



# Transdisciplinary research – a short introduction

Josefine Fokdal

Copenhagen, 27.02.23

# Overview

- 1) Transdisciplinary research
- 2) Transdisciplinary research processes
- 3) Different types of knowledge
- 4) Co-production of knowledge
- 5) Methods for co-producing knowledge
- 6) Relevance for DASH
- 7) The next couple of days



# 1\_Transdisciplinary research

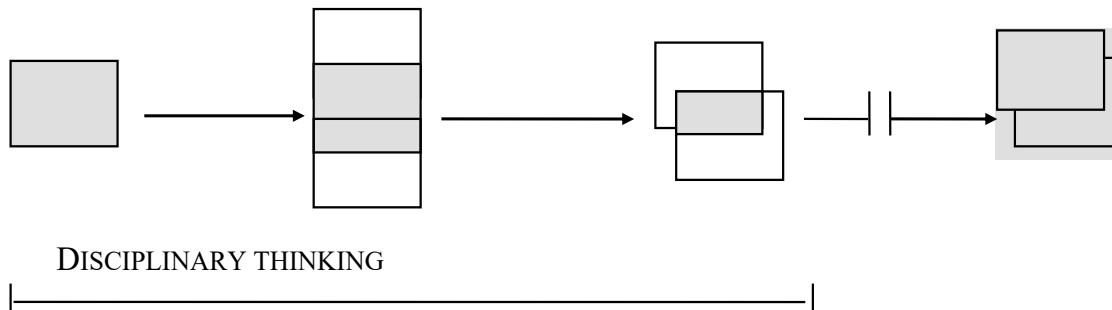


What is your experience with transdisciplinary research?



# From discipline to transdisciplinary

DISCIPLINE    MULTIDISCIPLINARITY    INTERDISCIPLINARITY    TRANSDISCIPLINARITY



(BY COURTESY OF THIERRY RAMADIER)

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# Interdisciplinarity

Lack of consensus about interdisciplinarity, but there is a shared view about some key components:

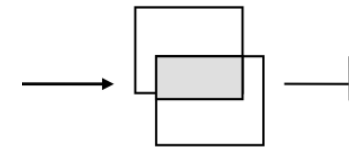
Interdisciplinary contributions focus on subjects that are too **complex** to be answered satisfactorily by any one discipline.

Interdisciplinary research - assimilating specialized research from at least two disciplines. Specialized research is performed by communities of scholars who share a set of guiding questions, concepts, theories, and methods.

Processes involve **communication** and **dialogue** between people trained in at least two disciplines.

Interdisciplinary research uses **discipline-based theories, concepts and methods.**

INTERDISCIPLINARITY



# Transdisciplinary

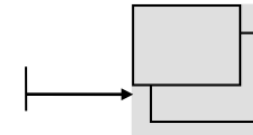
**Integration** of scientific knowledge with professional know-how (instrumental knowledge) and tacit knowledge (local knowledge) & ethical knowledge (social norms) & aesthetic knowledge using multiple research methods and tools.

**Dialogue** between scientists, professionals and groups in society to build consensus and a shared understanding.

Concern with **real world challenges** (e.g. housing, urbanization, climate change etc.) and links theory and practice.

Importance of **contextual conditions** of localities, or situations, or themes.

TRANSDISCIPLINARITY



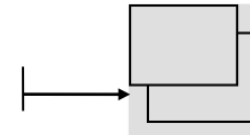
# Transdisciplinarity

**A different kind of knowledge production** for improved understanding of complex questions for action – concern with ‘societal impact’ by

- 1) questioning the normative nature of knowledge production;
- 2) recognizing the gap between the perceived problem in science and practice and
- 3) by producing knowledge for the common good.

The necessity to open the process of urban knowledge production to a wide range of actors that have an interest in city making beyond academia and so-called specialist.  
(based on Hoffmann-Riem et al. 2008).

TRANSDISCIPLINARITY

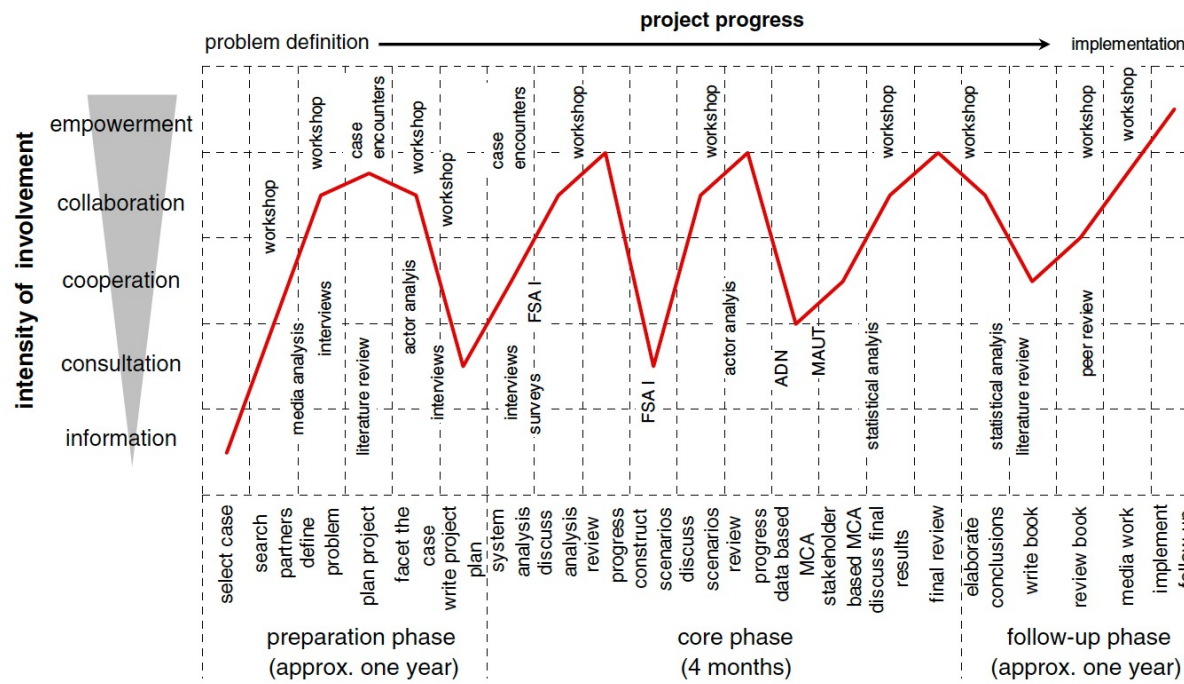




## 2\_Transdisciplinary research processes



# Transdisciplinary research processes



Stauffacher et al, 2008: the intensity of involvement of different actors can differ over time

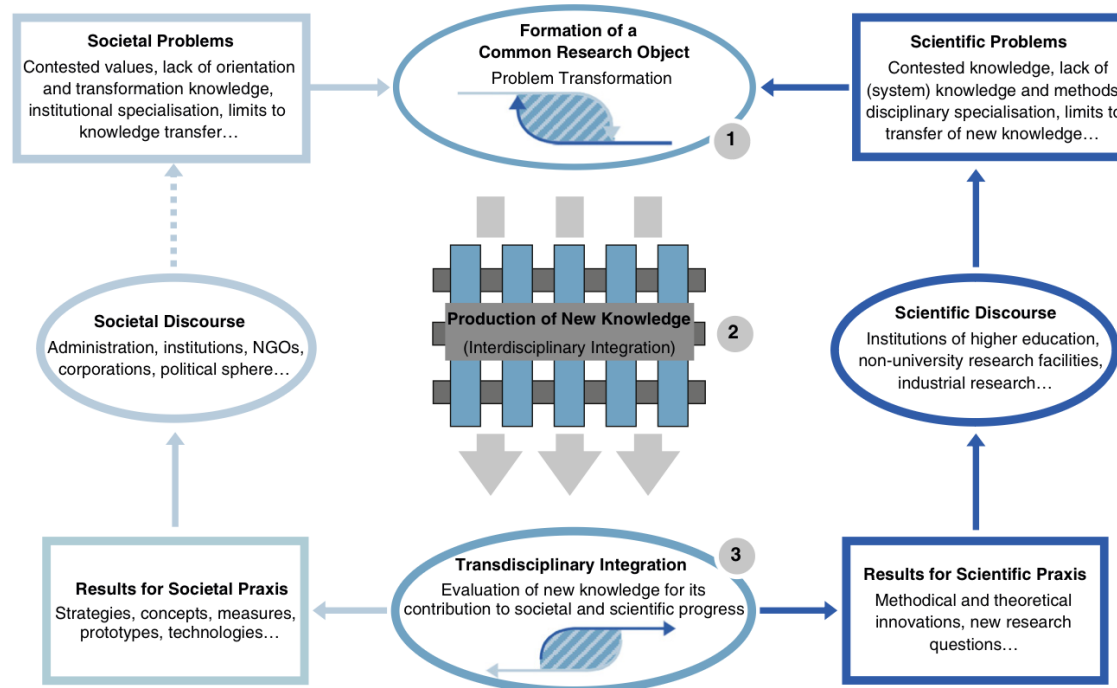
**Fig. 1** Varying degrees of involvement and selection of applied techniques in the case study on landscape development in Appenzell Ausserrhoden



# Transdisciplinary research processes

T. Jahn et al. / Ecological Economics 79 (2012) 1–10

5



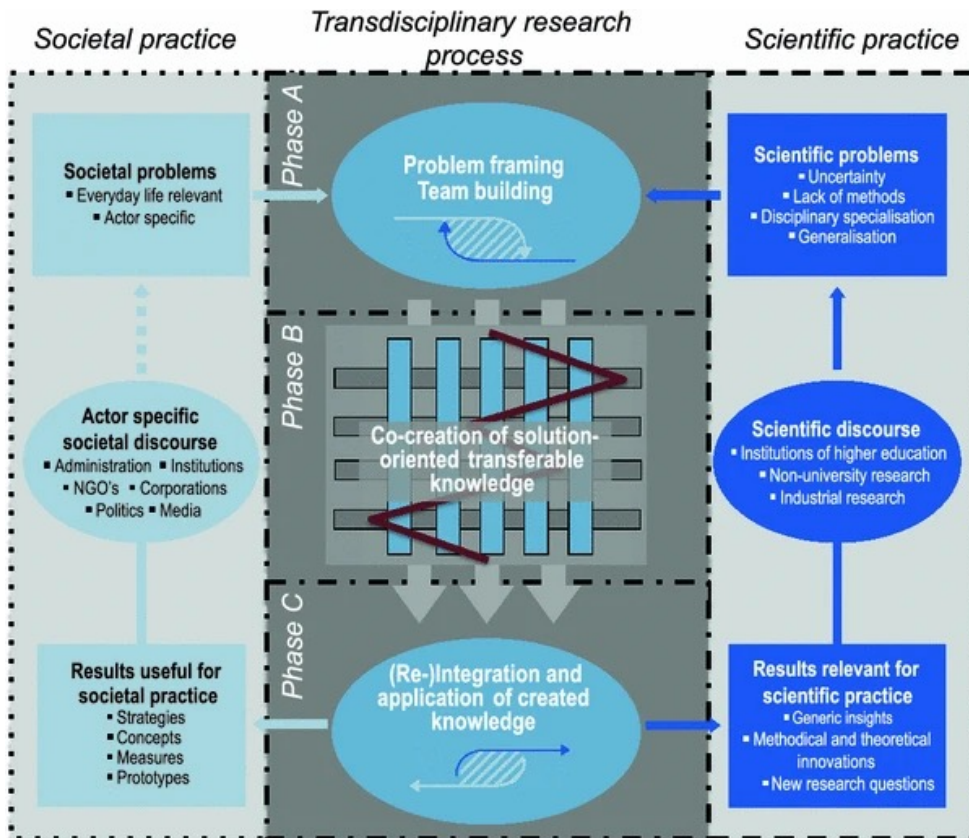
Jahn et al 2012:  
systemic  
understanding of the  
process

Fig. 1. A conceptual model of transdisciplinarity (modified according to Jahn, 2008). The numbers indicate the three phases of the ideal transdisciplinary research process (see text for explanations).

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# Transdisciplinary research processes



## Phase A:

- Joint problem framing ( built a collaborative research team, build a joint understanding and definition of the problem, create a common language, define boundaries of the research object, design a methodological framework for collaborative knowledge production and integration)

## Phase B:

- Co-creation / co-production of knowledge: (assign roles and apply and adjust integrative research methods)

## Phase C:

- Application / Implementation of created knowledge (generate relevant outcomes according to different interests and needs and evaluate).

(BY LANG ET AL. 2012)

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# Challenges to transdisciplinary research processes

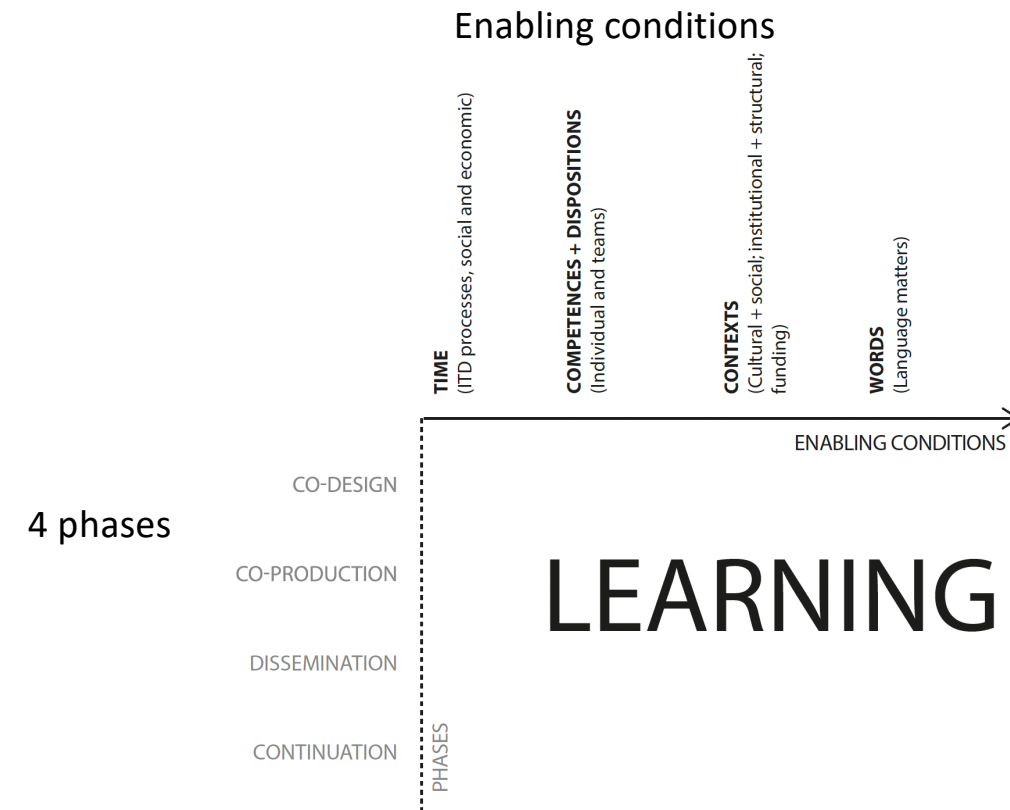
- Unbalanced problem ownership
- Lacking common language
- Insufficient legitimacy of the team or actors involved
- Unaddressed power / legitimacy issues
- Conflicting methodological standards
- Discontinuous participation (especially due to time limitations)
- Fear to fail
- Lack of trust
- ...



Transdisciplinarity is a messy and blurry reality



# What matters (the most) when designing a transdisciplinary research process?



What seems to matter the most:

„The capacity to address the four issues and to turn them into enabling conditions at some point in time (in preparation, during and after).“



Time -> different forms of time (social, economic, etc.)

Competences that can be taught ->

- Communication (internal / external)
- Leadership and management
- Facilitation (crucial for co-production of knowledge)
- ...

Dispositions that are aquired through experiential learning  
(or individual characteristics) ->

- Normative competency
- Systems thinking competency
- Interpersonal competencies
- Stategic competency
- Anticipatory competency
- ...

(based on Reid et al., 2011)



Self-reflection, trust and humility

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# Context and words matters

## A predisposition to learning ->

- as an individual
- in teams
- in society

“The individual willingness to learn combined with certain dispositions ( trust, humility and self-reflection) seem to promote the necessary openness towards other disciplines and types of knowledges” (Fokdal et al. 2021)

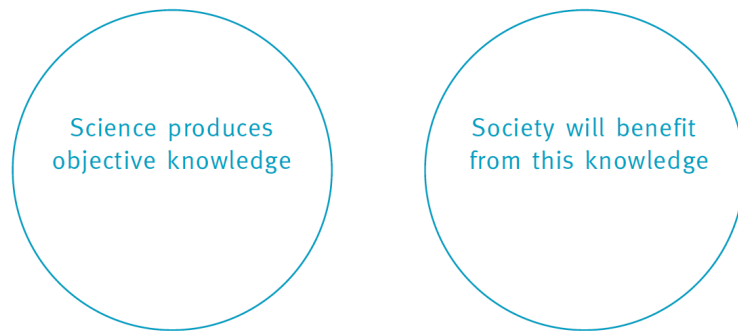


# 3\_Modes and different types of knowledge

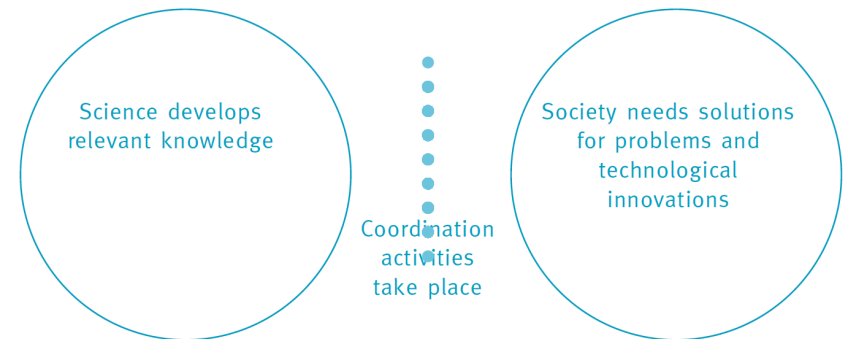


# Modes of knowledge production

## Mode 0



## Mode 1

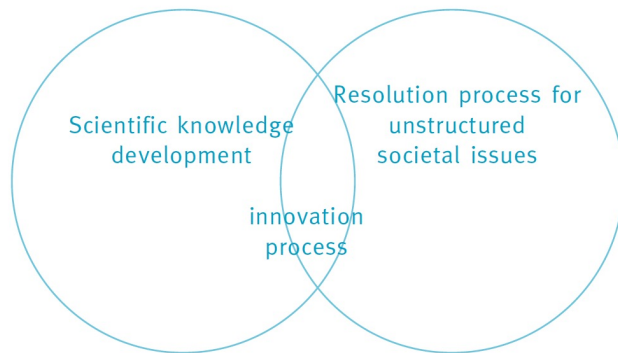


Source: Bunders and Reegers, 2009.



# Modes of knowledge production

## Mode 2



Source: Bunders and Reegers, 2009.

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# Who has knowledge?

	Who has knowledge?	What is knowledge?
Mode-0	Scientists have knowledge	Knowledge is objective and can be generalised Internally driven
Mode-1	Scientists have knowledge Society has questions	Knowledge is objective or subjective (explicit) Sometimes internally and sometimes externally driven
Mode-2	Different scientists have different knowledge Both scientific knowledge and experiential knowledge are relevant	Knowledge is context- and person-related (implicit and explicit) Knowledge is inter-subjective Opinions, ideas and facts are difficult to distinguish Combination of internal and external drive

Source: Bunders and Reegers, 2009.



# Different types of knowledge

Individual knowledge  
Community knowledge  
Organizational knowledge  
Holistic knowledge

Transformative knowledge  
Experiential knowledge  
Expert knowledge  
Scientific knowledge  
Tactical knowledge  
Specialized knowledge

Informal knowledge  
Lay knowledge



# 4\_Co-producing of knowledge

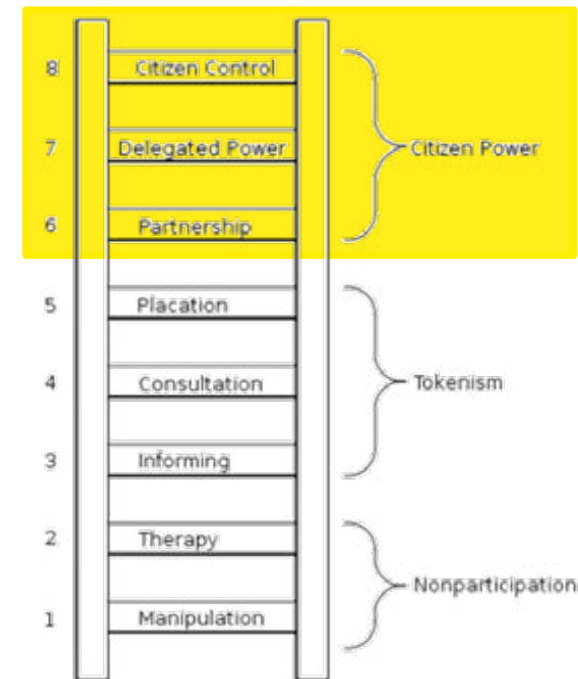


# Beyond participation, towards co-production

*The term has acquired different meanings and is often used interchangeably with co-creation (Nesti, 2017).*

The concept of Co-Production is

- discussed as a means for involving individual citizens and or/groups of citizens in **public service delivery**
- more recently, interpreted as an **instrument of urban governance and policy framing.**
- identified as distinct **approach to knowledge building and research** (Galuszka, 2018)



Source: Arnstein 1969: 4 - modified

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# Co-production in practice and research

Koproduktivität in Stadtentwicklung und Forschung		
Themen der Beteiligung	<i>Koproduktive Stadtentwicklung</i> <ul style="list-style-type: none"> <li>• Armutsbekämpfung, soziale Inklusion usw.</li> </ul>	<i>Koproduktion in der Forschung</i> <ul style="list-style-type: none"> <li>• Energieversorgung, Mobilität, Flächennutzung usw.</li> </ul>
Zeitraum der Beteiligung	<ul style="list-style-type: none"> <li>• in einzelnen Phasen oder über den gesamten Planungsprozess hinweg, oft durch zivilgesellschaftliche Akteuren initiiert</li> </ul>	<ul style="list-style-type: none"> <li>• Mit dem Anspruch, über den gesamten Forschungsprozess hinweg Koproduktion zu sichern, oft von der Wissenschaft initiiert</li> </ul>
Ziele der Beteiligung	<ul style="list-style-type: none"> <li>• Befähigung, Teilhabe</li> </ul>	<ul style="list-style-type: none"> <li>• Transformation zur Nachhaltigkeit, Lösungen für die komplexer werdende Stadt</li> </ul>
Beteiligte Akteure	<ul style="list-style-type: none"> <li>• Zusammenarbeit zwischen Stadt und Zivilgesellschaft</li> </ul>	<ul style="list-style-type: none"> <li>• Zusammenarbeit zwischen Wissenschaft und Praxisakteuren</li> </ul>

Fokdal / Ley 2018

3 Gegenüberstellung koproduktive Stadtentwicklung / koproduktive Forschung

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# EX: Slum dwellers international (SDI) – enumerations



Source: Josefine Fokdal

“When communities own their own information, they are able to gather more accurate information, and become active partners in planning their development.”

(<http://www.sdinet.org/> method-community-planning/)



# EX: LAB on Sustainable Mobility Cultures



Source: Josefine Fokdal

Lab: 2015-2018 hosted at the Department of International Urbanism

Experiments as the mode of transformative science

The real world laboratories situate themselves within the tradition of action and intervention research (Parodi et al. 2017).

- > Transformation towards sustainability
- > Transformative knowledge for change

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# 5\_Methods for co-producing knowledge



## Methods and tools for co-producing knowledge

Collaboration between experts and stakeholders from science and practice for tackling real-world, context-sensitive societal challenges. [more](#)

Image: td-net

Search by key issues   Search by phases   **td-net toolbox (method profiles)**

Shared experiences   +   Comments

> Homepage > Methods > td-net toolbox (method profiles)

## td-net toolbox

The methods and tools offered by the td-net toolbox  
assist in conducting research and evaluating ways



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# DIFFERENT SCALES, DIFFERENT METHODS..

Strategic

Planning

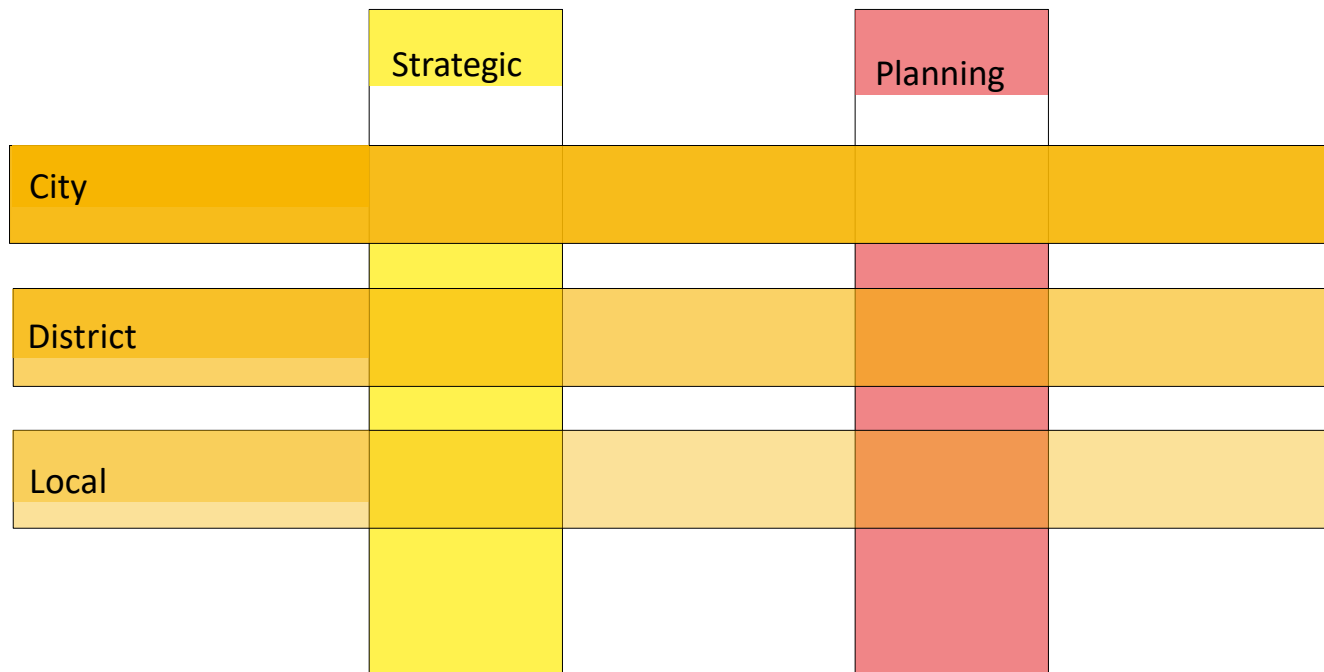
City

District

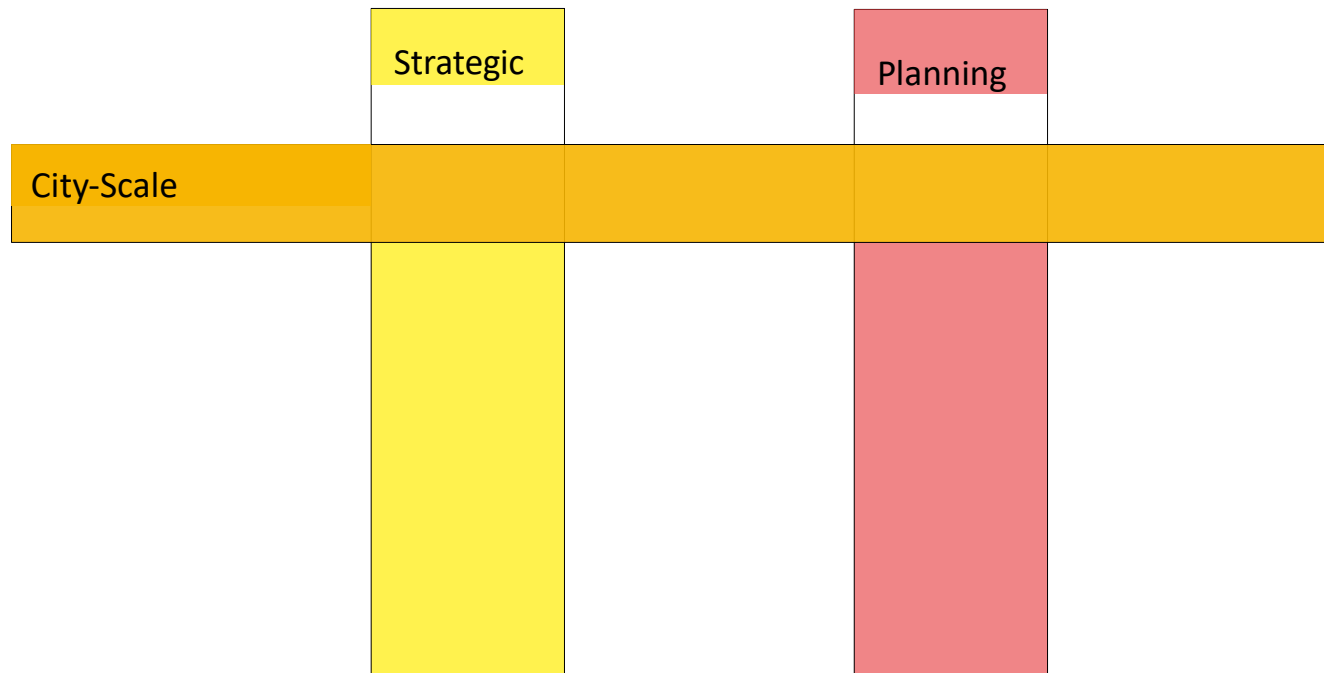
Local



# *DIFFERENT PURPOSES, DIFFERENT METHODS..*



# *LET'S START WITH THE CITY-SCALE...*





# CITY FORUMS



Source: Urban Catalyst

## What?

- Method to discuss the future of cities or a particular theme of relevance (e.g. housing, land use, mobility) on a political level.

## Why?

-to ensure citizens are involved in normative debates and decisions concerning the future development of the city  
-to include different types of knowledge and perspectives in visioning processes

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# CITY FORUMS



Source: Urban Catalyst



Source: Urban Catalyst



Source: Urban Catalyst

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# CITIZEN ASSEMBLIES



Source: <https://www.wedodemocracy.dk/home-1>

## What?

- method of deliberative democracy in which a body of citizens comes together to deliberate on a given issue and provide a set of recommendations, options, or a collective decision to the convening body
- application of quasi-random selection mechanism like sortition

## Why?

- to ensure the group is broadly representative of the population
- to increase trust in democratic institutions and raise acceptance for decisions

[www.wedodemocracy.dk](http://www.wedodemocracy.dk)

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# E-PARTICIPATION



Source: <https://decide.madrid.es/>

## What?

- process of engaging citizens through ICTs [Information and Communication Technologies] in planning, policy and decision-making processes
- can range from participatory budgeting, voting on planned planning processes or investments

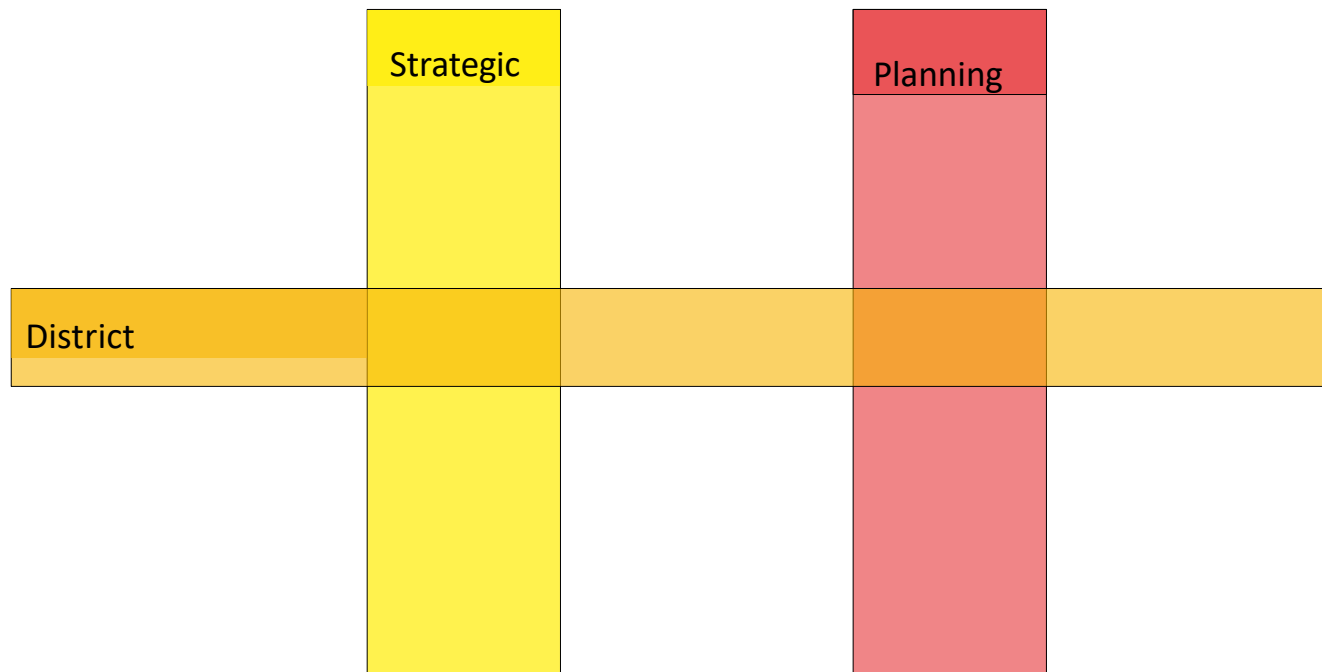
## Why?

- to enable citizens to become actively involved in the planning and decision-making processes
- to enhance transparency and accountability

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# *THE DISTRICT-SCALE...*



# FUTURE WORKSHOP



Source: <https://www.usabilis.com/conception-participative-utilisateurs/>

## What?

- method used for collective decision-making and problem solving that gives the participants the opportunity to contribute and cooperate in order to draw a desirable future and find a way to implement it

## Why?

- allows finding new ways to examine a problem and encourages participants to use their creativity and imagination

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# PLAY THE CITY / DISTRICT GAMES



[https://www.youtube.com/watch?v=wDi2Ttn\\_YF0](https://www.youtube.com/watch?v=wDi2Ttn_YF0)

## What?

-A board game for collaborative city-making that merges urban rules with interactive, playful negotiation  
-applicable for urban expansion, regeneration, transformation, temporary use, and new developments

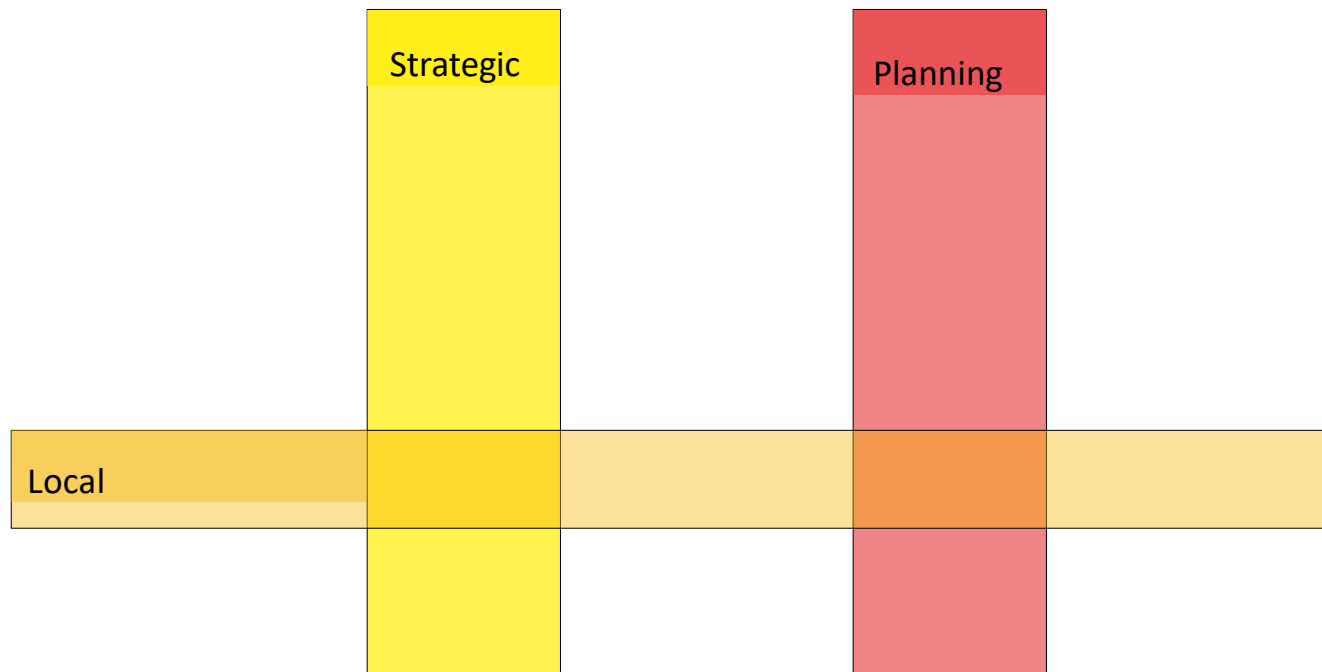
## Why?

- to integrate existing power relations into the dynamics of play.  
-to visualize urban processes realistically and take into account existing interests.  
-to reveal existing rules, propose new or simulate others for particular urban situations

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# THE LOCAL-SCALE





# REAL-WORLD EXPERIMENTS



Source: Kaoshiung City Government

## What?

- Experimental interventions in the public realm attempt to innovate, learn or gain experience by trying something out
- Can trigger transformative change processes

## Why?

- provide a fertile ground for different actors to collaboratively search for, negotiate and produce imaginaries and narratives of desirable future
- facilitate collaborative and agile planning approach
- translate abstract discussions into tangible subject

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# WALL OF IDEAS/ MAP OF IDEAS



University of Stuttgart | SI + ILPÖI

Source: [www.urbancatalyst.de](http://www.urbancatalyst.de)

## What?

-urban intervention in the neighborhood serving as interactive platform for collecting wishes and suggestions concerning public spaces in the area

## Why?

-allows to gather constructive suggestions of residents in a short amount of time and in a playful way  
-helps involve residents in the spatial planning process of the environment that they live in  
-collected wishes help organisations or local authorities to align action plan for future activities in the area accordingly

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# PLANNING FOR REAL (PFR)



Source: Planning for Real 136 by Katy Wrathall via flickr, CC BY-NC-ND 2.0

## What?

- Tool supporting communication and an atmosphere of shared action between neighbors, experts and other local actors
- applicable for residential environment improvement, remodelling of existing places...

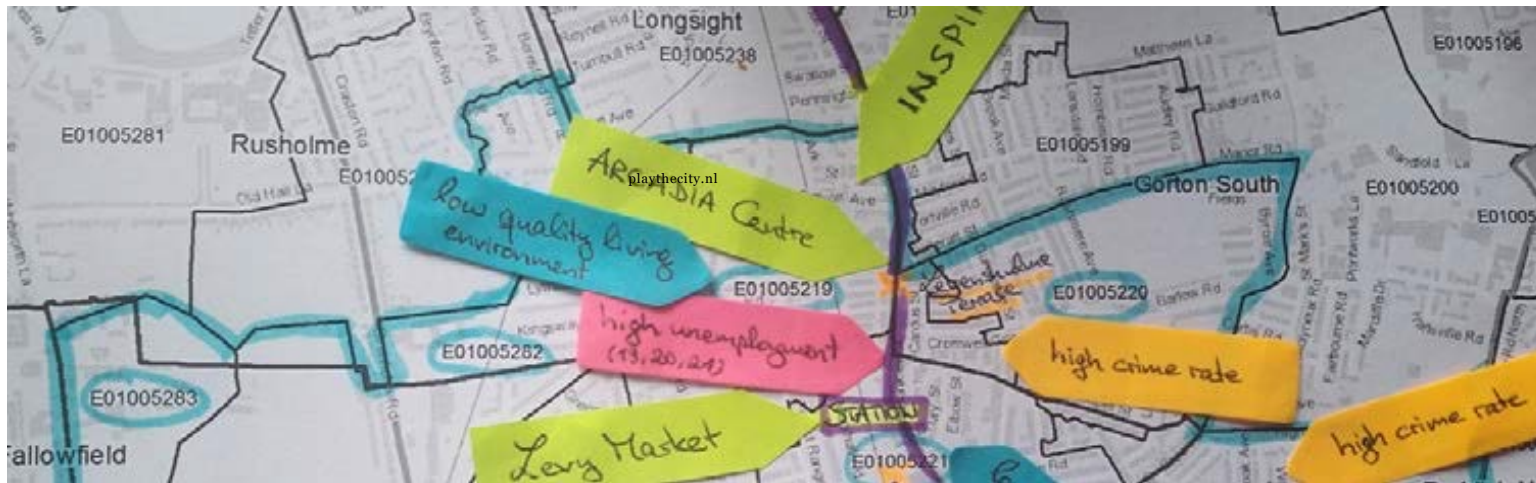
## Why?

- expand and promote participation opportunities of residents in development & improvement of neighborhoods
- accessible to people of all ages, abilities & backgrounds.
- useful to build a sense of ownership and enables participants to identify issues and prioritize actions

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# CITY WALKS AND PARTICIPATORY MAPPING



Source: <https://parcitypatory.org>

## What?

- A technique for observing and mapping the urban qualities of an area through walking

## Why?

- to understand and assess existing qualities and features of an area (positive and negative)
- take perceptual knowledge into account
- empower communities

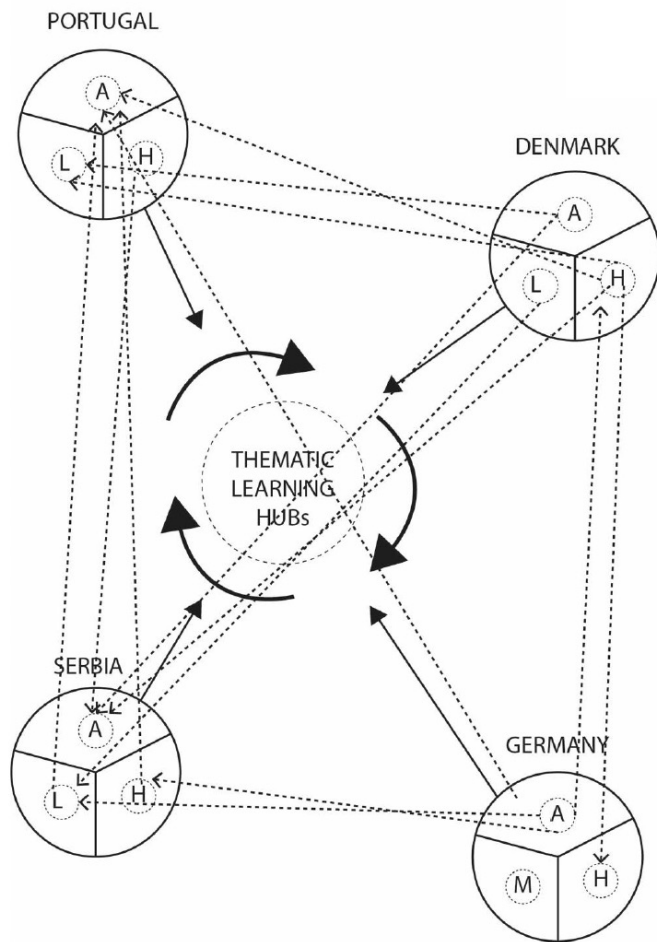
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# 6\_ Relevance for DASH



# DASH – 3 different scales



	Individual	Collective
International	Secondments	Future Workshops
National		„Learning hubs“
Local		Future Workshops

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# DASH – Thematic Learning Hubs

**University of Aalborg, Denmark** – Workshop on “Legal framework models and innovative housing policies.”

**University of Stuttgart, Germany** – Workshop on “Upgrading the existing housing stock and sensitive rehousing models.”

**University of Lisbon, Portugal** – Workshop on “The role of private sector housing associations in delivering below –market rent options.”

**The Serbian Academy of Sciences and Arts, Serbia** – Workshop on “Co – production of social housing taking local context and culture into account.”



# DASH – future workshops

Targeting **objective 2**: Affordable, inclusive, safe and sustainable and **objective 3** Learning about and coproducing housing.

**Research question 4**: How are key concepts such as “affordable”, “safe”, “inclusive” and “sustainable” understood in relation to housing provision in participating countries and cities, and among stakeholders? Moreover, to what degree are key principles implemented in practice? How is housing provision linked to issues of spatial segregation and discrimination against marginalized groups?

**Research question 5**: How do those within academia and those outside it (residents, the private sector, NGOs, etc.) perceive the discourse around disadvantage, and how do they influence decisions in the private and public sectors?

**Research question 6**: What lessons can be learned for the future? Which cities are successfully achieving SDG 11? What enabled particular cities to include and / or empower disadvantaged groups during the decision-making process? Who were the main driver(s) of delivering affordable housing and did they meet any serious obstacles? If so, what were they?





# EX: Future Workshop on ,people centred cities‘ organized for the Robert Bosch Foundation

1)Critical phase, i.e., an examination of the status quo, for example of how the state regulates, supplements and influences the current housing market;

2)Fantasy phase, in which current constraints (e.g.institutional, legal, financial) are purposefully ignored to facilitate out-of-the-box thinking;

3)Implementation phase, in which participants check the feasibility of the idea and identify the steps for implementation.

## Participant's Profile

**Name:** ...

**Disciplinary background:** ...

**A. What do you *understand* by the term "participatory design of people-centered cities"?**

...

Please list **3 quality criteria** of participatory design you consider most relevant:

1) ...

2) ...

3) ...

**B. In which of the *three areas* would you be most interested in working on during the workshop and/or have experience to share (*please mark with x*)?**

The future of participatory design in **RESEARCH**

The future of participatory design in **PRACTICE**

The future of participatory design in **EDUCATION**

**C. What is your most *positive* experience of participatory design processes in cities in relation to your preferred area?**

Please insert photos, sketches, or any personal items (e.g., diary entries) illustrating the experience and process you refer to

...

**D. What is your most *negative* experience with participatory design processes in cities in relation to your preferred area?**

...

Please insert photos, sketches, or any personal items (e.g., diary entries) illustrating the experience and process you refer to

## Thematic area: Practice

**A. What are your reflections on the definition of and approach to "people-centered cities"?**

...

**B. Based on your experience, what are the main challenges and dilemmas for participatory design and planning...**

...related to the methods?	...related to the process?	...related to the impact?
...	...	...

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Germany

Robert Bosch Stiftung

Innovation Design & Sustainable Cities

# EX: Future Workshop on ,people centred cities‘ organized for the Robert Bosch Foundation

A) Formulate the case

B) Imagine the future and backcast

## The Senate Department for Urban Development

Call for ideas // Target area: Practice

### Rationale

The Senate Department for Urban Development wants to establish an Institute for Public Participation.

### Aspects to be addressed

We are looking for innovative ideas responding to one or more of the following aspects:

- What would/should such an institute look like in terms of responsibilities, approach, and vision?
- What kind of support do practitioners need to be able to facilitate and conduct a meaningful public participation process?
- What innovative methods could help to overcome some common shortcomings (e.g. representation issues, skewed power relations, shared decision-making power, etc.) of participatory planning processes?

The Senate Department for Urban Development looks forward to receiving your brainstorming of ideas responding to some of the above stated (but not limited to) aspects on the post-its.



## Bring your idea(s) for the future of participatory design of people-centered cities to life!

Thematic area: Practice

Title: ...  
Give your prototype a name

What is your idea about?  
Tell us about the key features of your idea. Why is it necessary? What makes it innovative?

...

How does your idea look like?  
Please insert a photo/sketch etc. of your prototype below

...

## How can the ideal future of participatory design in the respective field be achieved?

### Step #1

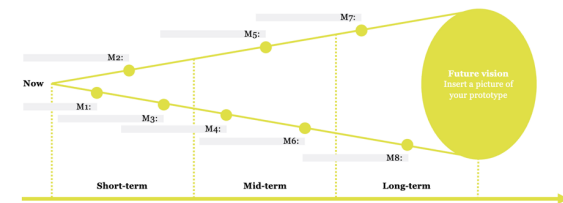
Identifying steps, problems, and solutions for reaching your ideal future

	Steps for reaching your ideal future	Potential conflicts and problems that may arise	Responses to overcome / address the problems
Strategic objective: Insert your idea for an ideal future	...	...	...
	...	...	...
	...	...	...
	...	...	...
	...	...	...
	...	...	...
	...	...	...
	...	...	...

## How can the ideal future of participatory design in the respective field be achieved?

### Step #2

Defining milestones (M) and timeline for reaching your ideal future



7\_ The next couple of days 😊



# Overview of the next days

Tuesday 28.02.23

**Training 1:** Context matters - Joint problem framing (objective 1)

**Training 2:** Words matters – building a common vocabulary

Wednesday 01.03.23

**Training 3:** Co-production of knowledge at different scales (objective 2 and 3)

Thank you for  
your attention!



# Training 1: joint problem framing

**Research question 1:** What is subsidized housing expected to do in each country / city? What does subsidized housing look like (in terms of tenure, location)? Who are the key providers? What are the roles of the private, public, and not-for-profit sectors? Where do the subsidies come from? What models have been implemented (e.g. public-private partnerships, community land trusts, etc.)? Which competences do local / regional Governments have in relation to SDG11?

**Research question 2:** What are the main differences and commonalities between social housing systems (rationales, funding, regulation)? How do differences in sources of funding and regulation shape levels of provision and protection of affordability over time? Which groups find it more difficult to access subsidized housing, and why?

**Research question 3:** What is the newest development in housing/ urban policies relevant to SDG 11.1 & 11.3? What sort of housing needs do individual cities face, and how do they expect to meet them?

