlier developed systems map. In exploring plausible situations, this phase aims to make the pathways more resilient to uncertainties. The outcome of this activity will be slight alterations to the pathways to deal with unforeseen conseguences or trade-offs that were not visible during the co-creation phase.

TRADE-OFFS

Explore and

reflect on

potential

trade-offs

2. Envision

02

PROBLEMATISE

SHARED

GREEN

DEAL

ARENA

PROCESS PHASES

ENVISION

Building on the ambitions set out by the EU Green Deal for a just and sustainable society, the participants will envision what that future might look like for the different systems and across Europe. While the EU Green Deal provides a broad stroke idea of this sustainability future, what this means in a more place-based context is less clear. The participants will envision their desired future for the different systems, while providing more localised **Define shared** examples of how that might translate across different principles of a geographic, socio-cultural, socio-economic condidesired. tions and so on. Here, participants are also able sustainable to highlight what aspects of the EU Green Deal future are less preferred or need adaptation. After this visioning exercise, participants will have a shared 'horizon' to work towards and identify concrete actionable steps for.

3. Co-create action

CO-CREATE ACTION To accelerate transitions towards the Green Deal, the SHARED GREEN DEAL Arena will need to define concrete steps that can be implemented in the social experiments that will take place later in the project. By back-casting pathways from the desired future, the participants can co-create concrete actions that are needed. These concrete actions will form an action agenda that will indicate experimental action and agency to mobilise actors. In this stage, an overview of diverse innovations that

exist across Europe will be used to ensure the co-created action builds on the diverse transformative innovations that exist. Here, the Arena will 'cross-pollinate' between systems to explore actions that can address multiple EU Green Deal goals and or systems. The outcome of this phase will be concrete pathways for each of the six priority areas and how they might link to each other.

Co-create transition pathways that indicate

experimental actions

and agency and can

mobilise actors

03







Photo 2. Connecting offline and in-person participants during the Rotterdam translocal arena as part of the UrbanA project, photo by Jan van der Ploeg

3.3.3. Facilitation of hybrid events

Success of a co-creative, transdisciplinary process is to a large extent determined by the quality of facilitation. Facilitation can help signal issues, smooth out conflict, clarify and increase understanding, or nudge towards more actionable or radical output. Ever since the COVID pandemic, blended or hybrid events have become much more popular, as they make it easier for people to join a co-creative space. However, facilitation of a hybrid co-creative space brings about new challenges (Schipper et al., 2022).

A hybrid meeting or event entails that people are participating both online and in person. Online participants join the meeting via a virtual meeting platform, such as Zoom or Microsoft Teams. In-person participants sit together in a meeting room. In some cases, each participant will take part in the meeting using a personal device, regardless of whether they're physically in the meeting room or not. In other cases, in-person participants will use a central screen to connect with online attendees. In a hybrid meeting the participants would be able to actively interact in the event.

The SHARED GREEN DEAL Arena will also face these challenges, as the process consist of three meetings during which participants will get together: The first and last are online, while the second one is organised hybrid. The earlier mentioned activities (Box 2) will be divided across these three meetings in a flexible way, so the process can adapt to the progress made by the participants in each of the meetings. However, for this the process to go smoothly, the design will have to take particular conditions into account to ensure inclusive and engaged participation. In the following section we will highlight several lessons learned when it comes to facilitating and organising hybrid meetings that we will apply in the SHARED GREEN DEAL Arena.



Facilitating hybrid meetings

When participating in a hybrid meeting is important that both in-person and online participants are aware of this specific format, and they follow a few rules to stay engaged. For example, in-person participants should be aware that a hybrid meeting requires more time and patience. In addition, they will need to take the needs of online participants into consideration. The following three tips are based on experiences from facilitating a hybrid conference for the UrbanA project and that influence to program and technical set-up:

- *Give the online participants priority:* It's easy for discussions to 'take off' among the in-person crowd. However, this will make it more difficult for an online participant to share their views, as it more difficult for them to 'break into' the conversation and share their thoughts. Therefore, it is useful to start, for example a plenary discussion, by asking the online participants whether they would like to comment or ask a question first.
- *Turn off distractions*: As hybrid meetings sometimes take a bit more time and patience, it is easy for people to get distracted by their smartphone or their email. All participants should be encouraged to turn off all distractions and actively participate. Encourage in-person participants to use their smartphones to join the online chat, so they can also ask or answer questions and more generally have a sense of what is going on.
- Encourage participants to have their camera on: To keep a group of online and in-person participants engaged, it is important that they can see each other's faces and see people's reactions to discussions and so on. It is important to suggest online participants to be in a quiet room and to turn on their cameras (if their connection allows that).

Transdisciplinary, co-creative Arenas aim to create spaces for transformative ideas and actions and to encourage community building, social learning, and collective reflexive thinking. This means that it is important to organise hybrid meetings in an inclusive and effective and with a welcoming and open atmosphere. The challenges of designing and facilitating a hybrid event should not be underestimated. Box 4 shows a few extra tips for facilitation of a hybrid meeting.

Roles in a hybrid event

Hybrid meetings can have both plenary and group activities, like normal workshops. However, they require a bit more thought, since it is crucial that the both the online and offline participants feel engaged in the event. For the second hybrid event of the SHARED GREEN DEAL Arena process, a combination of plenary and breakout groups will be part of the program. Meaning participants will move in and out of breakout groups that are made up of a combination of in-person and online participants. While the in-person participants will physically have to move to a different space with a laptop, the online participants will have to join that space via an online breakout room. In short, there is quite some movement involved in this process.

Therefore, it is important to take the different roles that are needed into consideration in the design of a hybrid co-creative space and to have a clear division of tasks and responsibilities. Here is an overview of these most important roles.

- *In person facilitator*: this person oversees the preparation and facilitation of the in-person session. They need to be aware of the importance of making online participants feel included. This means they continuously need to collaborate with the virtual host who facilitates the participation of online participants.
- Virtual host/facilitator: this person oversees the responses of the virtual participants during plenary sessions and ensures online participants find their way to the right online break-out rooms. This means activities such as: signal-ling that a virtual participant has their hand up and want to share something to the in-person facilitator; monitor and respond to the communications in the chat; operate the external webcam; switch microphones when needed; and signal to other facilitators when support is needed. Since this requires a lot of focus, it is best to rotate this role between several volunteers from time to time. In case there are not enough virtual hosts, one can ask participants of the event to take up the role of virtual host, which would serve as a capacity building activity in the event itself.
- Moving host: this person makes sure that online participants can see who is talking in the room (especially key for the plenary room, as it is usually bigger). This means that this person makes sure that the person who is speaking is captured with a webcam, smartphone, or other device with a camera that can log into the hybrid space.



Box 2. Tips to take into consideration when facilitating a hybrid event (UrbanA 2022)



Six tips to take into consideration when facilitating a hybrid event

Treat it like a face-to-face event. Make sure that it is structured well. It needs to include an agenda of the day(s), a clear purpose and timeline and clarity on the sessions' content and methods.

2 Share your screen/ slides/ notes. If you are referring to slides, tables, or other visuals or schematics, make sure all other participants can see it, by sharing your screen or an online file. If someone is taking notes, ideally make use of a live document where others can see what kind of notes are being taken, possibly enabling people to add to the notes themselves.



Allow offline time. Paradoxically, to meaningfully connect online, we also need to be offline. This is why online events need to include shorter sessions than in person events as well as more breaks. Integrate 'offline reflection walks' for participants to reflect on specific questions or lessons learnt as well as longer breaks. You can also think of giving some assignments to be done offline, such as searching for an object or taking a picture related to some specific issues or questions.

Be flexible and trust human creativity. This one might be the most difficult to master. Online meetings will more often than not involve unexpected glitches, ICT-related or otherwise. If any of the above 'ideals' of online meetings are impeded for whatever reason, go with the flow and make do with what you have. If you or somebody else gets cut off, trust that you/he/she will be reconnected later one, if not during the meeting, then afterwards via the notes/ email/ a next meeting.





5 Make sure that online participants have priority. As the facilitators' team you need to make sure that online participants can fully participants. Online participants should be the first to comment on a presentation or ask questions. It's the facilitators responsibility to involve the online participants and prioritise their input or responses.

Allow online participants to see what is happening in the room. You can do this by adding an external camera or asking co-facilitators and/or participants to connect via Zoom with their phones. In this way they can show with their phone's cameras what is happening, who is speaking, etc. This will allow both online and in person participants to feel closer.



Technology needed when organising a hybrid event

To have a hybrid meeting or event run smoothly and effectively, one needs to take the technology that is needed into account. While it is obvious that participants who join online will need their own device (a laptop or smartphone) to join the event, it is useful to stress that a good video and audio connection are crucial to quality participation during the event.

As the main meeting still takes place online, in-person participants too need a good video and audio connection to communicate with the other participants. While in-person participants can bring their own device to join with their video, it is useful to have screens and video-conference technologies set up in the room. When it comes to sound, it is important to have one microphone and audio-source to prevent echoes.

Based on previous experiences we have learned that a hybrid meeting should at least have the following things set up:

- Good internet connection: meaning a wire connection or Wi-Fi that can take at least 5 devices with 1,5 MB/s download and upload.
- Standard zoom account that can host up to 100 participants.
- One laptop in the plenary room for the zoom connection and additional laptops to host the hybrid breakout sessions.
- The laptop in the central room is connected to a projector or big screen to make sure that online participants are visible to the in-person participants.
- A number of external webcams are connected to the laptops with the aim to enable online participants to see what is happening in the physical break out room(s).
- Smartphones can be used as moving cameras so that online participants can better understand the dynamics in the room.

Technology is an essential part of organising a hybrid meeting successfully. However, some contexts do not allow use of such technology or for people to fully participate in the meetings. For example, when there is bad internet connection, not allowing for a video connection or when online participants can only join the meeting through a single device which has a small screen, like a smartphone. This will strongly affect the quality of participation in the meeting, meaning facilitators need to be extra vigilant to give these participants priority to react and make sure to send any material used during the meeting (such as slide decks and videos) beforehand. Another option is that organisers of a space consider freeing up budget to enable full participation of those participants, for example by covering the costs for joining the meeting in-person or for getting access to the needed technologies (e.g., rent of a space, or an internet dongle). Such considerations are especially salient when projects operate within a marginalised context, where lack of infrastructure poses a challenge to host hybrid meetings. To conclude, reflection on whether the hybrid meeting format is appropriate and can guarantee quality participation for the identified stakeholder groups is vital.

3.3.4. Planning for communication and dissemination

Something that tends to be 'forgotten' in the design of a transdisciplinary, co-creative event is integrating communication and dissemination into event planning from the start. Not doing so is a missed opportunity. Not only does it ensure that invitations are able to clearly convey the objectives of the event and what they have to offer to prospective participants, but it also allows the organisers to make better use of the event's outcomes. In fact, thinking about what outputs can be communicated and how, is a useful way to reflect *in media res* on how the event can connect to a wider audience or to specific target groups.

Identifying and selecting participants for the event is one part of the design. Another crucial part of designing a co-creative space is inviting and convincing them the event is worth participating in. For example, it bears consideration that specific SHARED GREEN DEAL project objectives, such as to link EU Green Deal policy to the local or regional level, might not be of particular interest to prospective participants. Reflecting on what does draw them in to the Arena and centring event communication around this, is crucial in making sure people truly attend the event. For example, a grassroots initiative might welcome the opportunity to connect with and get inspired by other innovative actors. Or even to interact with policy makers who wield influence over their field. When it is impossible to find such points of interests for participants, it can be considered a sign that the event isn't action-oriented enough, thus prompting a redesign.

As transdisciplinary, co-creative events lean on interaction between diverse actors, outcomes from a co-creative process tend to be rich, diverse, and full of stories. In other words, there is huge potential to share the created output in an engaging way with the outside world, if organisers prepare ways to capture some of that richness. This can be done by freeing up one person from the organising team to take photographs, capturing the co-creative spirit of the event. Seeing as the SHARED GREEN DEAL Arena is the first event for the project, these photos can be a great resource for future project events and communication, as they will go a long way in making other activities come across more personable, relatable, and exciting. Secondly, the organising team can record short audio and/or video interviews with participants (with their written consent), which could then be used as building blocks for other SHARED GREEN DEAL videos and 'stories of change'. Also, the photos, quotes and impressions captured from participants during the Arena process are a good tool to convey the event's atmosphere as part of an otherwise more factual wrap-up that participants and others interested receive after the project. In addition, these materials can be useful for reporting or presentations later on or even after the project.

In short, communication and dissemination strategies can have a major effect on the success and impact of transdisciplinary, co-creative events and should be considered from the start of the design. It is crucial for attracting engaged participants for your event, as well as for improving the quality and outreach of generated action-oriented knowledge.

3.3.5. A starting point for transformative change

Organising an ambitious and inclusive transition arena process that aims to instigate transformative change remains a challenging endeavour. With these guidelines at hand, we have offered a set of design principles and practical tips to co-develop, conduct, and reflect upon such a process. We are convinced that during times of multiple reinforcing global crises, the creation of legitimate transformative spaces is needed more than ever before. Yet, despite all good advice in this document, a map is not the territory, as scientist and philosopher Alfred Korzybski has remarked.

Co-creating action-oriented knowledge among a diverse group of actors brings about many uncertainties and unknowns. Key to meaningful processes is the capacity to embrace the fragile emergence of insights, novelty, tensions, and surprises. Addressing long-term change dynamics in complex and coupled socio-technical and socio-ecological systems not least requires strong personal commitment, courage and perseverance among all involved actors navigating the process. No matter which capacities are necessary, we encourage to engage with the ambiguities of such transformative spaces to lay out the seeding grounds for developing more sustainable pathways for humanity.

SHARED



4. Acknowledgements

We are thankful for the supportive feedback of Chris Foulds during the writing of this Deliverable. This deliverable is part of the SHARED GREEN DEAL (Social sciences & Humanities for Achieving a Responsible, Equitable and Desirable GREEN DEAL) project that is funded under the European Union's Horizon 2020 research and innovation program under grant No 101036640.

References

- Avelino, F., Dumitru, A., Cipolla, C., Kunze, I. & Wittmayer, J., 2020. Translocal empowerment in transformative social innovation networks. *European Planning* Studies. 28 (5), 955–977.
- Avelino, F., Wittmayer, J.M., Pel, B., Weaver, P., Dumitru, A., Haxeltine, A., Kemp, R., Jørgensen, M.S., Bauler, T., Ruijsink, S. & O'Riordan, T., 2019. Transformative social innovation and (dis)empowerment. *Technological Forecasting and Social Change*. 145, 195–206.
- Barquet, K., Segnestam, L. & Dickin, S., 2022. MapStakes: a tool for mapping, involving and monitoring stakeholders in co-creation processes. Stockholm: Stockholm Environment Institute https://cdn.sei.org/wp-content/uploads/2022/05/ mapstakes-sei2022.014.pdf.
- Bergmann, M., Schäpke, N., Marg, O., Stelzer, F., Lang, D.J., Bossert, M., Gantert, M., Häußler, E., Marquardt, E., Piontek, F.M., Potthast, T., Rhodius, R., Rudolph, M., Ruddat, M., Seebacher, A. & Sußmann, N., 2021. Transdisciplinary sustainability research in real-world labs: success factors and methods for change. Sustainability Science. 16 (2), 541–564.
- Brandt, P., Ernst, A., Gralla, F., Luederitz, C., Lang, D.J., Newig, J., Reinert, F., Abson, D.J. & von Wehrden, H., 2013. A review of transdisciplinary research in sustainability science. *Ecological Economics*. 92, 1–15.
- Caniglia, G., Luederitz, C., von Wirth, T., Fazey, I., Martín-López, B., Hondrila, K., König, A., von Wehrden, H., Schäpke, N.A., Laubichler, M.D. & Lang, D.J., 2020. A pluralistic and integrated approach to action-oriented knowledge for sustainability. *Nature Sustainability*. 4, 93–100.
- Charli-Joseph, L., Siqueiros-Garcia, J.M., Eakin, H., Manuel-Navarrete, D. & Shelton, R., 2018. Promoting agency for social-ecological transformation: a transformation-lab in the Xochimilco social-ecological system. *Ecology and Society*. 23 (2).

- Cuppen, E., 2012. Diversity and constructive conflict in stakeholder dialogue: Considerations for design and methods. *Policy Sciences*. 45 (1), 23–46.
- Drimie, S., Hamann, R., Manderson, A.P. & Mlondobozi, N., 2018. Creating transformative spaces for dialogue and action: reflecting on the experience of the Southern Africa Food Lab. *Ecology and Society*. 23 (3).
- Dyer, M., 2018. Transforming communicative spaces: the rhythm of gender in meetings in rural Solomon Islands. *Ecology and Society*. 23 (1).
- EC, 2019. The European Green Deal. Brussels. https://eur-lex.europa.eu/ resource.html?uri=cellar:b828d165-1c22-11ea-8c1f-01aa75ed71a1.0002.02/ DOC_1&format=PDF.
- Fazey, I., Schäpke, N., Caniglia, G., Patterson, J., Hultman, J., et al., 2018. Ten essentials for action-oriented and second order energy transitions, transformations and climate change research. *Energy Research and Social Science*. 40, 54–70.
- Frantzeskaki, N. & Loorbach, D., 2010. Towards governing infrasystem transitions. Reinforcing lock-in or facilitating change? *Technological Forecasting and Social Change*. 77 (8), 1292–1301.
- Galafassi, D., Daw, T.M., Munyi, L., Brown, K., Barnaud, C. & Fazey, I., 2017. Learning about social-ecological trade-offs. *Ecology & Society*. 22 (1).
- Geels, F., 2011. The multi-level perspective on sustainability transitions: Responses to seven criticisms. *Environmental innovation and societal transitions*. 1 (1), 24–40.
- Geels, F.W., Turnheim, B., Asquith, M., Kern, F., Kivimaa, P., Matti, C., Veenhoff, S., Frantzeskaki, N. & Wittmayer, J., 2019. Sustainability transitions: policy and practice. https://www.eea.europa.eu/publications/sustainability-transitions-policy-and-practice.
- Hebinck, A., Diercks, G., von Wirth, T., Beers, P.J., Barsties, L., Buchel, S., Greer, R., van Steenbergen, F. & Loorbach, D., 2022. An actionable understanding of societal transitions: the X-curve framework. *Sustainability Science*. 17, 1009–1021.
- Hebinck, A. & Page, D., 2017. Processes of participation in the development of urban food strategies: A comparative assessment of Exeter and Eindhoven. Sustainability. 9 (6), 931.

- Hebinck, A., Vervoort, J.M., Hebinck, P., Rutting, L. & Galli, F., 2018. Imagining transformative futures: participatory foresight for food systems change. Ecology & Society. 23 (2).
- Hebinck, A., Zurek, M., Achterbosch, T., Forkman, B., Kuijsten, A., Kuiper, M., Nørrung, B., Veer, P. van 't & Leip, A., 2021. A Sustainability Compass for policy navigation to sustainable food systems. *Global Food Security*. 29, 1–27.
- Heyen, D.A., Menzemer, L., Wolff, F., Beznea, A. & Williams, R., 2020. Just transition in the context of the EU environmental policy and the European Green Deal: Issue Paper under task 3 of the 'Service contract on future EU environment policy'. Freiburg: Oeko-Institut.
- Hölscher, K., Frantzeskaki, N. & Loorbach, D., 2019. Steering transformations under climate change: capacities for transformative climate governance and the case of Rotterdam, the Netherlands. *Regional Environmental Change*. 19 (3), 791–805.
- Hölscher, K., Wittmayer, J.M., Avelino, F. & Giezen, M., 2019. Opening up the transition arena: An analysis of (dis)empowerment of civil society actors in transition management in cities. *Technological Forecasting and Social Change*. 145, 176–185.
- Hölscher, K., Wittmayer, J.M., Hirschnitz-garbers, M., Olfert, A., Schiller, G. & Brunnow, B., 2021. Transforming science and society? Methodological lessons from and for transformation research. *Research Evaluation*. 30(1) 73–89.
- Kemp, R. & Rotmans, J., 2009. Transitioning policy: Co-production of a new strategic framework for energy innovation policy in the Netherlands. *Policy Sciences*. 42 (4), 303–322.
- Lang, D.J., Wiek, A., Bergmann, M., Stauffacher, M., Martens, P., Moll, P., Swilling, M. & Thomas, C.J., 2012. Transdisciplinary research in sustainability science: Practice, principles, and challenges. Sustainability Science. 7, 25–43.
- Leach, M., Raworth, K. & Rockström, J., 2013. Between Social and Planetary Boundaries: Navigating Pathways in the Safe and Just Space for Humanity. *World Social Science Report* 2013. 84–89.
- Loorbach, D., 2010. Transition management for sustainable development. Governance: an international journal of policy, administration and institutions. 23 (1), 161–183.

- Loorbach, D., Frantzeskaki, N. & Avelino, F., 2017. Sustainability Transitions Research: Transforming Science and Practice for Societal Change. Annual Review of Environment and Resources. 42 (1), 599–626.
- Loorbach, D., Wittmayer, J., Avelino, F., von Wirth, T. & Frantzeskaki, N., 2020. Transformative innovation and translocal diffusion. *Environmental Innovation and* Societal Transitions. 35, 251–260.
- Moore, M.-L., Olsson, P., Nilsson, W., Rose, L. & Westley, F.R., 2018. Navigating emergence and system reflexivity as key transformative capacities: experiences from a Global Fellowship program. *Ecology and Society*. 23 (2).
- Muiderman, K., Zurek, M., Vervoort, J., Gupta, A., Hasnain, S. & Driessen, P., 2022. The anticipatory governance of sustainability transformations: Hybrid approaches and dominant perspectives. *Global Environmental Change*. 73, 102452.
- Norström, A. V, Cvitanovic, C., Löf, M.F., West, S., Wyborn, C., et al., 2020. Principles for knowledge co-production in sustainability research. *Nature Sustainability*. 3, 182–190.
- O'Neill, D.W., Fanning, A.L., Lamb, W.F. & Steinberger, J.K., 2018. A good life for all within planetary boundaries. *Nature Sustainability*. 1, 88–95.
- Olsson, P., Moore, M.L., Westley, F.R. & McCarthy, D.D.P., 2017. The concept of the Anthropocene as a game-changer: A new context for social innovation and transformations to sustainability. *Ecology and Society*. 22 (2).
- Pel, B., Raven, R. & van Est, R., 2020. Transitions governance with a sense of direction: synchronization challenges in the case of the dutch 'Driverless Car' transition. Technological Forecasting & Social Change. 160, 120244.
- Pereira, L.M., Frantzeskaki, N., Hebinck, A., Charli-joseph, L., Drimie, S., Dyer, M., Eakin, H., Galafassi, D., Karpouzoglou, T., Marshall, F., Moore, L., Olsson, P., Zwanenberg, P. Van & Vervoort, J.M., 2020. Transformative spaces in the making: key lessons from 9 cases in the Global South. Sustainability Science. 15, 161–178.
- Pereira, L.M., Hichert, T., Hamann, M., Preiser, R. & Biggs, R., 2018. Using futures methods to create transformative spaces: visions of a good Anthropocene in southern Africa. *Ecology and Society*. 23 (1).

- Pianta, M. & Lucchese, M., 2020. Rethinking the European Green Deal : An Industrial Policy for a Just Transition in Europe. Review of Radical Policial Economics. 52 (4), 633–641.
- Polk, M. & Knutsson, P., 2008. Participation, value rationality and mutual learning in transdisciplinary knowledge production for sustainable development. *Environmental Education Research.* 14 (6), 643–653.
- Roorda, C., Wittmayer, J., Henneman, P., van Steenbergen, F., Frantzeskaki, N. & Loorbach, D., 2014. Transition management in the urban context: guidance manual. Rotterdam: Dutch Research Intsitute for Transitions. https://drift.eur.nl/publications/transition-management-urban-context-guidance-manual/.
- Schäpke, N., Stelzer, F., Caniglia, G., Bergmann, M., Wanner, M., Singer-Brodowski, M., Loorbach, D., Olsson, P., Baedeker, C. & Lang, D.J., 2018. Jointly experimenting for transformation?: Shaping real-world laboratories by comparing them. *Gaia*. 27, 85–96.
- Schipper, K., Silvestri, G., Wittmayer, J.M., Isoke, J.B. & Kulabako, R., 2019. Handle with care: navigating the pluriformity of power to enable actionable knowledge for transitions in informal settlements in the global south. Urban Transformations. 1, 4.
- Schipper, K., van Steenbergen, F., Avelino, F., Silvestri, G., Crowley, D., Di Paola, L., Silverston, S., de Maio, S., Rach, S., Pitzer, M. & Hendrikx, L., 2022. Just Arenas. Guide for designing collaborative spaces for just sustainability transitions. Rotterdam: UrbanA https://sustainablejustcities.eu/resources/ just-arenas-guide.
- Sengers, F., Wieczorek, A.J. & Raven, R., 2019. Experimenting for sustainability transitions: A systematic literature review. Technological Forecasting and Social Change. 145, 153–164.
- SHARED GREEN DEAL, 2022. Social Science & Humanities for Achieving a Responsible, Equitable and Desirable GREEN DEAL. Available at: https://sharedgreendeal.eu/
- Smith, A. & Seyfang, G., 2007. Grassroots Innovations for Sustainable Development: Towards a New Research and Policy Agenda. *Environmental politics*. 16 (4), 584–603.
- Torrens, J. & von Wirth, T., 2021. Experimentation or projectification of urban change? A critical appraisal and three steps forward. *Urban Transformations*. 3, 8.

- Vervoort, J.M. & Gupta, A., 2018. Anticipating climate futures in a 1.5 °C era: the link between foresight and governance. *Current Opinion in Environmental Sustainability*. 31, 104–111.
- Wittmayer, J.M. & Schäpke, N., 2014. Action, research and participation : roles of researchers in sustainability transitions. *Sustainability Science*. 9, 483–496.





This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101036640.