



X-CURVE

A sensemaking tool to foster collective narratives on system change

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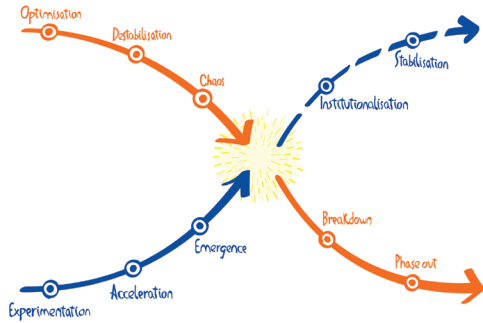
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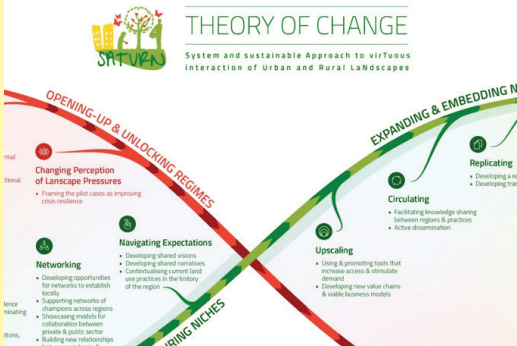
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To achieve a deep transformation by translating global agreements into concrete actions addressing systemic change remains one of the greatest challenges of our times.

Systemic change can be explored through the lenses of sustainability transitions by looking at the dynamics among sub-systems of our economy such as energy, food, mobility, housing, healthcare, and finance.

The X-curve helps to map these transition dynamics and enable a co-creation setting for designing interventions addressing transformative change.

THE X-CURVE

What is the X-Curve?

Transitions are fundamental changes in the culture, structure and practices of societal systems. The X-Curve is a visual tool aimed at creating a richer understanding of the transition dynamics within society or a specific context (e.g. neighbourhood, city, region, etc.). It creates a common language and understanding of the societal dynamics currently at play.

The X-Curve is a powerful tool for:

- ☉ **Understanding systems:** make transition dynamics understandable as a visual process with the two basic patterns of build-up and breakdown, their underlying dynamics and their potential interactions.
- ☉ **Awareness and priority setting:** introduce systemic change into broader societal processes. Develop and communicate a shared vision with selected sector partners and stakeholders, as well as enabling a discussion to establish a common agenda.
- ☉ **Supporting decision-making and experiments:** jointly identify interventions as well as strategies, resources and instruments to create an enabling environment for systemic change. This can take place at different phases of the policy process, such as design, implementation or even monitoring and learning.
- ☉ **Manage learning and institutional change:** enable transformative change in governmental policies and markets paying attention to the learning processes and reflexive capabilities of actors.

How to apply it to your project?

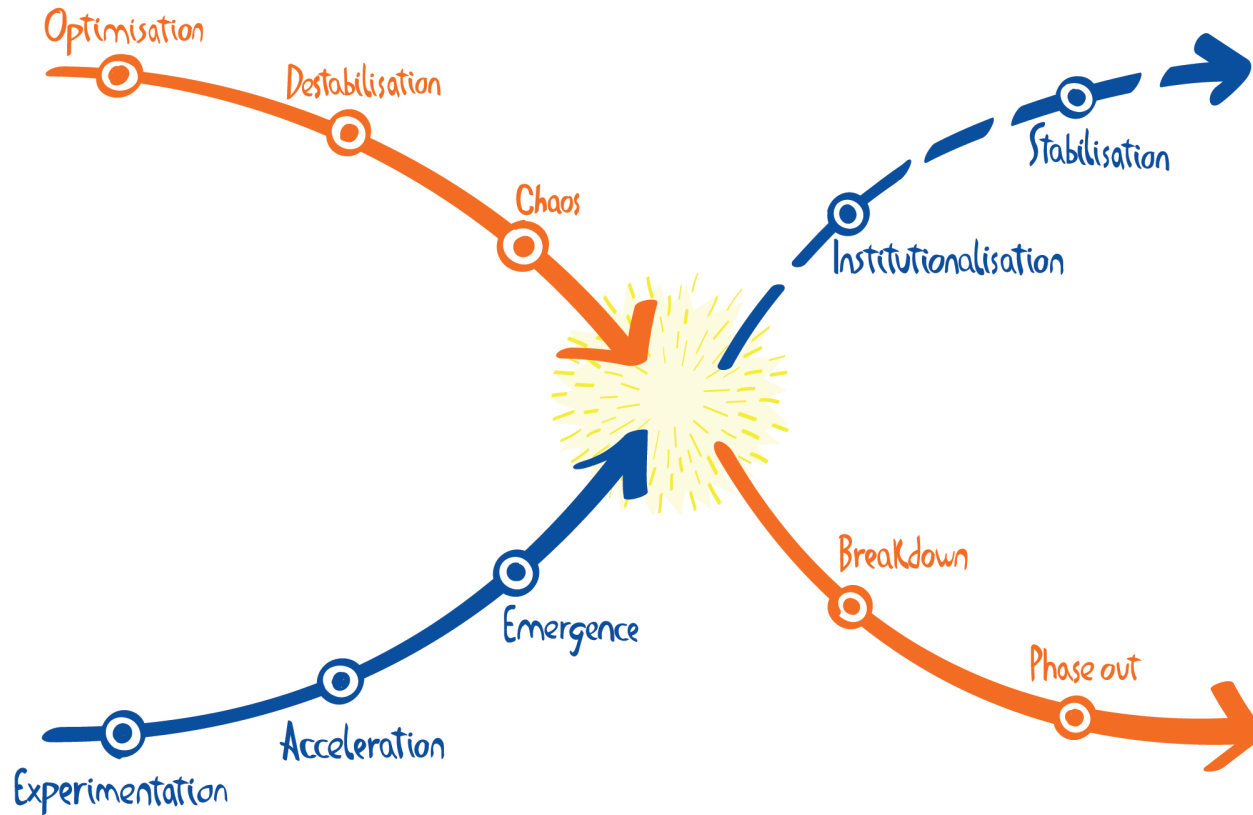
Context. The X-Curve is very suitable for application in multi-stakeholder settings aimed at jointly exploring the design of alternative actions to support system change.

When? It can be applied at any point during a project's development. However, its application in a project's early stages can help in understanding priority areas, while its use in intermediate stages can provide an opportunity for sense-making, the harvesting of learning, as well as reflecting on new practices and priorities.

Where? In practice, it can be applied in co-creation workshops or self-reflection exercises where the X-Curve functions as a sense-making tool to explore potential interventions as part of collectively created narratives. The X-Curve provides a starting point to explore the transition dynamics present in each domain. Its interpretation, however, is highly dependent on perspective: the image may differ from person to person. Trigger questions can help to think how the X-Curve can contribute to discussions of different aspects and multiple understandings of project developments.

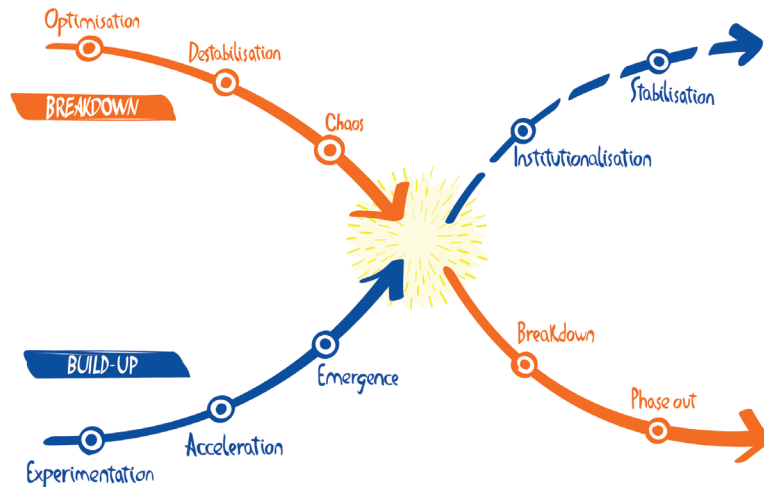
- *What do I see happening in society?*
- *What is going on with the sector where I am working? What is happening in other sectors?*
- *Where do I position myself, my projects, and other ongoing actions?*
- *What are the relations between all of them? What are the potential synergies?*
- *Who are the main actors fostering transformative change?*
- *What are the resources available?*
- *Which areas deserve more attention? And what would I like to work on?*

The X-Curve



TRANSITION DYNAMICS

Transitions imply deep systemic change unfolding over a long time but with a distinctively non-linear and chaotic pattern in which accelerated and accumulated incremental changes take place. Transition implies a 'creation vs destruction' duality that is simultaneous to the process of generation and anchoring of new, alternative practices and structures, as well as questioning, destabilising, and breaking down existing unsustainable practices and structures. These transition dynamics can be described by two interrelated patterns: patterns of breakdown and patterns of build-up.



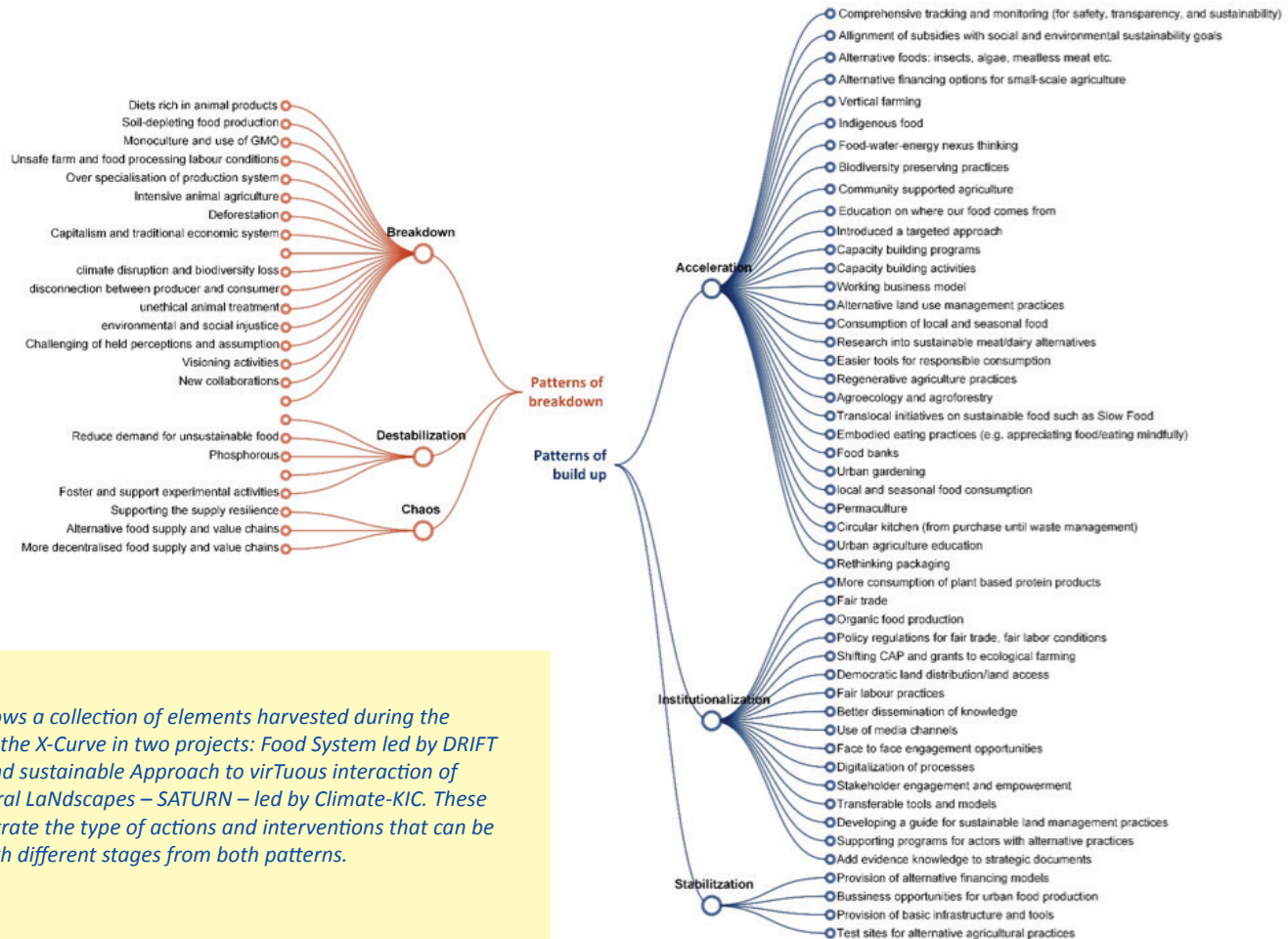
Patterns of breakdown

Societal systems (mobility, food, energy, etc.) function well for a long time. Progress is achieved through continuous optimisation and improvement. However, path dependency favours incremental or 'step-by-step' improvements that before led to optimisation and now constitute a lock-in. The more that is invested in them, the more difficult it becomes to change. The patterns of breakdown occur as part of a changing 'landscape' (exogenous pressures such as climate change or digitalisation) where destabilisation gradually develops: unrest and tensions within the targeted system and emerging doubts about its long-term sustainability. That can be the starting point of a phase of sudden loss of security, collapse of companies, political intervention, or acute crises: chaos. This eventually leads to the phasing out of parts of the original targeted system.

Patterns of build up

The underlying patterns of build-up are about shaping alternative ways of thinking, working, and organising. Such 'transformative innovations' often arise experimentally, far from the regime: they are radical, alternative, and marginal and fall outside the social norm. These can be entrepreneurs working on electric cars, but also people shifting to bikes, platforms providing shared mobility, and new cultural norms that frame cars not as the pinnacle of freedom but as an unwelcome necessity to do shopping or commute to work. But over time, such alternatives become cheaper, more visible, better understood and organised, and the process of diffusion accelerates: more and more people are joining in and recognise their potential. From the self-organising capacity of people, new structures, routines and organisational forms gradually emerge.

Insights on patterns of breakdown and patterns of build-up from two agro-food initiatives



This figure shows a collection of elements harvested during the application of the X-Curve in two projects: Food System led by DRIFT and System and sustainable Approach to virtuous interaction of Urban and Rural Landscapes – SATURN – led by Climate-KIC. These elements illustrate the type of actions and interventions that can be associated with different stages from both patterns.

An example of build-up and breakdown patterns on the circular economy

In the transition to a circular economy, do we mainly see activity around experimentation and acceleration, or are there also signs of institutionalisation? And how much emphasis is still put on optimising the current system (improving it), rather than phasing out what we already know is unsustainable in the long term? In the dynamic of build-up and breakdown, the two patterns reinforce or counteract each other and there is never a single transition, let alone an unambiguous outcome. However, the different dimensions of transitions and the sub-patterns of build-up and breakdown do provide a basis for making a rough estimate of the 'state of transition', its direction and speed.

That 'state of transition' can provide a basis for strategy development aimed at anticipating subsequent phases, responding to (un)desired dynamics, and exploring possible futures. So, for the circular economy, given what we just identified as important transition dynamics, are we focussing on the right things, or should we shift attention to more effectively steer and accelerate upwards and downwards dynamics?

Take the example of the transition to a circular economy in The Netherlands. When systems structures and processes are still stable and optimisation works fine, people who work on system change are misunderstood and easy to marginalise. For a long time, the circular economy was only seen as a complementary step by focusing on waste management and recycling, and few people believed it could really impact the overall economic system any time soon. Now, as more destabilisation occurs, and the end of pipe solutions based on recycling start to fail, more people are becoming interested in experimenting with alternative products, processes, and services by seriously challenging the traditional linear business models and, subsequently, increasing acceptance and visibility of circular economy options.

While signs of destabilisation are growing, there are disruptive situations and changes (i.e. chaos) affecting the economic and political systems. However, the value in value chains is redefined by companies shifting to new business models by providing a service rather than a product and, by doing so, increasing the opportunities for upscaling integrated offers in the value chain. Standards are then introduced to support the institutionalisation of successful practices on new circular products and services while regulations impose new rules and limitations to support the phase-out of unwanted practices. From this perspective, transitions are therefore also very social processes: expectations, feelings, ideals, interests, and perceptions are very decisive in tempo and dynamism. By changing the expectations of what a circular economy should be and leading principles by which it functions (circular business models, environmental quality, systems perspective, intensive service added value), further progress for systemic change is facilitated. The shift in expectations and mindset can contribute to the creation of shared meanings in future scenarios and related strategic interventions.

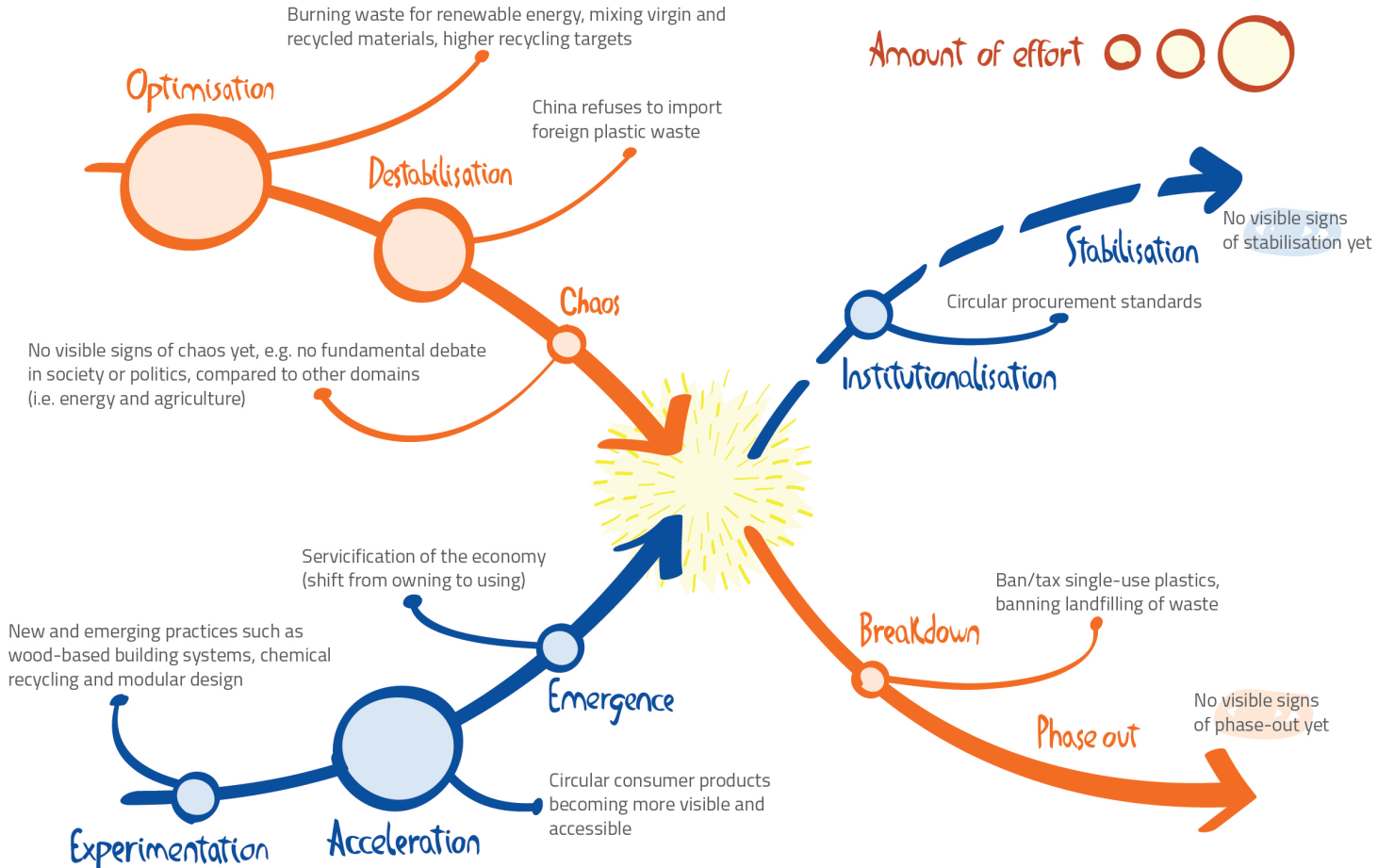


Figure: X-Curve example, The transition to a circular economy in The Netherlands (Bode et al, 2019).

APPLICATION

As a sensemaking tool, the X-Curve can be used as part of a short or longer process including a combination of co-creation workshops and desk research. As indicated before, four areas of application could be: System Mapping, Priority setting and Governance, Instrument mix and experiments, and Learning and institutional change.

In practice, the process can be divided in two main sessions:

- A. Co-creation session 1: identifying transition dynamics.
- B. Co-creation session 2: identifying interventions.

The nine steps across the two sessions and related outputs are presented in the figure on the next page. The first session can be done as a stand-alone session, but for the second session you need to understand the transition dynamics before you start identifying suitable interventions. There is no clear start or end, rather it is a looping process where the different sessions are interconnected by the knowledge management process, which in turn depends on the context of the implementation, the audience, and other related actions.

Delivery. The process described in the following pages can be led by a team of people covering a variety of responsibilities, such as the application of methods, liaising with the target cases/projects to be discussed over the session and the management of the audience, including communication. A brief description of this team is presented later.

Preconditions. Following a challenge-led approach is the overall recommendation for the preparation of the process, which can be action-based or learning-oriented. Anchoring the process in specific cases, portfolios of projects or relevant policies facilitates a better flow throughout the process. No specific prior knowledge is required but an overall understanding of socio-technical systems and a familiarity with the cases to be discussed is recommended (i.e. audience can receive a case briefing in advance).

Knowledge management is introduced as a transversal practice to capitalise the outputs of the sessions and co-produce practice-based knowledge. It contributes to the effective mapping of relationships between sessions through the use of data and knowledge flows. It is aimed at supporting the common understanding of the set of elements embedded in the targeted system and the portfolio of interventions.

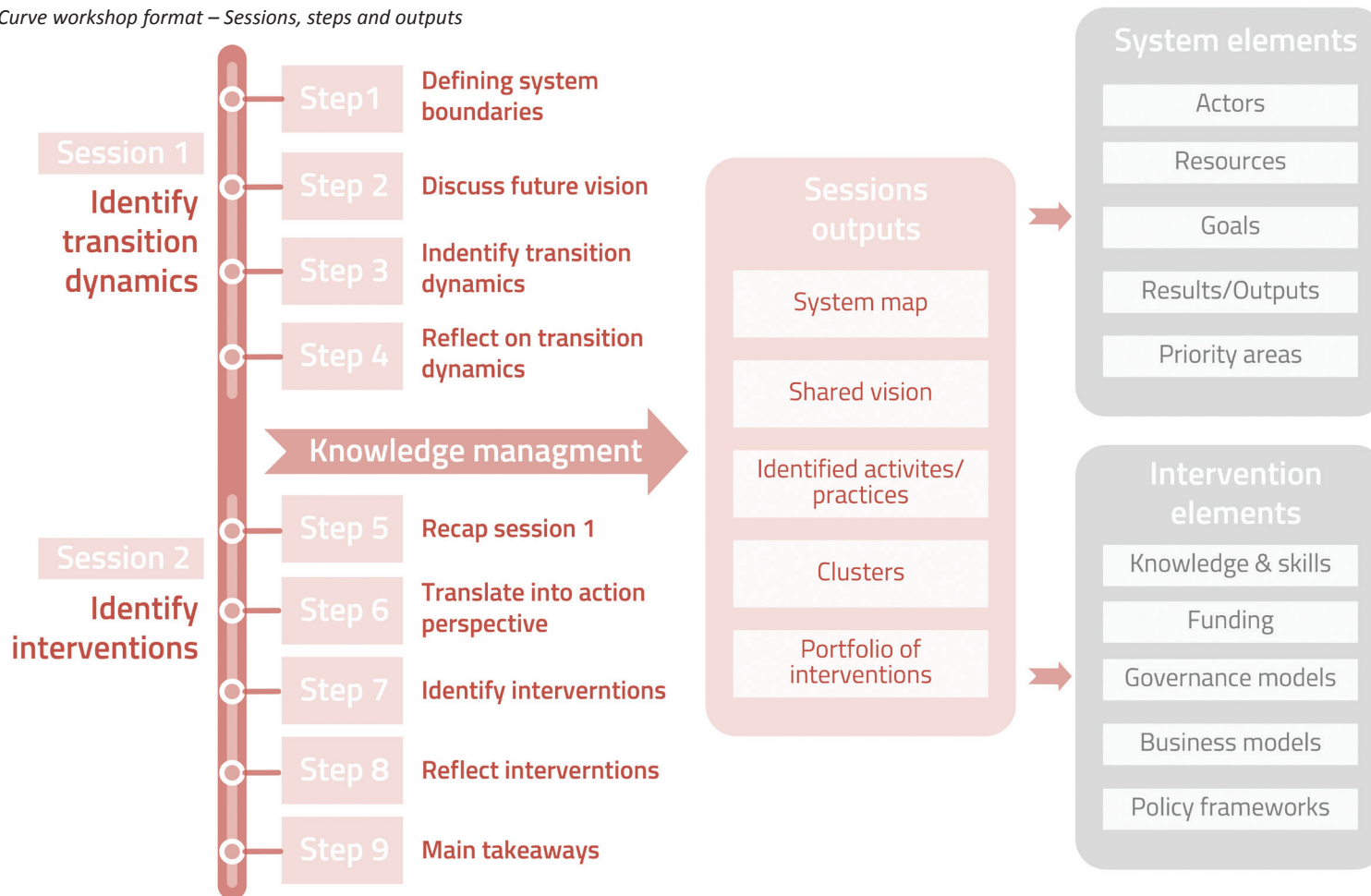
Target audience. Before the workshop starts, it is important that you define the target audience of your workshop. The X-Curve model can be a useful tool especially for policymakers, civil servants, civil society organisations or other stakeholders involved in sustainability transition processes at the city, regional or national level.

Goals and expected outcomes. An X-Curve workshop aims at creating awareness and shared meanings regarding the understanding of the transition dynamics within society or a specific context. A workshop can also help in identifying suitable interventions for different phases and aspects of these dynamics as part of a project-based discussions.

Duration. Before the workshop you need to consider the time needed for conducting the workshop in relation to your goal and expected outcomes. Half a day or four hours is the approximate time required for the organisation of each of the two co-creation sessions.

A detailed description of steps and principles for workshop design can be found in Challenge-Led System Mapping Handbook (EIT-Climate KIC) and Innovation Camps Handbook (JRC)

X-Curve workshop format – Sessions, steps and outputs



Co-creation session 1: Identifying transition dynamics

STEP 1: DEFINING SYSTEM BOUNDARIES

- ⊙ Choose a system demarcation in advance, using functional or spatial boundaries or, as is most common, a combination. (For example: mobility system in Barcelona or energy system in Germany.)
- ⊙ Usually, this system demarcation is a logical result based on the target audience or is something that is agreed upon beforehand with the challenge owner.
- ⊙ The ideal size of a group is 5-7 people. With larger groups, you can split the group and choose to identify a different system per group, or have each group do the same system.

For example, all groups focus their analysis on the mobility system in Barcelona, or one group focuses on the mobility system, where others focus on energy and housing.

STEP 2: DISCUSS FUTURE VISION

Participants are invited to discuss their desired vision as a referential point for the analysis. They explore how radically different that vision is from the situation today. The final vision of the desired transition determines whether you see something as 'radically different' or just 'optimising the current system'. The X-Curve functions as a basis for a discussion about this. This is an important part of the exercise. Only in this way we can question certain unsustainable visions of the future and transition paths and make possible radical visions explicit.

Practical implementation:

- ⊙ The shared vision can be available from previous workshops, conversations and documents.
- ⊙ A challenge owner can pitch the existing vision for the case by using infographics, posters or any other material.

- ⊙ The revisited vision can include a longer horizon to better use the X-Curve so make sure the vision is set in the far future (20-30 years, rather than 3-5 years). In this way, the discussion can be about a desired rather than an expected or calculated future.
- ⊙ The vision is not so much about concrete and measurable targets (e.g. 50% less CO₂), but more about aspirational goals (clean, inclusive, etc).

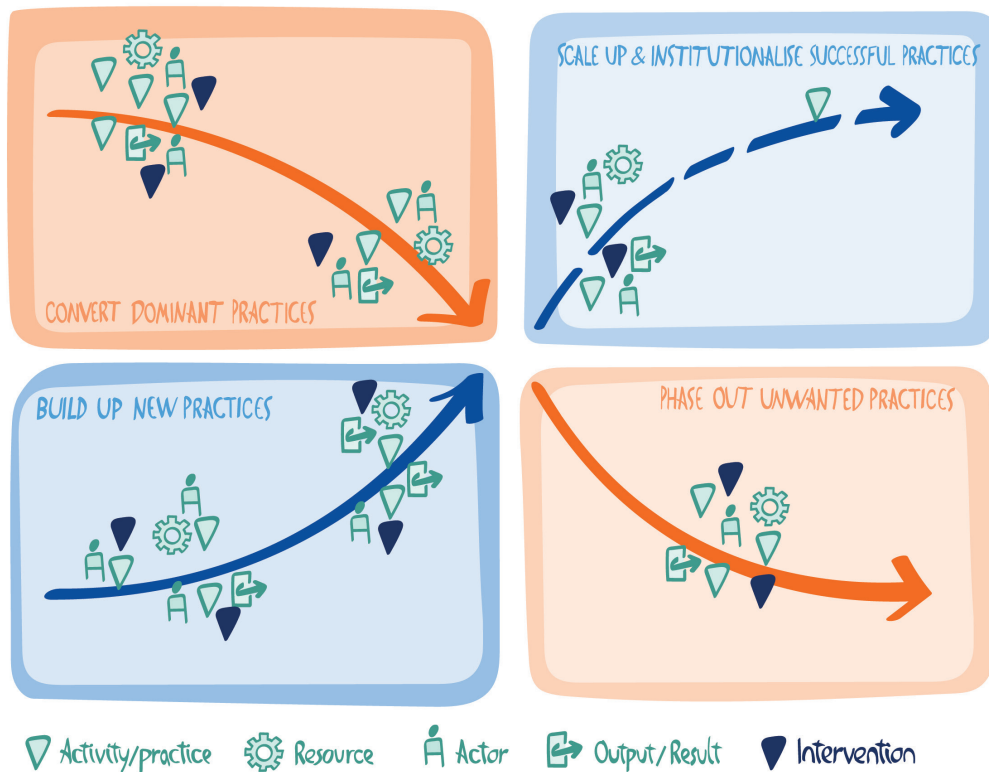
STEP 3: IDENTIFYING TRANSITION DYNAMICS

This step consists in supporting participants in understanding and discussing transition dynamics in a societal system by jointly identifying the different activities and practices that can currently be observed. Guiding questions help to drive the discussion to explore the patterns of transitions dynamics (e.g. acceleration or phase-out).

Make sure the focus is on observed activities/practices and not possible (future) interventions. This is for a later stage. Key actors and available resources can also be included as part of the description of the system defined.

Practical Implementation

- ⊙ Prepare a blank X-Curve in advance on which (digitally or physically) Post-it notes can be affixed where appropriate.
- ⊙ First, let participants reflect for themselves and write down ideas on (digital) Post-it notes or in a notebook.
- ⊙ Focus the discussion on observed activities/practices and not possible (future) interventions. This is for a later stage.
- ⊙ When the case is project related, expected results and outputs can also be reflected upon.
- ⊙ Then paste Post-it notes or share findings and have one person fill in the details on the sheet.
- ⊙ Active facilitation is desirable. Welcome requests for help or ensure that a facilitator is included to help participants on their way.



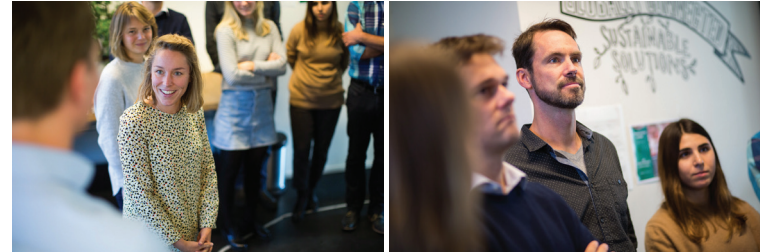
Guiding questions

- What new initiatives do you see emerging? Give as many examples as possible of sustainable and future-proof alternatives to the current system.
- Where do innovative developments really add up? Where do they become visible and accessible?
- Do you already see signs of a new normal? In both thinking, organising, and doing?
- Where is the focus on optimisation? For example, by improving the existing system instead of real transformation to a sustainable and future-proof system?
- Where do you see that previously established ideas, structures, and positions are now being abandoned, are no longer self-evident?
- Are there already narratives of breakdown and phasing out previously established ideas, structures, and positions?
- What current developments could you not have dared to predict five years ago?
- What did you expect five years ago that did not happen?

STEP 4: REFLECT ON TRANSITION DYNAMICS

Focus on the newly harvested elements to make collective reflections per system on the image that becomes visible: what are the most significant transition dynamics? Group elements according to similarities and identify clusters that stand out due to minimal or significant activity. Use guiding questions to facilitate group discussion and run a plenary session to bring together reflections.

Afterward, wrap up the session and inform participants about the next steps of the process if you are planning on diving deeper into identifying interventions with co-creation session 2. Organise knowledge management actions to harvest and analyse all the necessary data to disseminate the results of the session and provide further input for subsequent discussions.



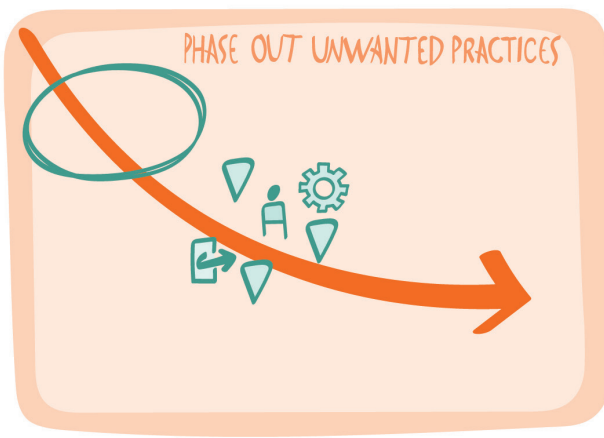
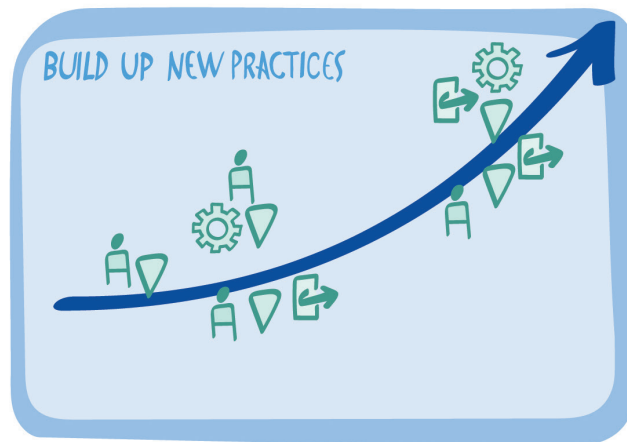
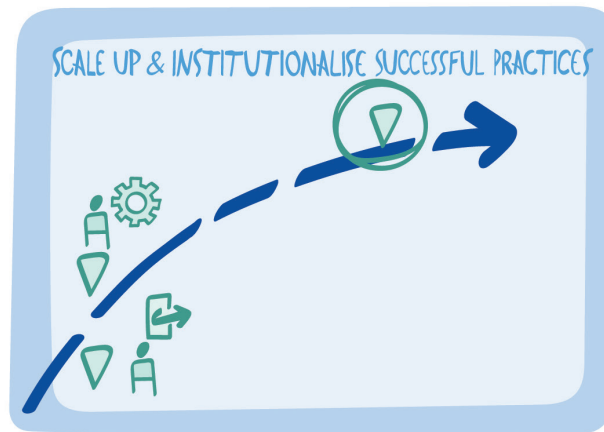
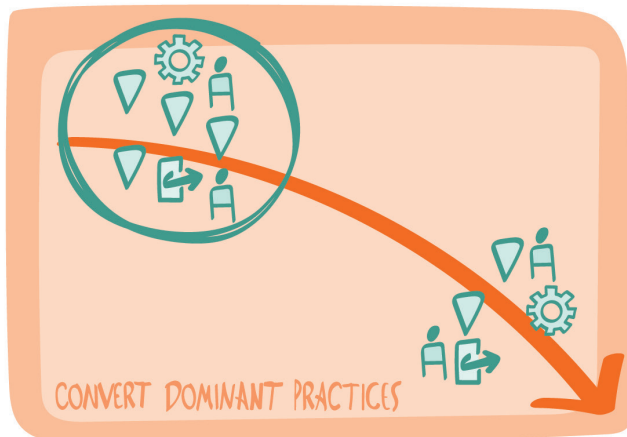
Guiding questions

- *What stands out? And what does this mean?*
- *Is this a surprising image, or expected?*
- *What are common or similar elements?*
- *What elements can be grouped together in clusters?*
- *What are the most and least populated areas?*

Based on these reflections, try to find more general insights

- *What must be changed?*
- *What must be phased out?*
- *What must be built up?*
- *What must be institutionalised?*

Blended format. If the case/project is well known by participants, mapping from initial steps can be implemented in advance through desk research and knowledge management by populating the canvas with existing information. The co-creation session can then start with a facilitated discussion around mapped elements, missing information and analysis of commonalities.



 Activity/practice
  Resource
  Actor
  Output/Result

Co-creation session 2: Identifying interventions

STEP 5: RECAP SESSION 1

Start with a short recap of co-creation session 1 through a storytelling format integrating system boundaries, key elements of the future vision and the main outcome of session one. When sessions are separated in time, knowledge management can be applied to produce some summary infographics. Use simple visualisations or summary figures to facilitate reflections on insights about the two patterns and the most/least populated areas of the X-Curve (i.e. there was a lot of experimentation, but very little attention paid to breakdown).

STEP 6: IDENTIFY INTERVENTIONS

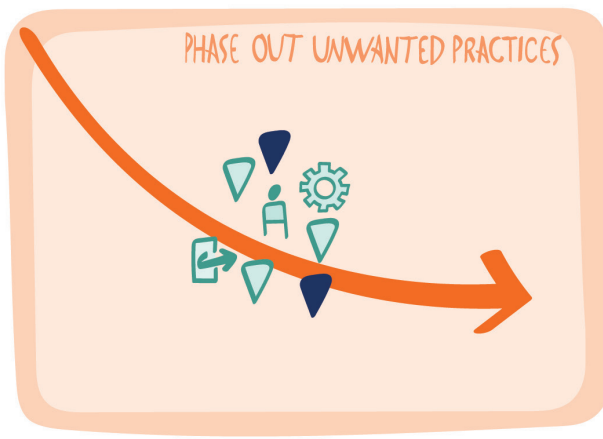
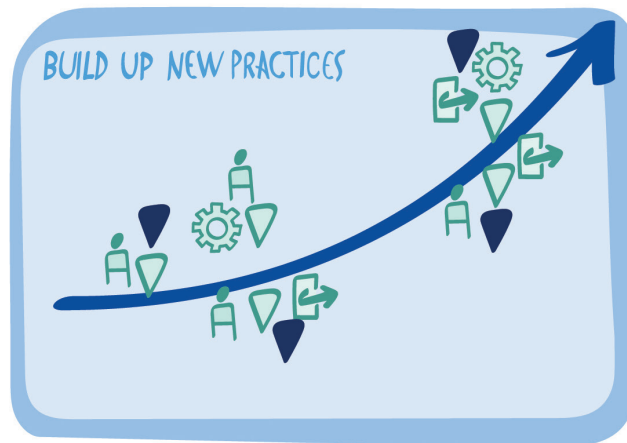
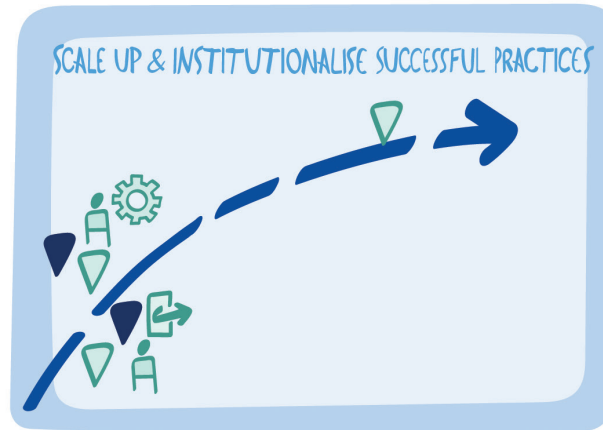
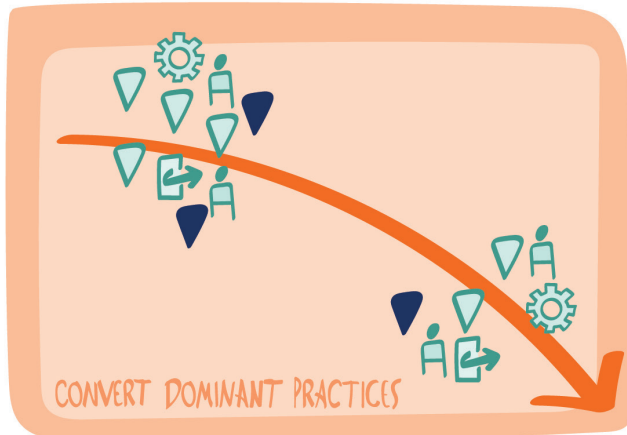
Establish a discussion regarding how to move forward into the action phase by recalling the X-Curve narrative. Each of the four quadrants represents an action perspective for working on practices, ideas and structures by following the two interrelated patterns (see figure).

Practical application

- ⊙ Set groups according to the results and setting of session 1 and let participants identify potential interventions.
- ⊙ First let participants reflect for themselves and write down ideas on (digital) Post-it notes or in a notebook.
- ⊙ Then stick up the Post-it notes or share findings, with one person writing everything down on the sheet.
- ⊙ Active facilitation is desirable. Encourage participants to request help or ensure that a facilitator is present to help participants on their way.
- ⊙ Encourage participants to think about different types of interventions by using examples and guiding questions.
- ⊙ Use any existing vision or visioning exercise to refresh key messages on desirable futures.

Guiding questions

- *What interventions can you think of to foster or accelerate transformative innovations?*
- *How can we scale up and (further) institutionalise emerging practices with transformative potential?*
- *How can we challenge the status quo? What is needed to start a fundamental discussion about the future and direction of the system?*
- *Are there also elements of the current system that we are happy to further optimise? And why?*
- *What elements of the old system need to remain? And how can we convert them to be part of the 'new normal'?*
- *How can we phase out certain ideas, structures, and positions? How do we deal with loss and losers of the transition? What possible interventions can we think of to guide this process of destabilisation and breakdown?*
- *What previously established ideas, structures and positions are already on their way out and how can we guide this final phase?*



 Activity/practice
  Resource
  Actor
  Output/Result
  Intervention

STEP 7: REFLECT ON INTERVENTIONS

The next step is to reflect per system on what type of interventions emerge as more relevant and how they make sense as part of a broad portfolio. Use guiding questions to trigger discussions among participants.

A **portfolio approach** provides a framework to transform rough preliminary ideas and prototypes into real opportunities by revealing potential synergies with the current strengths of the targeted system. It can be applied to explore, analyse and convert strategic priorities and objectives into innovation activities that are project-based. Not only does it look at the composition of the portfolio (list of innovation projects, initiatives or investments) and related problems, it also analyses what in the system and the relational structures allows a portfolio to be successful in the long term.

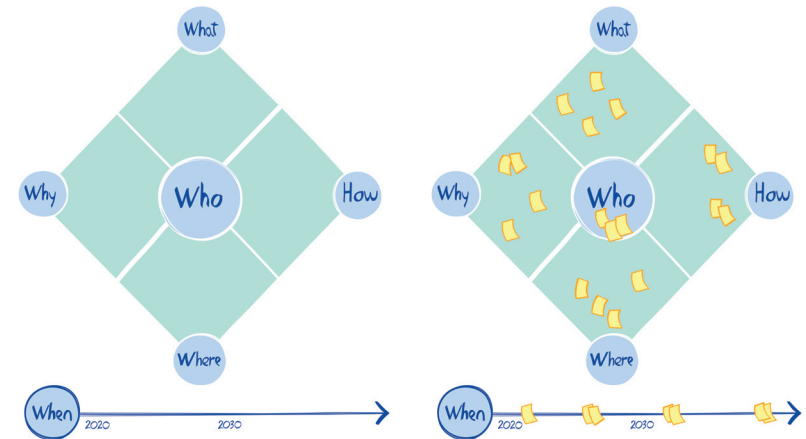
Guiding questions

- *What interventions are more long-term, and which interventions are possible now?*
- *Which interventions match the skills/competencies/strengths of the participants, and for which interventions are we dependable on others/third parties?*
- *How do interventions address the needs for new knowledge & skills?*
- *Which concrete actions can we derive from this exercise and who can/should take them? Which funding/financial resources can be mapped out for those interventions?*
- *How can intervention facilitate innovative business models?*
- *What interventions enable systemic collaboration and new governance models?*
- *What are the alignments with existing local, national, and European/global policy frameworks? (i.e. smart specialization, covenant of mayors, SDGs, circular economy action plans)*

STEP 8: MAIN TAKEAWAYS AND FOLLOW-UP

Finish the session by having participants exchange reflections on insights and lessons learned during the process. Focus on analysing the main insights in terms of action perspective, their potential and implications for their own role in fostering transitions.

For the project-based discussion, participants can prioritise which interventions are more feasible and suitable. Individual prototyped interventions can be presented in a new canvas sorting out key elements such as WHAT, WHO, WHERE, WHEN, HOW. A follow-up step can include an in-depth co-creation session to move forward with those prototypes.



Programmes/agenda for co-creation sessions

Co-creation sessions can be implemented by following the steps outlined in this document. Suggested workshop programmes are presented in the figure below.

For project-based contexts, an alternative setting is suggested. System mapping, visioning exercises and other input coming from project activities can be put together before the co-creation session, thus facilitating conversations in which participants can review the status quo and co-design potential interventions.

	Time	Activity	Project-based alternative setting
Session 1 Identify transition dynamics	In-advance	Step 1 Defining system boundaries	20 min. Step 1-3
	20 min.	Welcome, introduction transition thinking & X-Curve	Desk research. Present prepopulated canvas and existing shared vision.
	30 min.	Step 2 Discuss future vision	
	40 min.	Step 3 Identify transition dynamics	
	10 min.	Step 4 Reflect on transition dynamics	40 min. Step 4
	10 min.	Adhere more general insights	Discuss identified transition dynamics, suggest new elements and changes
	10 min.	Wrap-up/looking ahead	
Session 2 Identify interventions	30 min.	Welcome & refreshing transition thinking	
	40 min.	Step 5 Re-cap session 1	
	40 min.	Step 6 Identify interventions	
	40 min.	Step 7 Reflect on interventions	
	20 min.	Step 8 Main takeaways & follow-up	30 min. Step 8
	10 min.	Wrap-up/looking ahead	Follow-up path. Individual prototyped interventions includes initial elements: WHAT, WHO, WHERE, WHEN, HOW.

Team and resources

Consider that for the facilitation of both co-creation sessions you might need at least to cover three roles:

- 🕒 **Content expert:** focusing on supporting participants to better understand the societal system under study.
- 🕒 **Process facilitator:** focusing on facilitating the overall workshop by using facilitation methods and taking into consideration group dynamics.
- 🕒 **Reporter/storyteller:** focusing on providing examples and harvesting while supporting the participants to share their insights and reflections.

Prior knowledge and skills. Delivery team must have some basic knowledge on sustainability transitions to design and implement the X-Curve. Additionally, analytical and strategic thinking as well as expertise on policy analysis is required.

Materials. The following are the suggested materials to prepare before a workshop:

Workshop type	Materials and resources
In-person	<ul style="list-style-type: none"> • Printed X-Curve with four quadrants for each group of participants. • Post-its, markers and pen; flipcharts
Digital	<ul style="list-style-type: none"> • Digital canvas with X-Curve with four quadrants for each group of participants. (e.g. using online whiteboards) • Clear instructions for participants regarding where and how to access this canvas
Both formats	<ul style="list-style-type: none"> • For session 1: narrative or vision for the selected cases • For session 2: Infographics, posters or visualization of results from session 1

Tips & tricks for facilitators

- 🕒 When explaining the X-Curve model to participants for the first time they might feel a bit confused. Give them time to reflect and share examples of transition dynamics related to their daily life or to their context.
- 🕒 Continuously ask guiding questions supporting the participants to critically reflect and go beyond their comfort zone when identifying transition dynamics.
- 🕒 Digital platforms for online interactions and workshops allow the process to move from a single workshop to a continuous and flexible process. The full co-creation process can be designed as a collection of workshops, conversations and desk research.

Knowledge management, sensemaking and learning

As a sensemaking tool, the X-Curve can be a powerful tool for harvesting data, analysing learning process and communicating insights and new knowledge on transition dynamics to a broad audience.

- 🕒 The X-Curve can be applied in project-based desk research to present a case through a storytelling format.
- 🕒 The X-Curve can be applied for single or multiple projects with data harvested from a pre-existing system mapping process.
- 🕒 X-Curve storytelling can be used for capacity building actions to explore the common understanding of key concepts and negotiate meaning among different stakeholder perspectives.
- 🕒 Sensemaking can be applied in different stages of a project's development, including the design, implementation and analysis of a broad portfolio of actions.
- 🕒 Identified interventions can be the starting point for prototyping specific actions by combining tools and methods for policy co-design and sustainable business models.



EXAMPLES OF APPLICATION

Interactive exercise - transdisciplinary research

Critical think on who to transform the science

- What:** Interactive session as part of a three-day online course organised by DRIFT
- How:** Online workshop
- Who:** 20 participants (post-doc researchers)
- Topic:** How to transform science – several empirical examples

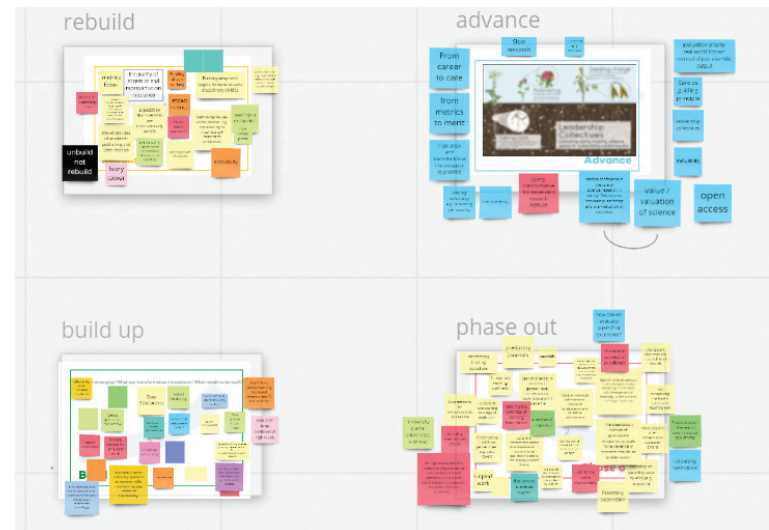
The interactive session was organised after an introduction to transition action research as well as the basic transition theoretical concepts and several empirical examples of transition processes in energy, mobility and food sectors. As part of the interactive exercise using the X-Curve model, participants have been divided into four different groups (breakout rooms) of 3-5 people each. Framing questions are used to guide the discussion on transitions among the different quadrants of the X-Curve.

Group assignment: imagining the science transition

<p>4. What do we need to change and adapt or modify to make this all happen?</p> <p>Rebuild</p>	<p>1. What are the guiding principles, what is your radical transition future?</p> <p>Evolve</p>
<p>3. What is emerging, what are transformative innovations and what needs to be built?</p> <p>Build up</p>	<p>2. What needs to go, should be phased out and has to be broken down?</p> <p>Phase out</p>

The exercise allowed each group to interact with the work of the other groups by managing several rounds of interaction:

- ⦿ Four rounds of 15 minutes each. In each round, the group of participants focused their attention on one quadrant of the X-Curve (i.e. advance, phase-out, build-up, rebuild) by trying to answer the guiding questions.
- ⦿ In the new round, participants would move their attention to another quadrant/phase of the X-Curve and build on the work developed by the previous group. The results of the group session can be seen on the Miro board.



TOMORROW project - Cities

2050 transitions roadmap toward climate neutrality

What: multi-stakeholder mapping process

How: mapping exercises & desk research

Who: Six cities (Dublin, Mouscron, Valencia, Brest, Nis and Brasov)

Topic: Cities and low-carbon economy

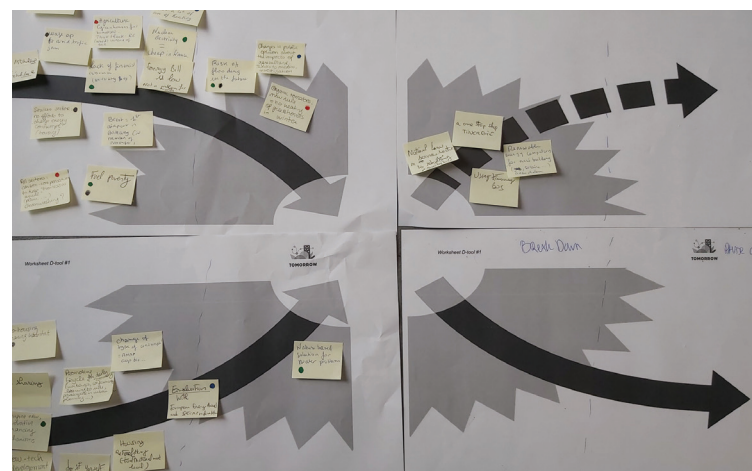
The **TOMORROW project** aims at supporting six cities to develop 2050 transition roadmaps towards climate neutrality together with citizens and other local stakeholders. These cities also represent pilots for the development of other transition governance processes in other European cities. The X-Curve framework has been adapted as part of the TOMORROW project to support the six local authorities to map the transition dynamics in their city, better understanding how to influence these dynamics and how to integrate them in their transition roadmapping processes.

The adapted framework consists of two stages.

- 🕒 **Stage 1: mapping characteristics.** Cities identify and analyse existing and dominant dynamics in a system.
- 🕒 **Stage 2: defining system needs.** Based on the system characteristics that have been identified, the local authority can then formulate the system needs.

Understanding the system needs allows cities to determine how a roadmap can be of best use: what purpose it can have in the systems' transition. Accordingly, being familiar with what the needs are in the system allows the local authority to make a more informed decision on what transformational activities to initiate to accelerate transition dynamics.

Example of system needs	
1. Create space for experimentation	2. Ensure just transitions
3. Develop shared understanding/narrative/strategy	4. Create/influence legal, administrative and market changes and phase outs (regulations, financial streams, laws)
5. Raise awareness of different stakeholders	6. Establish a new 'business as usual' in people's lives
7. Raise political and societal commitment	8. Break down or repurpose existing physical infrastructures
9. Create networks/alliances	10. Have clear strategies to navigate the phasing out of specific sectors/activities
11. Ensure niche embedding	12. Respond to discrepancies and unforeseen side effects of institutionalising of new configurations



Rethinking a theory of change with transition dynamics

What: Mapping and co-design of theory of change
How: Series of online workshops
Who: 16 people participants from project consortium
Topic: Sustainable land use

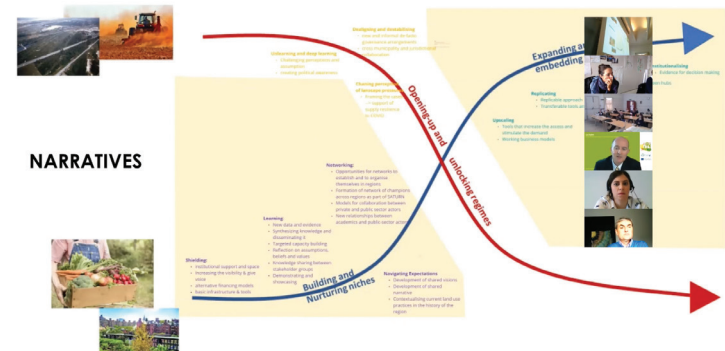
SATURN is an EIT Climate-KIC project whose main objective is to support cities in their delivery of climate and SDG targets by developing a city-rural coalition and a programme to help cities exchange, synergise and implement concrete solutions. For that, the project integrated pilots from three cities: Birmingham (UK), Gothenburg (SE) and Trento (IT). Figure 1 shows the project's initial theory of change, while Figure 2 illustrates the use of the X-Curve as an online visual tool to co-create a new theory of change:



A series of online workshops re-evaluated with the different local hubs various aspects of the work and impact of SATURN by using the X-Curve.

There were two relevant outcomes:

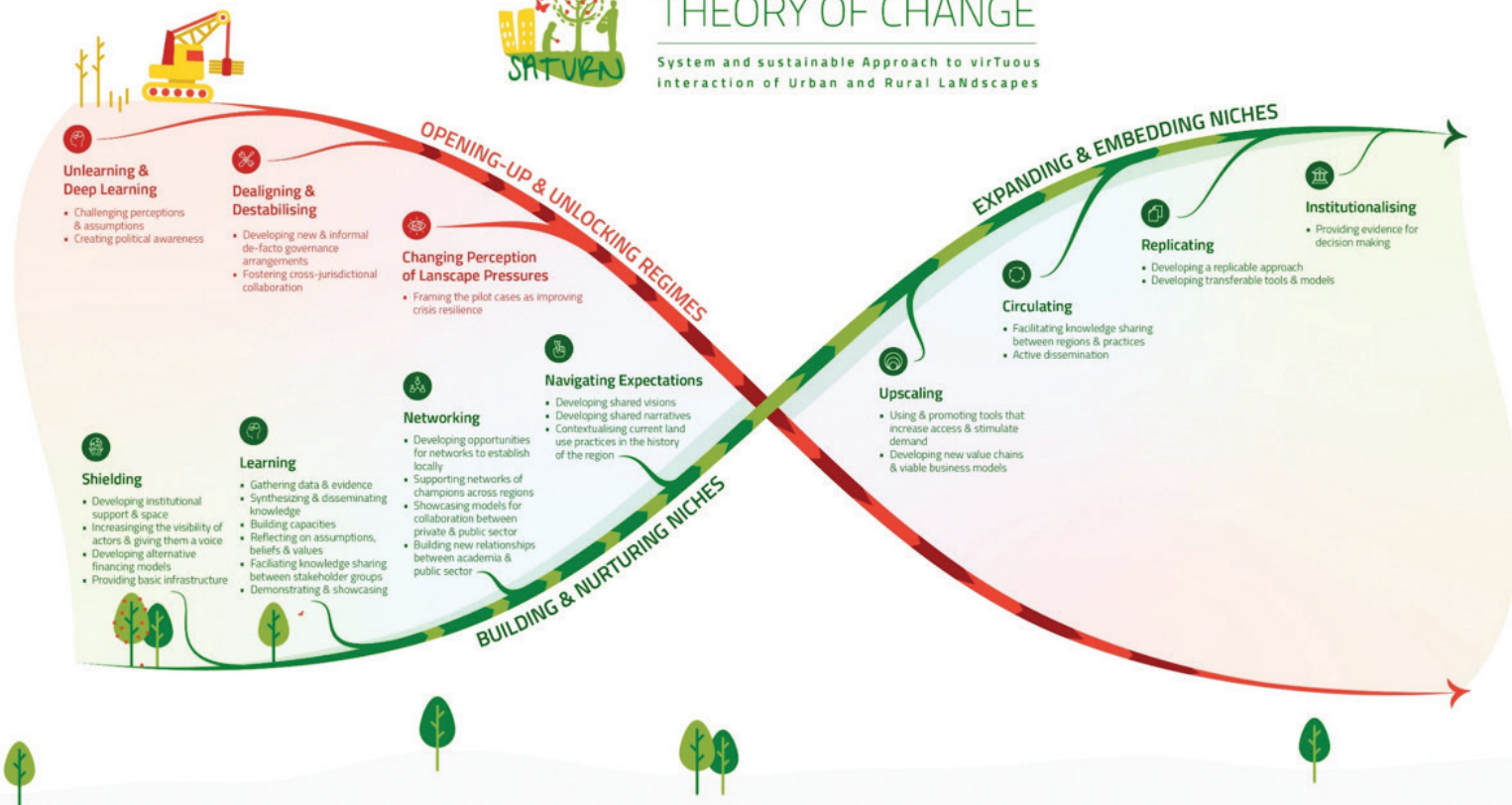
1. An updated theory of change for the whole project with a focus on transformation processes such as circulation, upscaling or networking inspired by the transformative outcomes as developed by sustainable transitions theory and TIPIC (see Figure 3).
2. Identification of three transformative pathways that revealed the impact of SATURN at niche level and the potential to further effect change in the overall regime.





THEORY OF CHANGE

System and sustainable Approach to virtuous interaction of Urban and Rural Landscapes



Adapted from Loorbach (2014) and Ghosh et al (2020)
Produced by the MOTION project, in collaboration with SATURN.



Transition dynamics
 complex, uncertain and non linear



- Zero emission
- Healthy
- Affordable
- Social
- Inclusive
- Safe

