Climate-KIC

Visual toolbox for system innovation

A resource book for practitioners to map, analyse and facilitate sustainability transitions.

Climate-KIC is supported by the EIT, a body of the European Union

Content

Tool 9
Flourishing multi-level

Multilevel perspective

An organic metaphor. Imagine the MLP as a daisy competing with other seeds to flourish and simultaneously coping with the pressure of the climate and weather. Flourishing multi- level gives a visual metaphor of the complex interplay of relations between the components in the three levels that make up a socio-technical system.

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Flourishing **multi-level**

What it is

Flourishing multi-level is a descriptive and analytical tool that provides you with a visual metaphor featuring a combination of a static picture of the current components and a description of the dynamics in the system that your challenge is embedded in.

When to use

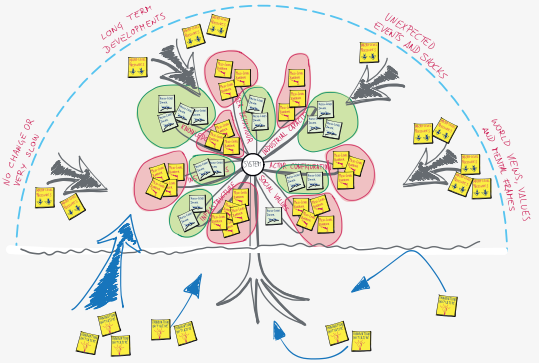
When you need a thorough insight of the system which you aspire to break into. This is a simple tool you should use for a deep understanding of current components of the system, how they are interwoven and how they impact your project plan. It should always be used before making decisions for the future of the project.

Why it is useful

First of all, it gives you a simple depiction of the highly complex and somehow counterintuitive socio-technical system made up of the micro, meso and macro-level.

Moreover, it helps and guides you in the process of identifying multi-level components, the interplay among them and the way they might affect your challenge. On the other hand, it gives you an overall picture of the system making further analysis easier.

This tool will help you to position your innovation projects in the broader context of different societal 'layers' that are important for your innovation, as well as understanding what the different layers could mean for your case.



HOW MANY	From 1 person to groups of 10 people.
HOW LONG	90-120 min.
DIFFICULTY	Medium-High.
WHAT YOU GET	An all-embracing and visual identification of the elements that make up the complex system of three levels in which your project is embedded, as well as the interplay amongst them.
WHAT YOU NEED	An in-depth understanding of the complex system around your project, comprising the dominant market or system, the collection of innovation initiatives bubbling up in parallel to that system, and the main trends and pressures from the overarching level.
WHAT IS NEXT	With this comprehensive picture you can work on planning the future for your innovation. If so, you can start with the visioning and backcasting tools, before making a plan. Alternatively, you may want to go deeper in your understanding of the barriers and opportunities for your innovation. Then you can go for the Fishing for barriers tool.

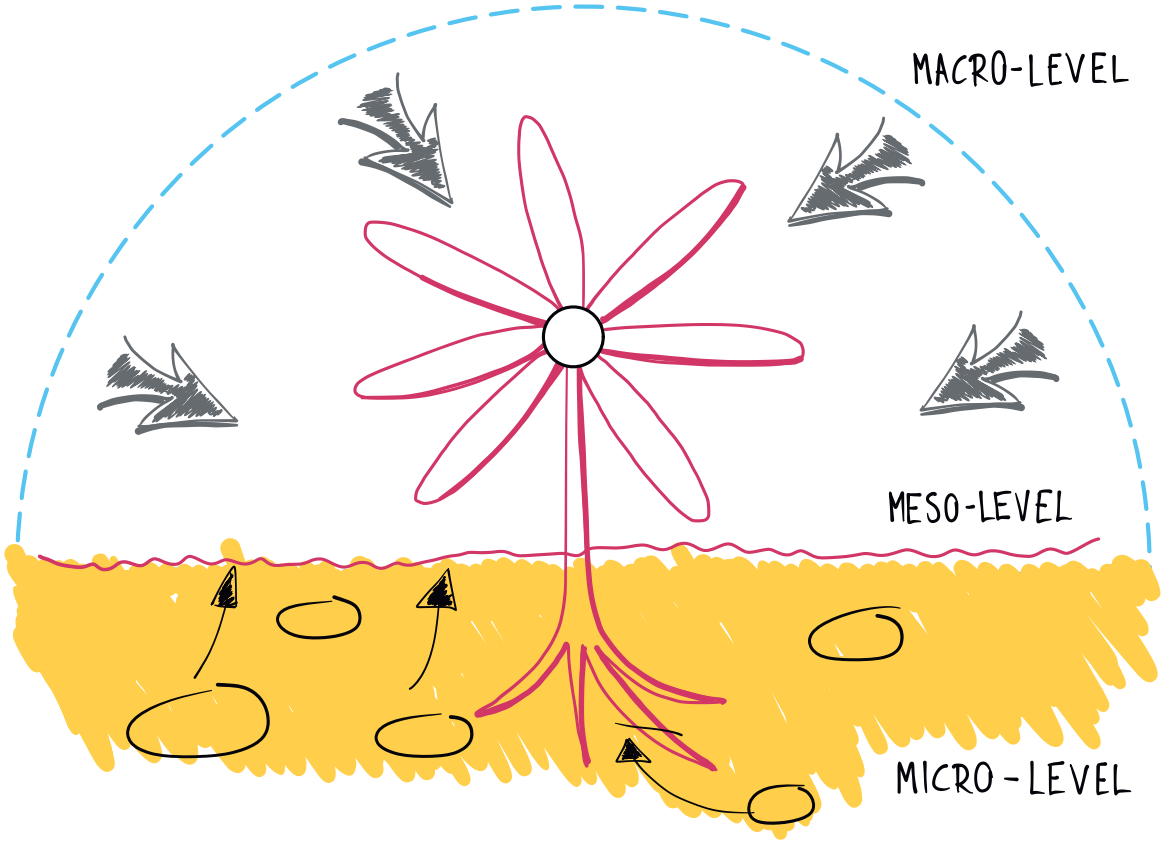
Steps

STEP 1. Define your system and yourself

Sketch out a large version of the canvas on a piece of paper. The daisy accounts for the meso-level with its petals (meso-level dimensions) exposed to the sky (macro-level) and the roots in the soil, which accounts for the micro-level. You can draw six or seven petals, depending on the number of relevant dimensions you have previously identified for your system. In any event, leave enough space to include any other dimension you can identify throughout the exercise.

Once you have the canvas, the first step is to identify the system your project is in. It is essential to be as specific as possible. If your project is about biomass energy, your system might be the green energy in cities. Of course your project may touch more than one system (forestry, land management, city energy...). If that is the case you can include them all, but bear in mind that the more systems you include the more complex the outcome. In any event you can always settle on including only one system, but factor in elements coming from the others.

Before starting with the canvas, another definition is needed: yourself. Depending on your role and/or your challenge, your starting point might be the micro-level (niche) or the meso-level (regime). It will be relevant to put your focus especially on that level and how it relates to the others. Nevertheless, whatever your level is, it will be essential to know all the levels and the feedback loops between them.



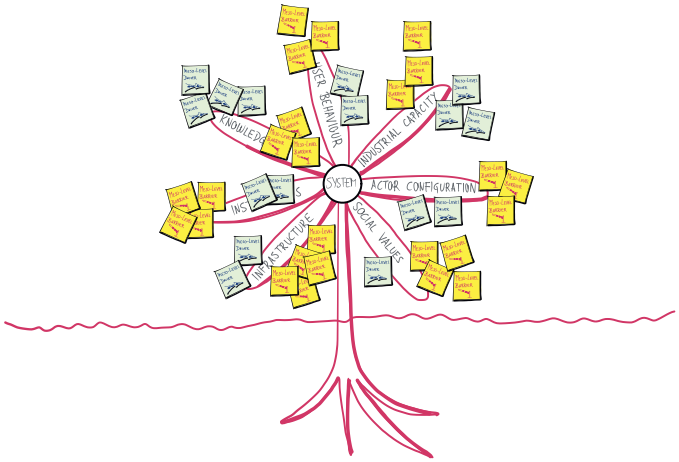
STEP 2.
The Meso-Level

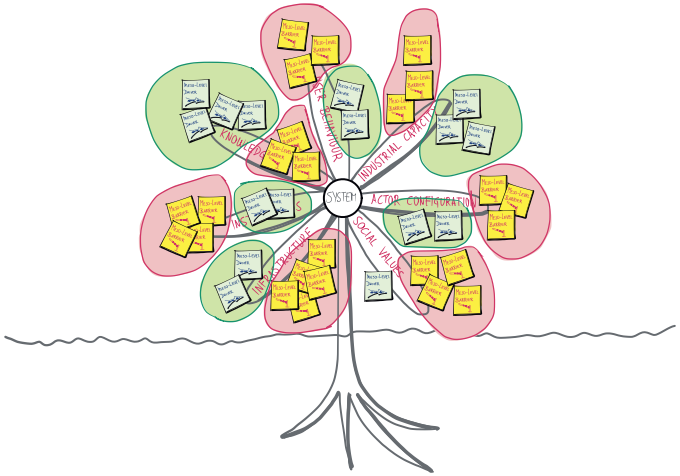
Fill out the canvas: Let's start at the meso-level, more specifically, by identifying the relevant dimensions that characterise your dominant system or meso-level. You can use the list in the example to get some guidance to identify those dimensions or domains, but bear in mind that such dimensions can and will vary in your particular case.

Then, for each dimension write down the elements that are relevant for your challenge. This is not a hypothetical exercise but rather a description of your system. Try thinking of those elements in different dimensions that can be acting as BARRIERS for radical change (e.g.: your innovation) , causing lock-ins. For instance: an existing regulation, a dominant technology, a big and well established competitor, etc. Besides that, other constituents may act as opportunities and drivers for change. Think of potential partners, allied players, business angels, etc. Eventually, you may identify other elements characterising the meso-level, yet you don't have a clear idea about their influence on your project.

To take this step, spend 5 or 10 minutes working individually and writing down one element per post-it. Try to be as concrete as possible, mentioning specific institutions, regulations, describing behaviours, etc. Examples: fossil fuel infrastructure, technologies, actors, powerful energy companies, EU-energy policy, low level of awareness, etc. Then, as a group, discuss the elements and put as many ideas as possible on the canvas. Don't reject any idea at this stage of the dynamics. As you put the elements on their respective petals (dimensions) try to form clusters of barriers and clusters of drivers. It will help you in the forthcoming analysis.

> Flourishing Multi-Level gives you a simple depiction of the highly complex and somehow counterintuitive socio-technical system made up of the micro, meso and macro-level.

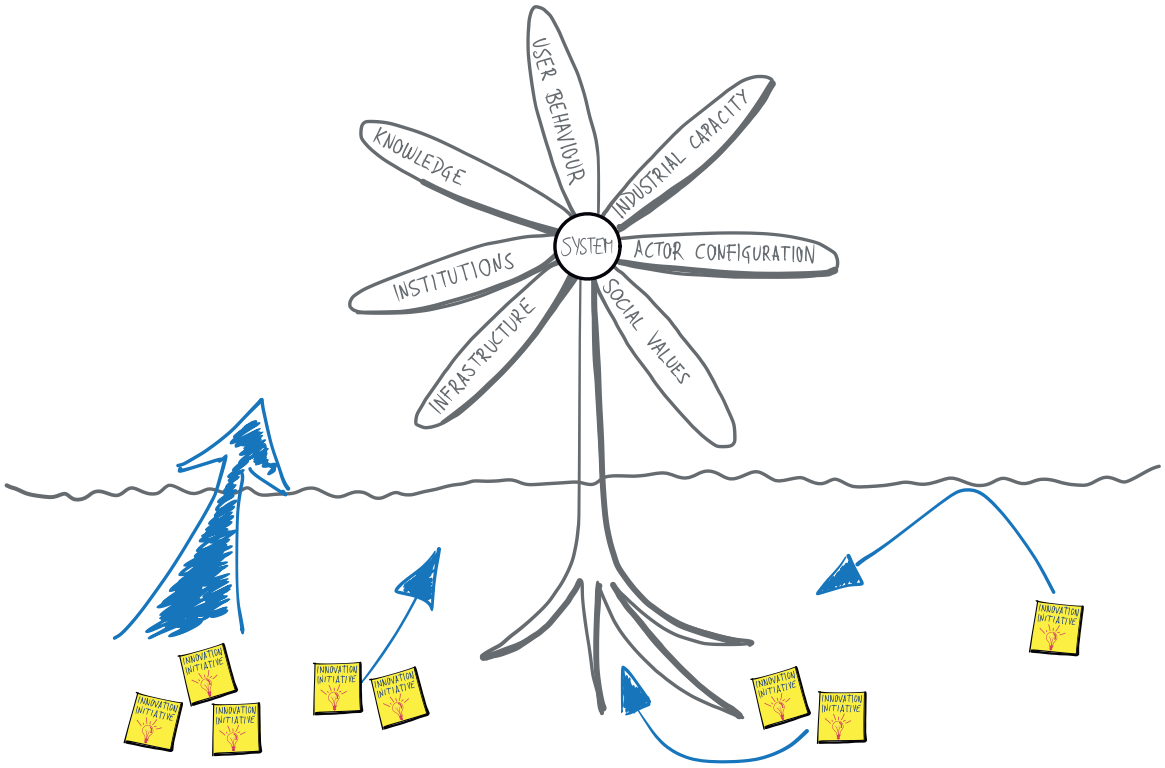




STEP 3.
The Micro-Level

In the soil under the daisy there are plenty of seeds ready to scale up and tap into the mainstream meso-level. Identify and write down experiments or other innovation projects that could be important for your challenge. They represent the OPPORTUNITIES for CHANGE.

Depict potential allied actors or initiatives; use arrows to depict the impact these experimentsare causing on the meso-level, according to their maturity and momentum.



Look for experiments related to yours and which synergies might arise from them.

Depict potential allied actors or initiatives, whether they are in your same field or in another, but related one. Use arrows to depict the impact these experiments are causing on the meso-level, according to their maturity and momentum.

Similarly to the meso-level, there may be potential barriers or hurdles for your innovation in the niches for innovation or micro-level. Pay attention to those experiments and initiatives that might compete with yours, or even block the development of your project.

As in the step 1, spend 5 to 10 minutes working individually and then go for a plenary or group round.

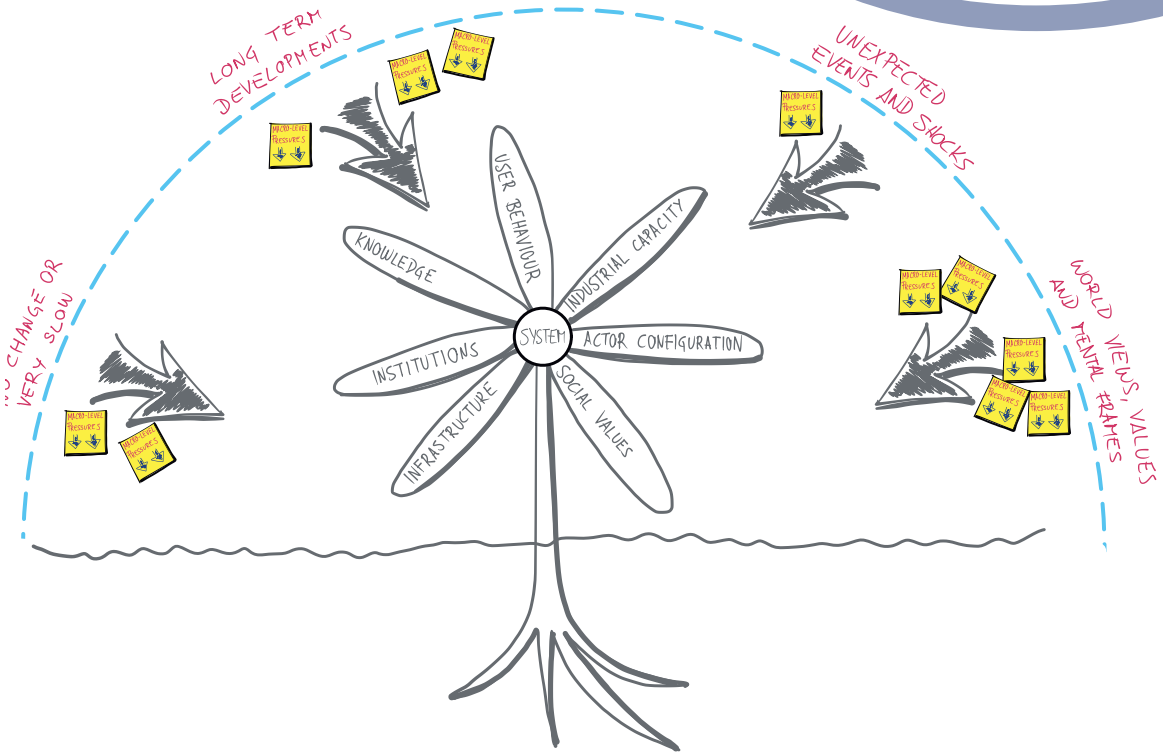
Introduction to transition management. Short course. The Climate-KIC. Zurich, 2015. (Switzerland). http://goo.gl/DtLLRn

Boosting sustainable economy in rural areas. Innovator Catalyst series. The Climate-KIC. Budapest, 2015 (Hungary). http://goo.gl/iufdY4

STEP 4.
The Macro-level

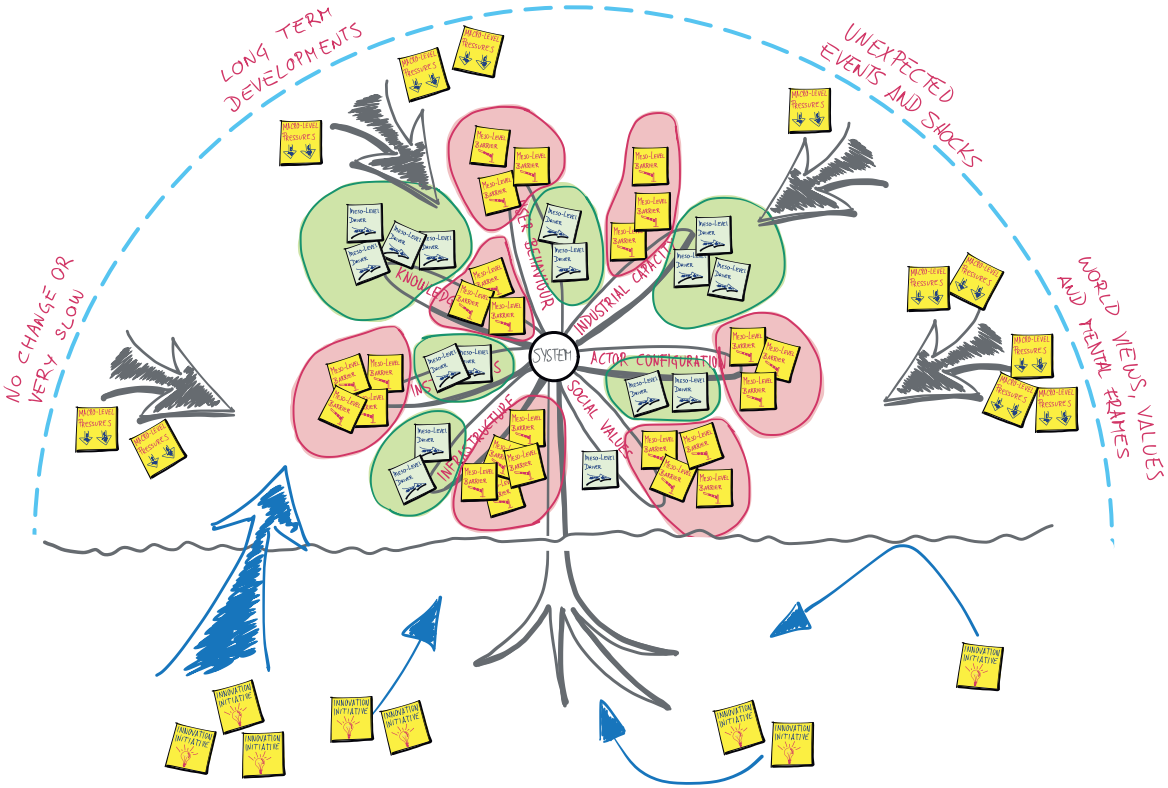
The last part of the canvas is the sky, accounting for the macro-level. Think about the main developments, trends and crises that characterise the macro-level at this moment. These factors mainly work as DRIVERS for change and innovation; putting pressure on the meso-level: Climate change, economic growth, increasing/decreasing prices, financial crisis, etc. In any case, bear in mind that these factors might also act as a barrier or a hurdle for your specific innovation.

With the same dynamics as in the earlier steps, spend 5 to 10 minutes writing down as many factors as you can think of and then work in a group putting your ideas on the canvas and discussing them.



STEP 5.
Completing the canvas

Once the elements for your Multi-Level have been decided, try to identify and sketch the interplay between, and within levels. Draw arrows from one level to another when a direct effect can be described. Do the same for those relations within the same level: you can identify clusters of interest, initiatives that are somehow related, etc. Remember that the system is not a collection of elements but rather a dynamic set of elements, and the interplay between them.



STEP 6.
Debrief

Equipped with the new picture, reflect on the general system in which you are embedded and how its components and dynamics can affect your innovation, its maturity and scaling-up process. Try to set out a pathway of relations for your innovation to flourish under these conditions. You may want to use the following questions to spark for your discussion

Do you think the system is ready for change and innovation? Have you been able to identify some lock-ins that keep the system trapped in the dominant solution or paradigm? Have you identified specific barriers for your innovation in the meso-level? If you needed to design a strategy for scaling-up your innovation would you say you can draw on potential allied stakeholders in the meso-level? How could you overcome the identified barriers for your innovation? Do you think the system would vary significantly if you shifted the geographical location or boundaries? What are the pressures from the macro-level like? Are they causing a real impact on the meso-level? What impacts? Can you see a window of opportunity for your innovation? If so, what causes are underlying such an opportunity window?

> Do you think the system is ready for change and innovation? Have you been able to identify some lock-ins that keep the system trapped in the dominant solution/ paradigm?

Tips

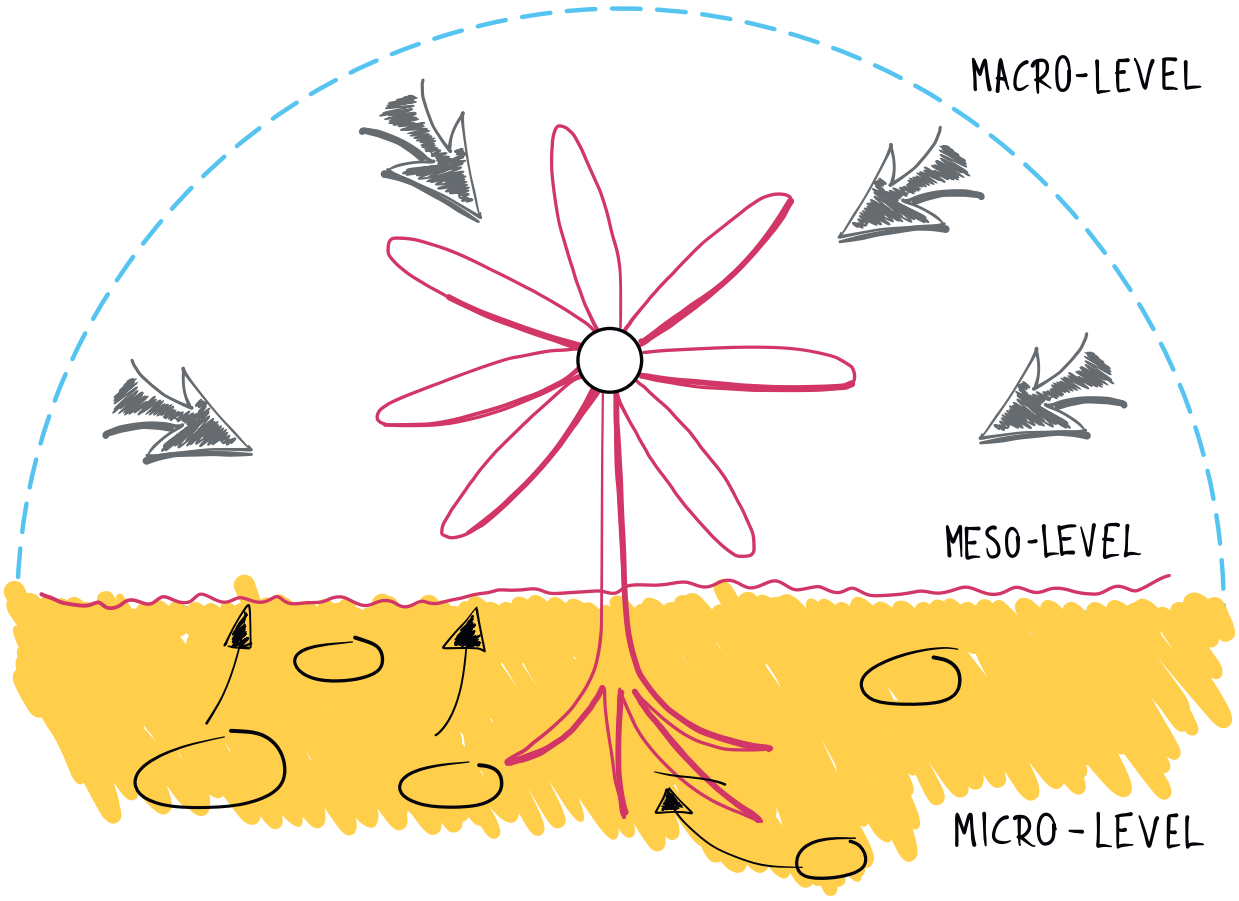
- When identifying constituents from the meso-level, bear in mind the geographical boundaries you have for your project and think of barriers and drivers for your innovation.
- While working on the micro-level, look around your project sector and look for those initiatives that might feed yours in some aspects you didn't consider before. For instance, a new collaborative consumption initiative, a micro-funding project, etc.
- Likewise think about other projects you can learn from.

Find out more

http://www.climate-kic.org/transitions-hub

Flourishing multi-level

The Canvas



De Vicente López, Javier and Matti, Cristian (2016) . Visual toolbox for system innovation. A resource book for practitioners to map, analyse and facilitate sustainability transitions. Transitions Hub series. Climate-KIC, Brussels 2016.

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Tool 10
Fishing for barriers

Finding out the way

Finding out the way to complete your project calls for you to identify the big barriers that the project is facing and chunk them down into more concrete causes and manageable problems.

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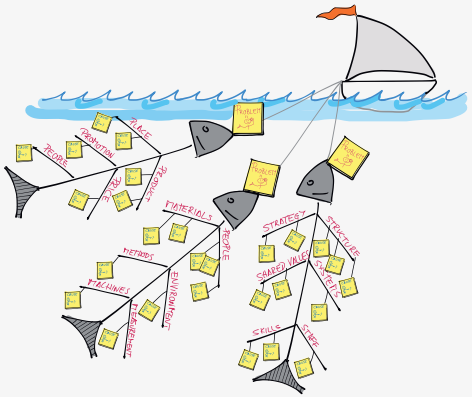
Fishing for **barriers**



HOW MANY	From 1 person to groups of 8 people.
HOW LONG	40-60 min.
DIFFICULTY	Medium-High.
WHAT YOU GET	A thorough graph with a categorized list of barriers (problems and their causes) for your innovation (project, challenge...) as well as the relations between them.
WHAT YOU NEED	You need a description of your big problems coupled with a fuzzy idea of the solution you set out and the system in which you are embedded (stakeholders, technologies, regulations...)
WHAT IS NEXT	After getting a breakdown of the problems as well as of their causes, you are ready to move forward and start exploring the pathway for the future. You may want to go for visioning and backcasting tools, or you could opt for drawing up an action plan for solutions stemming from the list of problems.

What it is

Fishing for barriers is a visual tool that helps you to identify the main bottlenecks blocking the success of your project, as well as their roots, by breaking them down into smaller pieces and problems. The tool grew out of mixing the the Shikawa diagrams (Kaoru Ishikawa, 1968) and the speed boat (Luke Hohmann, 2006).

When to use

When you are analysing the system around your project.

Why it is useful

Despite its simplicity, the tool helps you to systematically identify the main barriers for your project, in a way that can lead you to find out hidden and unknown problems. With these new insights you will be better equipped to steer the project towards success.

The tool also helps you to prioritize those problems that are urgent and therefore provides you with a short-term strategy that might prevent your project from derailing.

Finally, the tool fosters the stakeholder integration, integrating different perspectives and expectations under the same structure, which will give you a richer vision of the range of problems affecting your project.

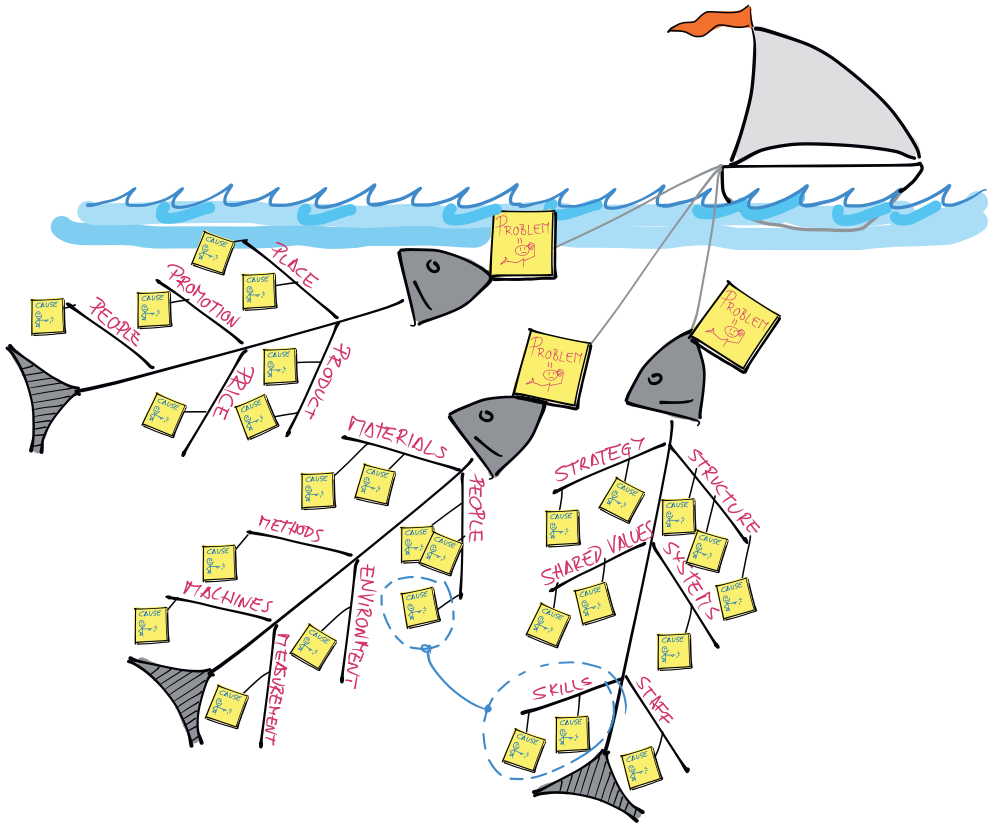
Steps

STEP 1.
Define yourself

Take a large piece of paper and sketch out the fishing canvas. The boat represents your project trying to move forward. In this case, it is trying to scale up and break into the dominant system to elicit a transformative change. The fish account for types of barriers hindering the performance of the project. Moreover, the heads of the fish account for one big problem you are facing. For instance, a weak network with other potential partners, high competition from the dominant system, lack of fitting with the current market, etc. Then it comes to the fishbone. The fishbone accounts for those problems and causes making up the main barrier. For instance there might be infrastructure causes underlying the lack of market fit, but also user habits, different regulations, etc. Each of these categories would account for one of the branches of the fishbone.

STEP 2.
Brainstorm problems

The first step is to run a traditional brainstorming session to come up with as many problems as possible. First, spend some minutes to individually think of the problems you think you are facing. Then write them down on post-its (one problem each) and start a round of explanations in which everybody introduces and explains their ideas, putting them on a wall. After introducing all the problems, start a discussion making clusters, and three or four problems as the most important for the project. In the process you may want to rephrase some problems to better explain a specific category or cluster.



Green skills for boosting transition in water management Innovator Catalyst series. The Climate-KIC. Valencia, 2014 (Spain). https://goo.gl/llq0oS

Green skills for boosting transition in water management Innovator Catalyst series. The Climate KIC. Valencia, 2014 (Spain). https://goo.gl/llq0oS

STEP 3.
Fishing

Draw a fish for each problem you have decided to work on (remember to limit this number to three or four problems only), put the post-it with the problem on the head of the fish and start chunking down the problem. You can do that by asking yourselves the question WHY is something happening? Write down the answer and stick it on one of the fishbone branches. To carry out this process you count on two alternatives:

First alternative

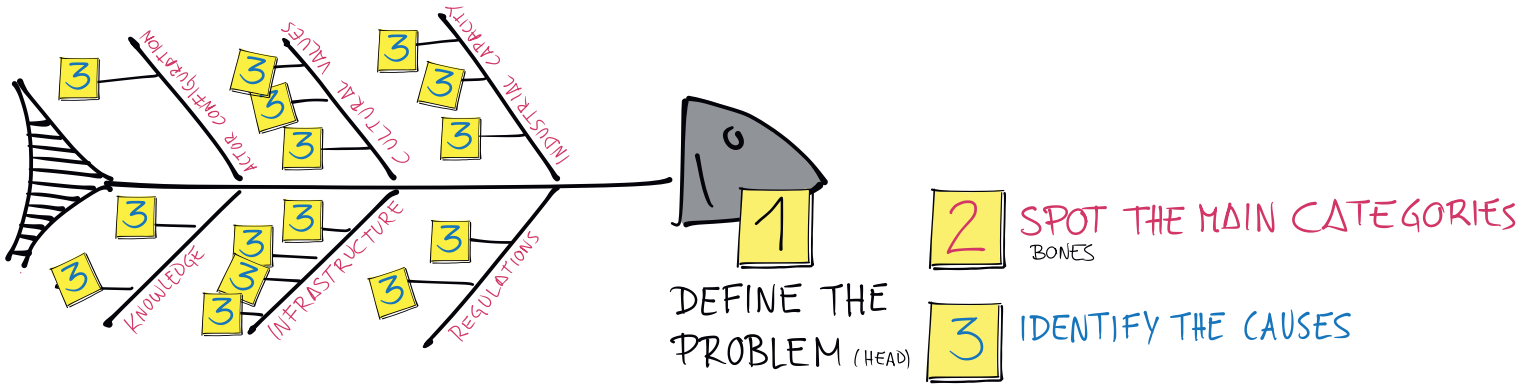
To consider the big barrier, decide those categories of causes you think are underlying the barrier and that you want to dive into. For instance, if your barrier has to do with the dominant system and the difficulties to break into it, you could use the meso-level domains (see the Flourishing multi-level tool) as categories: infrastructure, institutions, knowledge, user behaviours, cultural values, industrial capacity and actor configuration. Alternatively, you could go for something less systemic and include categories such as the place, the price, the type of product, communication issues etc. If this is the case (that your barrier is more specific and limited), then you might use a project oriented categorisation: material, people, methods, machines, measurements, etc.

After deciding the categories, draw a branch accounting for each category and then start identifying causes under each fishbone branch. Write one cause on one post-it and place them on the fishbone.

Second alternative

The second alternative starts the other way around. That is, you first brainstorm the causes beneath the barrier. You need to write down one idea per post-it and then make clusters of ideas along the fishbone. Each cluster will account for one branch in the fishbone. The second part in this alternative is to label each category or branch, according to the ideas within the cluster.

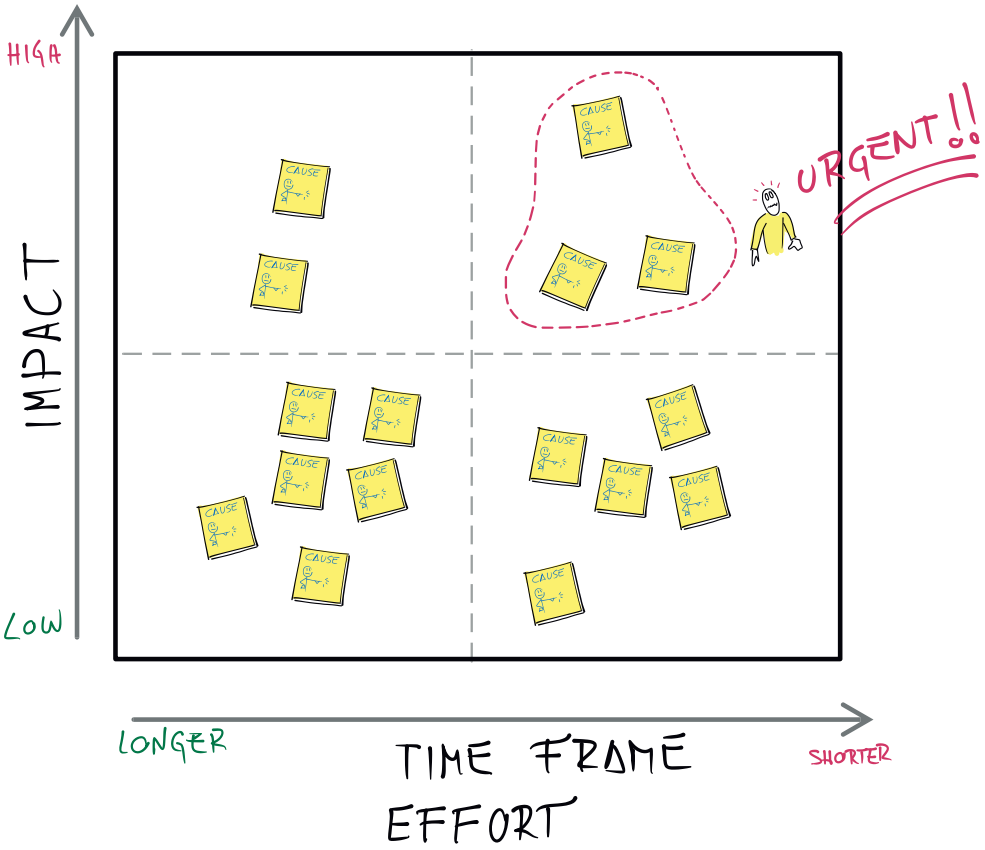
Either alternative is perfectly good and it will depend on your starting point to pick out one or the other. If you don't have an in-depth knowledge of the system, the first alternative can guide you in the process of systematically scanning the possible causes behind the barrier. Conversely, if you have in-depth knowledge of the system and the project, then you could feel the first alternative is limiting you. Then go for the second alternative.



Pioneers into Practice Programme. The Climate-KIC. Valencia, 2014 (Spain).

STEP 4.
Prioritizing

The last step of the tool is to prioritise the problems you need to sort out in the short term. To do that you can use any method you know, ranging from a simple dot voting to a multi-criteria process. One alternative at the half way point between the mentioned options is to assess each cause according to its impact on the project and the time frame for those impacts (see the figure). Then, those causes/problems falling on the short term and high impact quadrant will be the most urgent for you to start taking action against.



To prioritise, you can use any method you know, ranging from a simple dot voting to a multi-criteria process.

STEP 5.
Debrief

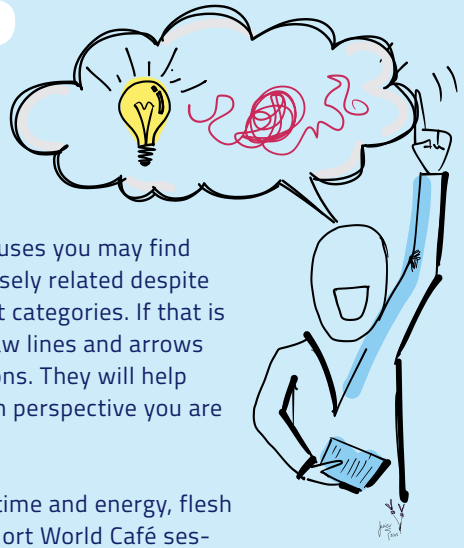
You gathered a comprehensive list of problems holding back your project progression; now spend some time reflecting on the outcomes you obtained and the process used to get them.

Do you think you have a clearer idea about the barriers you are about to face? Did you find something new or unexpected about your project and the system? Is there any domain or category the importance of which outweighs the others? Did you use the same categories for all the barriers? Why? Do you think the main barriers are related to your own performance as a project team or come from outside, from the dominant system? Do you think other projects around yours are facing the same type of barriers? Do you feel you can solve these problems alone or with a lineal approach? Or do you think you will need a kind of system perspective?

Did you find the process of filling up the canvas difficult? If so, which part? Did you find anything missing? What? Was the prioritisation step easy to take or was there a lot of discussion before decisions were made? What would you make different in this tool?

Do you think other projects around yours are facing the same type of barriers?
Do you feel you can solve these problems alone or with a lineal approach?

Tips



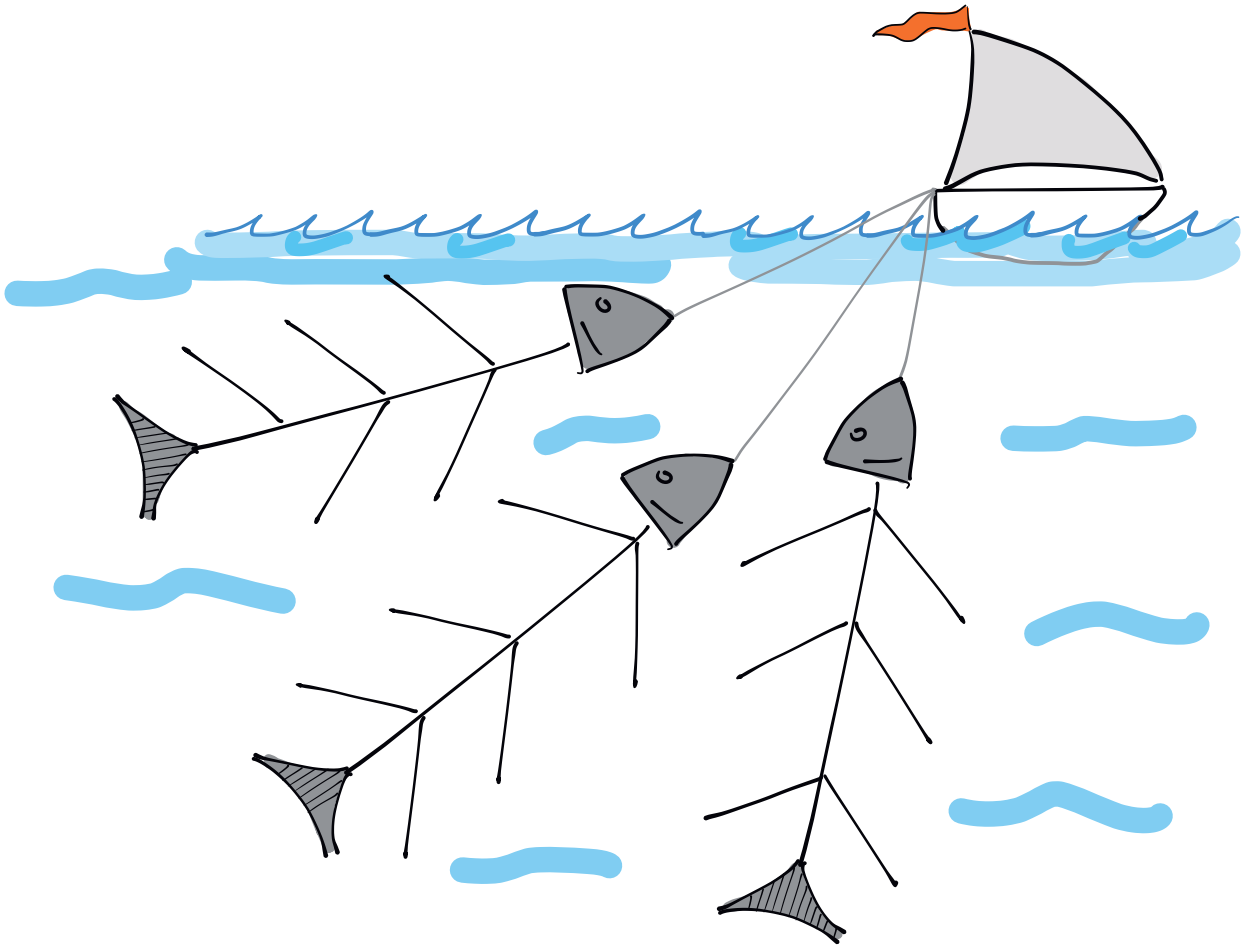
- While thinking of causes you may find some of them are closely related despite belonging to different categories. If that is the case, post-it, draw lines and arrows depicting such relations. They will help you to get the system perspective you are looking for.

- If you have enough time and energy, flesh out the tool with a short World Café session to brainstorm solutions. If you have identified urgent causes, split the team into one mini-group per cause. Each group will work on ideating solutions for each cause. Then start different rounds of discussion following the world cafe rules until everybody has worked on all the causes. To find out more about the World Café procedure visit http://www.theworldcafe.com

Find out more

http://www.climate-kic.org/transitions-hub

The Canvas



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