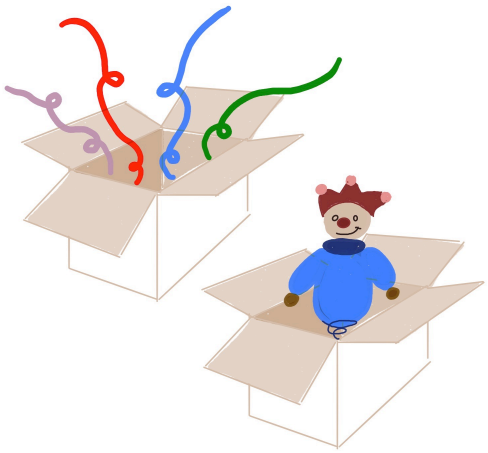
SHORT EXERCISES

Out-of-the-box-thinking



In a nutshell

Would you like to engage in out-of-the-box-thinking while you are prototyping actions and products for transformative change? This document provides several exercises that can be applied in multi-stakeholder sessions or settings, in which the generating of solutions to complex issues is at stake.

What for?

To create innovative ideas with a particular community

How long?

15-30 minutes per exercise, depending on the context in which they are applied

For whom?

Facilitators, policy makers, researchers, students, education professionals

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What will you gain from this?

The objective of this document is to enhance familiarity with out-of-the-box-thinking principles in a low-threshold manner. Actors of a transformative network can use these principles to generate innovative solutions for complex challenges.

OUT-OF-THE-BOX-THINKING

The realization of food system transformation can be approached as a highly complex challenge or problem that asks for well-designed and weighed solutions. Although these solutions may not always be as tangible as a fridge or scooter, principles of **designing** are applicable in transformation contexts, as well as in food system transformation or system transformation in Research and Innovation (R&I) to (further) realize food system transformation. In designing, out-of-the-box-thinking is often seen as a given principle. So when we refer to the term out-of-the-box-thinking in this document, we actually refer to design thinking, which is a core mentality in a design process.

A **design process** is roughly characterized by the following:

- A **multi-phase process**, in which involved actors move from a 'design problem' to a 'final solution' (or optimal solution regarding circumstances). The **problem** is often sub-divided in smaller problems to which sub-solutions can be created, which are thereafter combined into a coherent over-all **solution** (Roozenburg, 1995). See also Figure 1.
- An **analysis** phase, in which knowledge Is gathered to understand the 'design problem', a **synthesis** phase, in which rough ideas are generated to the (in so far) defined problem, and a **conceptualization** phase in which the ideas are put together into some sort of coherent final solution, after which implementation, evaluation and (in case needed) re-design can take place (ibid).
- Each phase is like a diamond, there are **diverging** and **converging steps**. In diverging, the focus lies on holism and quantity, while in converging the focus lies on quality by means of clustering, weighing, selecting and/or combining (Tassoul & Buijs, 2007).
- **Out-of-the-box-thinking is applied in both the diverging and converging steps of each design phase** (Von Oech, 1983).
- Some people feel more comfortable with diverging, whereas others feel more comfortable with converging. Very bluntly said, true 'divergers' can be recognized by their *'yes and'* enthusiasm, for example when hearing ideas of others, while true 'convergers' may be more inclined to say *'but how did you take care of X and Y?'* or *'so what's next?'* The latter like to take decisions, be pragmatic and move forward, the former like to explore alternatives, stand still in time (for a while), analyze what could be done, and think wildly (Cross, 2004; Dreyfus & Dreyfus, 2005). In a design process, you need both talents, so **teams with both divergers and convergers are ideal**.
- The process is non-linear and **iteration** is a matter of fact. Although one can speak of a design process or design model, the reality is more unruly. The 'designers' may be actively doing things in different design phases at the same time, jump back and forth and so on. Nevertheless, structuring a transformation process as a design process is useful to communicate about and reflect on what you are doing. Especially for novices, the structure is beneficial to get and keep grip on your actions (Cross, 2004).

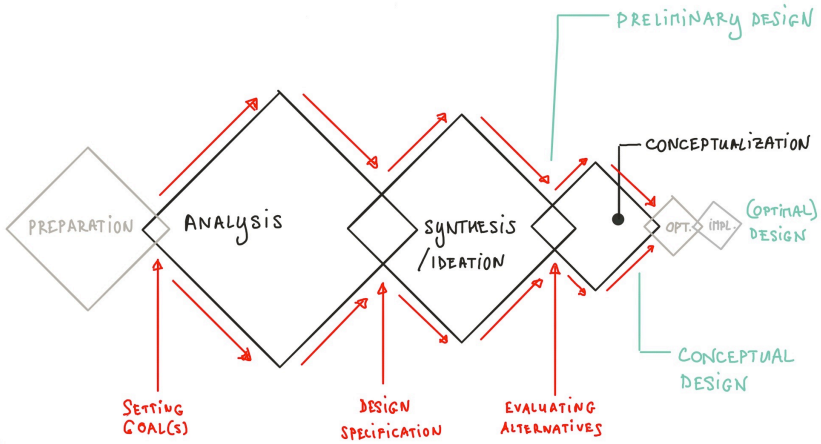

Figure 1: A multi-stage design process, with an analysis, synthesis and conceptualization phase at the core (adopted from Roozenburg & Eekels, 1995)

Then how does a design process link to system transformation? On the one hand, **the whole process of inciting system transformation**, including actor system analysis, mobilization, pathways co-creation and experimentation in practice, **can be seen as a design process**. For example, a commonly created vision of a future proof food system is in fact a desired end product or 'over-all solution' to current food system related challenges, while the roads towards such a vision imply various steps of diverging, in which a multitude of ideas is generated, and converging, in which the ideas are clustered, weighed, and/or combined to form (a) coherent (in-between) sub-solution(s).

On the other hand, **each separate step in a transformation process is a design process in itself** as well. For example, when multiple stakeholders come together to co-create (R&I) policy pathways that should contribute to food system transformation, the goal of the to-be-created policy is a solution or product, while thinking of many alternatives for components of and steps towards such a policy is similar to diverging, and the final policy mix is the end result of converging.

Now why is it so important to approach a system transformation process as a design process, and apply out-of-the-box-thinking in such a process? The reason lies in the fact that system transformation is a complex process, in which numerous stakeholders need to be involved and (inherently) thinking and working beyond traditional disciplines is required. And to realize that, all actors need to internalize a so-called transdisciplinary mindset (Madni, 2010), see Appendix 1. Looking at these characteristics, the link to design thinking is easily made, since problem reframing and thinking of analogies – just to mention some examples – are at the core of a design process (Simon, 1995). In other words, out-of-the-box-thinking strategies, rooted in design thinking, are a prerequisite when one aims to realize transformative change.

Furthermore, there are several common **pitfalls** in design teamwork (Cross & Cross, 1995). Teams can jump too quickly to a solution, forgetting to overview the full problem, or ignoring potentially more valuable alternatives. And teams can get stuck in (tunnelvisioned) problem analyses. To incite a transdisciplinary mindset and to overcome these pitfalls, the rest of this document describes how to effectively realize out-of-the-box thinking in transformation context.

Thematic area

Transformation skills building

Target audience

Facilitators, policy makers, researchers, students, education professionals

Age of participants

Age 12 and onwards

Number of participants

4 participants or more (unlimited), preferably guided by a facilitator

Prior knowledge required for participation

Primary knowledge (present among participants and facilitators) is useful on the topic at stake in which the out-of-the-box-thinking is to be stimulated, for example (food) (R&I) policy making, or educational module design.

GETTING PREPARED

Setting the scene

When preparing for a setting in which out-of-the-box-thinking is to be incited, it is wise to set certain Golden Rules for a safe space in which creativity can emerge. Examples-rules are:

- One conversation at a time, focus on one topic
- Try to avoid interrupting one another
- Ideas are from everybody (co-creation), so once you have put an idea in the group, it has no 'owner' anymore
- This session is not about who you are, but about what you think
- Everything is ok and allowed, wild ideas are encouraged
- Post-pone judgments (in the moment now until we ask for weighing and judging)
- Try to associate further upon one another ideas (do a brief practice round for this > apple, pear, banana, fruit, food, waste, etc.)
- Quantity is more important now than quality (until we ask for weighing and judging)
- You don't have to be or feel like a super-creative-person to be creative today, we help you to incite your inner creative, which we all have by nature since we were born (but forgot to use afterwards once teachers started to give us grades and caregivers set the standard for what we should think)
- Out-of-the-box-thinking may not be the fastest way to get to a solution, though it is a way to ensure that you get further.

It is wise to communicate such Golden Rules to participants of any session in which out-of-the-box-thinking is facilitated and desired.

An often overlooked aspect in multi-stakeholder event design, is to explicitly built-in physical and format elements that create a safe and trustworthy environment' in which conversations easily 'float around'. We recommend to safeguarded this by:

- Setting:
    - A background noise-free environment (absorbing materials on walls and ceilings; use 'mute by default' in online meetings!)
    - A room with windows and enough space to talk and walk
    - (Sub-)Group sizes of 5-8 maximum
    - No hierarchy (round set-up, no table heads, no podium; maybe also avoid large hierarchical differences between participants in terms of job function)
    - Maximum event duration (2-3h).
- Atmosphere:
    - Comfortable furniture
    - Uplifting music upon arrival
    - Inspiration materials, such as funny artsy objects, clay, stress balls, apples and mandarins (or any healthy 'creativity candy').
- Activities:
    - Warming up and get-to-know-each-other exercises
    - Positive, energetic tone
    - Alternate between individual, small group and plenary exchanges.

EXERCISES

DURATION (EACH): 15-30 minutes

Most exercises below are 'borrowed' from Roger Von Oech. He is a creativity guru who developed the 'Creative Whack-Pack', a toolkit with cards that trigger creative thinking (1992). It is available as a physical toolkit as well as an App. In his Whack-Pack, Von Oech distinguishes strategies for several types of design issues, which we can compare to a generic design process (Roozenburg & Eekels, 1995; described here above), as follows:

1. Searching for new resources to create ideas > strategies for the design analysis phase,
2. Creating innovative ideas > strategies for diverging in a synthesis or conceptualization phase,
3. Weighing and evaluating ideas > strategies useful for converging in these phases,
4. Struggling with implementation > strategies for the phases after conceptualization,
5. Getting stuck in our own thinking patterns and thoughts > strategies for all design phases.

A full pack of creative solutions strategies for each kind of issue can be found in the Whack-pack (1992). In the following exercises we provide one out-of-the-box-thinking strategy for each kind of issue. And an example of how two of them were applied in FIT4FOOD2030.

1. Searching for new sources to create ideas

Look to nature

Sometimes it can be useful to look at nature. Ask yourself the following questions and try to answer them (Von Oech, 1992):

- What patterns and cycles in nature can you use to develop your idea? Think e.g. about rivers, cloud forming, mating rituals, structures of leaves, etc.
- Randomly pick a letter of the alphabet. Now think of an animal (mammal, fish, bird or insect) that begins with this letter. What two specific tactics would that animal try in dealing with your problem?

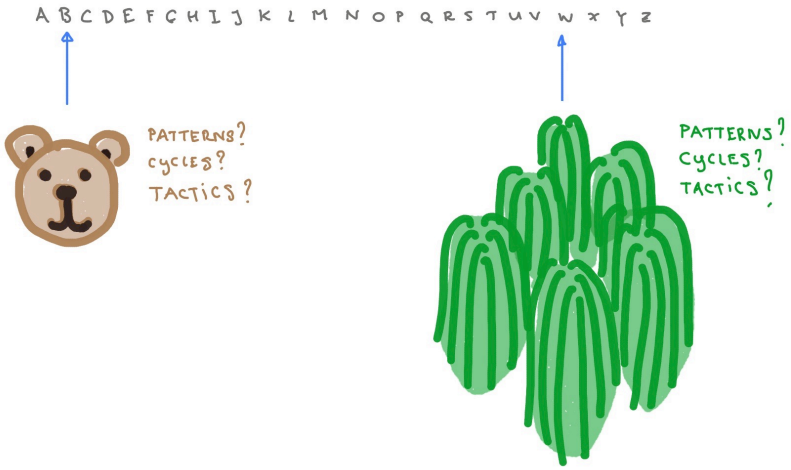

*Figure 2: An alphabet and two optional features of nature one could choose when randomly picking a letter from the alphabet, a **B**ear and a **W**illow, to set as a starting point for brainstorming about or elaborating further on ideas.*

2. Creating innovative ideas

Imagine how others would do it

Lara Croft, Serena Williams, Obama, Superman, Wonder woman, or Spider man; many fictive characters and real people exist that use inventive or daring strategies to shape solutions to issues. Use them as your inspiration source by answering the following questions (Von Oech, 1992):

- What three people do you respect for their creative achievement?
- How would each of them (further) develop (a solution to) your concept?
- If you cannot think of someone, maybe a good strategy can be to choose a person that was in the news recently, a character from your latest book/film, or a person who recently died.

Figure 3: Taking superman as a perspective to solve a problem' what would he do?'

3. Weighing and evaluating ideas

Focus on the real truth

It is logical that in everything we do we lead ourselves by our own fears and ambitions. However sometimes this makes our choices superficial or biased. To overcome this, the following questions can be useful to answer (Von Oech, 1992):

- Where should your focus be?
- What's the real reason why you're interested in your issue or idea?
- What different truths do you discover when you change your viewpoint?
- What truth would you see if you completely abandon your own self-interest?

4. Struggling with implementation

Get rid of excuses

Implementing something new and complex requires perseverance. This is not an easy task, especially when multiple actors are involved. Answering the following questions can be useful to tackle implementation set-backs or procrastination (Von Oech, 1992):

- What three factors will make it difficult to reach your objective?
- How can you get rid of these excuses?
- On what current issue are you using the excuse "I don't have time". How can you make time?

5. Getting stuck in our own thinking patterns and thoughts

Frame-shift: Be the project

Imagine that you are the project/product/initiative or activity itself.

- Who are your friends?
- Who are you enemies?
- What are your 'guilty pleasures'?
- What would you need from yourself to be realized?
- What would you need from others?
- Whom are these 'others'?
- What would you need right now and what can wait?

An example of applying the out-of-the-box-thinking strategies in food system transformation practice

Textbox 1 describes how policy labs in FIT4FOOD2030 applied the out-of-the-box-thinking strategies 'look to nature' and 'imagine how others would do it' in co-designing R&I policy pathways.

Policy Labs in FIT4FOOD2030 had a task to design R&I policy pathway in co-creation with their stakeholders. One of the project partners (AIT) had created a tool for such pathway co-creation (Wagner, 2020; and see Figure 4). We practiced with the tool during the training sessions with the lab coordinators.

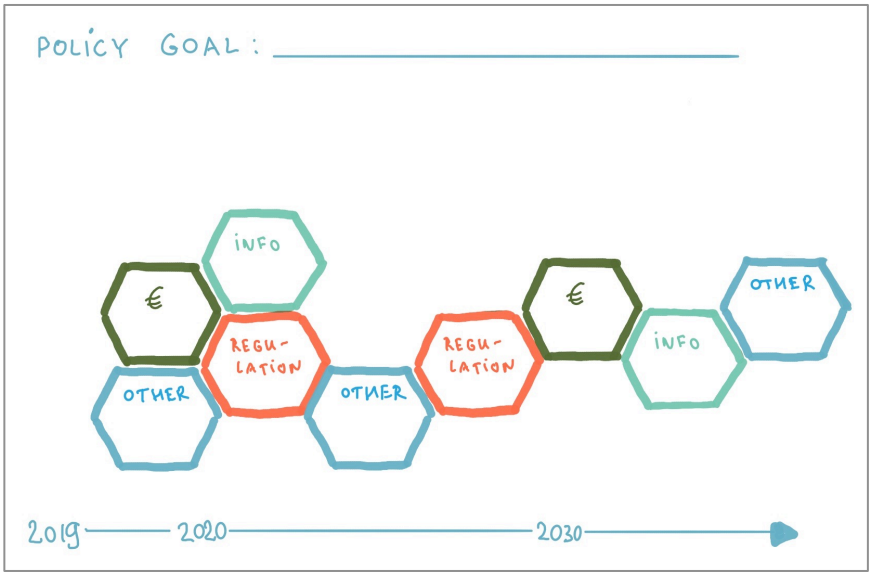

Figure 4: The R&I policy pathway co-creation canvas. A policy goal on top, a timeline on the bottom, a pathway (honeycombs) with policy instruments to realize the goal.

With this tool, pathway co-creation participants first need to set a commonly agreed upon 'policy goal', for example shift in protein consumption from 40% to 60% plant-based, or 'not more plastic waste in the food system'. To realize such a goal, participants can choose 'policy instruments' to realize the goal, from economic means, to regulation, communication or 'other'. These instruments are then placed on honeycomb-shaped cards, and these cards are put on a canvas to form a visual pathway towards the goal, after which participants could start elaborating further on each policy instrument, or co-create more, alternative pathways that could realize this goal.

To trigger out-of-the-box-thinking, we asked lab coordinators to first, semi-randomly, pick one R&I policy action from the European Commission Directorate-General for Research and Innovation (2020):

- Governance and systems change;
- Urban food systems transformation;
- Food from the oceans and fresh water resources;
- Alternative proteins and dietary shift;
- Halving food waste;
- The Microbiome World;
- Healthy, sustainable and personalised and nutrition;
- Food safety systems of the future;
- Food systems Africa;
- Food systems and Data.

Based on that, they had to formulate a more precise policy goal; in line with this action, but more specific for their own local context.

Then we gave a matrix with various possible policy instruments that one can think of, in terms of economic means, regulations, and communication or information (Wagner, 2020; see Figure 5). We asked lab coordinators to semi-randomly pick a combination of instruments and see what kind of pathway that would deliver. And again, and again. With that framework, various alternative pathways could be created.

PRIMARY TYPE	PRIMARY PURPOSE: Supply	Demand	Systemic
Economic Means („carrots")	R&D grants and loans, tax incentives, state equity assistance	Subsidies, tariffs, trading systems, taxes, public procurement, export credit guarantees	Tax and subsidy reforms, infrastructure provision, cooperative R&D grants, PPP
Regulation („sticks")	Patent law, intellectual property rights	Technology/performance standards, prohibition of products/practices, application constraints	Market design, access guarantee, liability law
Information („sermons")	Professional training and qualification, entrepreneurship training, scientific workshops	Training on new technologies, rating and labelling programs, public information campaigns	Education, public debates, cooperative R&D programs, clusters, foresight, technology assessment, open innovation platforms, science shops

Figure 5: Policy instruments (from more traditional instruments in the 'supply column' to more contemporary instruments in the 'systemic column') from which policy pathway co-creators can choose to mix and match a pathway towards a particular policy goal.

To enrich the pathway design, we asked lab coordinators to take the perspective and life of a bear as an analogy. If you were a bear, what would you change or adapt to these policy instruments? Or what would it mean to the sequence in which you put the instruments? Lab coordinators were also free to choose another animal or metaphor.

Then, to think about how to further design each instrument in the pathway, we asked lab coordinators to think from the perspective of their superhero, who would have unlimited means and energy to do things. How would this superhero design and apply each instrument?

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FIT4FOOD2030 Policy lab coordinators had applied these strategies in their own labs with multiple stakeholders to co-create policy pathways. Although they were a bit uncomfortable to apply the strategies, especially when people in high functions would join their sessions, the responses of their workshop participants to the strategies were very enthusiastic. They were happy to (finally) do something different from all their other activities. The output of the workshops had also happily surprised the lab coordinators.

Textbox 1: An example of out-of-the-box-thinking strategies applied in FIT4FOOD2030

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APPENDIX

Characteristics of transdisciplinary mindset needed in system science (adopted from Madni, 2010)

- ***Actively look for and exploit synergies*** among disciplines
  - e.g., decision theory and artificial intelligence
- ***Seek out appropriate analogies*** that help with problem understanding and problem solving
  - e.g., biological analogy exploitation – human immune system as a model for cybersecurity
- ***Frame the problem in a larger context*** to open up collaboration scope
  - e.g., BMW's boxfish-like concept car was a result of collaboration between engineers and marine biologists
- ***Examine the problem as an outsider*** to develop new perspectives
  - looking beyond entrenched thinking can open up the option space (i.e., possibilities)
- ***Formulate the problem from different perspectives*** to gain novel insights
  - perspectives could include technical, organizational, social, cultural, and environmental
- ***Envision outcomes*** to determine what incentives to apply and what constraints to relax
  - a "reality check" can cause the relaxation of constraints imposed by an entrenched mindset
- ***Strive for semantic interoperability*** among disciplines
  - develop multi-domain ontologies to "smooth out" seams among disciplines
  - reconcile assumptions and theories across disciplines (to the degree possible)
  - create a shared vocabulary to address complex problems
  - relax disciplinary boundaries to accommodate new concepts
- ***Explicitly formulate transdisciplinary tradeoffs*** by reaching beyond disciplinary boundaries
  - encourage team to view problems in a new light ("open mental locks")
- ***Employ model-based approaches*** to generate transdisciplinary hypotheses and interventions
  - develop complex systems models using, for example, system dynamics modeling
  - exercise these models to generate hypotheses and interventions and define metrics

Coordinated by:

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JPI a healthy diet for a healthy life

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MILAN URBAN FOOD POLICY PACT

FACCEJPI Agriculture, Food Security and Climate Change

Living Lab for Health IrsiCaixa Institut de Recerca de la Sida

ESSRG Environmental Social Science Research Group