

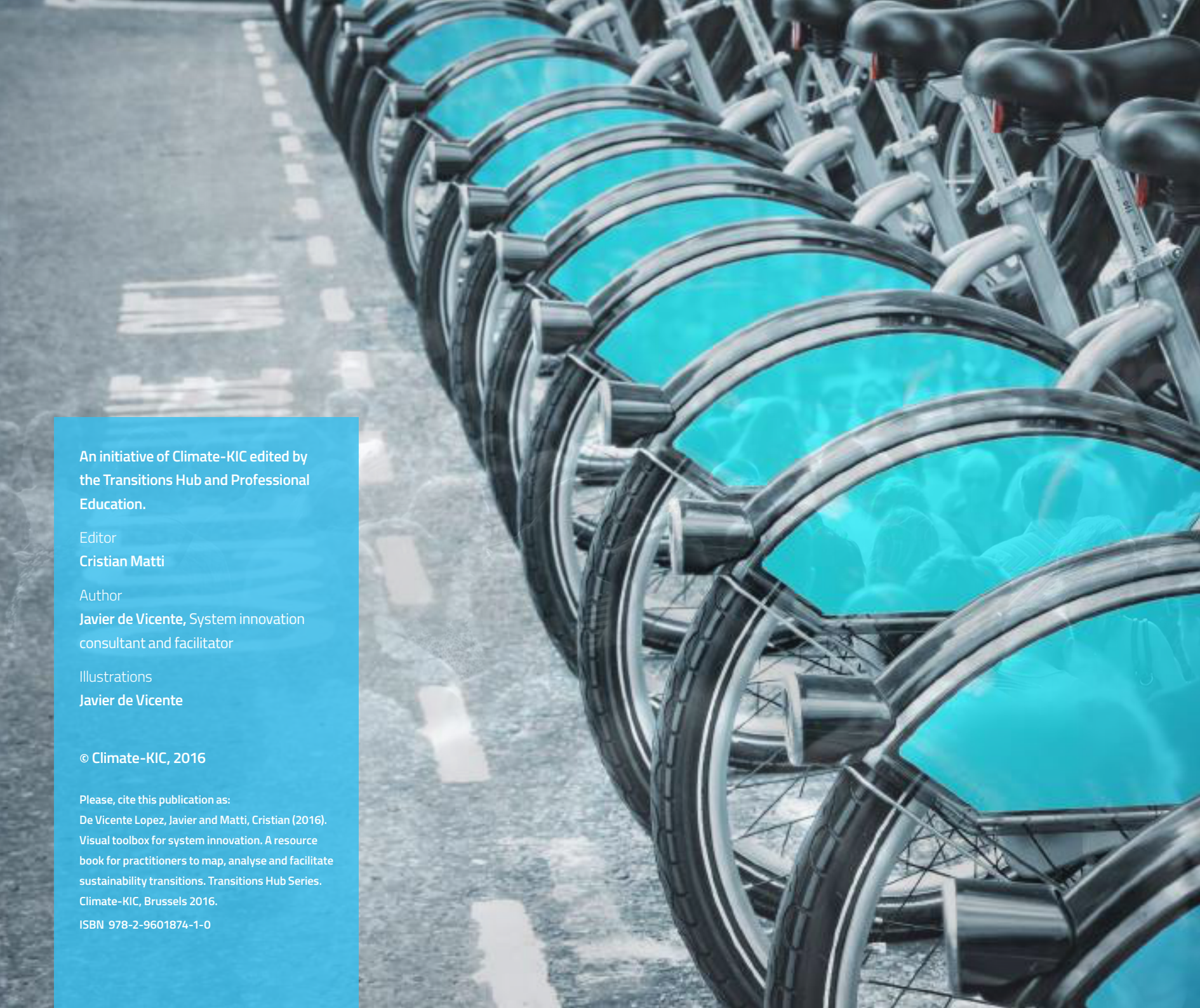


Visual toolbox for system innovation

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



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Why this book?

The idea of system innovation has been widely diffused in academia and business to refer to major transformation in national and regional economies through technological breakthroughs, reorganizations of industries and the implications of a globalised economy. In the field of climate change, this concept has been deeply applied through the study of socio-technical transition by a number of expert organisations such as the Knowledge Network for System Innovations and Transitions (KSI), the Dutch Research Institute for Transitions (Drift) and the STEPS Centre of the University of Sussex - (Social, Technological and Environmental Pathways to Sustainability). The more practical application of sociotechnical transition, known as transition management, has also been developed by practitioner-based organisations such as Smart CSOs and Forum for the Future.

The Climate-KIC has widely applied elements of system innovation and transition management by combining other general project and innovation management elements. Pioneers into Practice, the Innovator Catalyst and summer schools are some of the key education programmes that have adopted this approach for years. That experience has revealed the difficulties of applying the theories and perspectives to day-to-day practice in certain projects. Practitioners demand adaptable and flexible tools and methods that are easy to transfer to their challenges and problems.

At the same time, throughout these years of intense training, the use of co-operative learning methods, peer-to-peer activities and modular formats have arisen to be as highly valued by skilled participants who are demanding new learning methods in which experts and mentors are liberated to work more horizontally with practitioners and problem owners. All these experiences have been the inspiration for this book which aims to play a key part in improving the development, the skills and the application of support system innovation in the field of climate change at both, individual professional level and organizational level.



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1- What is this book about?

The book is a collection of ready-to-implement tools to structure and manage the challenges and exploit opportunities of sustainability innovations and transitions. The goal is twofold: improving the understanding of a challenge by going deeper, broader and by improving the quality of the discussions and conversations around the problem among participants. It means to put the focus not only on the problem solving process but also on the learning process while designing and implementing solutions. The tools are presented in a simple and visual approach with the purpose of supporting practitioners' every-day work on climate change, transition and system innovation.

The toolbox is rooted in a modular structure, built upon four modules that account for the main steps in the system innovation process before getting into the prototyping phase. That is: stakeholder management, multi-level per-

spective, visioning and back-casting and niche management. This structure is meant to facilitate the problem-solving process by setting out a pathway in the always blurred, uncertain and fuzzy process for system innovation. In addition to these modules, a standalone tool has been added to help users define the real problem they are facing.

The four modules holding the tools feed into a multi-disciplinary setting, including transitions management but also practical elements from innovation management, systemic thinking, design thinking and project management. Based on this structure, the learning approach is based on the assertion "learning by doing through the application of tools on the users' cases".

In this regard, the toolbox is designed to help pick out those tools that best adapt to the practitioners' needs and background. The design of the tools has been sculpted around four features to maximise the learning experience under this approach:

Flexible. The book is designed for you to pick out the tools that best fit your challenge and then you can adapt those you chose to your own context. To make it easy to find the most proper tool, a variety of alternatives with different levels of complexity have been designed.

Standalone. The tools have been conceived to work individually and as a full suite. That means, you can single out one tool and apply it to your project, whether you are going to use more tools or not. Regardless of this capacity to be applied in a standalone way, it is highly advisable to conceive a pathway to follow within your innovation project including a coherent set of tools.

Visual. Most of the tools have been designed as visual devices to spark creativity, systemic and lateral thinking. The book is not illustrated to make it pretty. The pictures have a clear purpose and shouldn't be skipped. It may take you time to feel comfortable with the visual metaphors proposed, but these techniques will help

your non-linear and creative thinking (you just might need to practise a bit).

Systemic. The toolbox aims for a systemic understanding of problems and challenges. Therefore, you can expect this type of conceptualisation underlying every tool instead of a linear process of reasoning. This is why all the tools have been designed to be used in multidisciplinary and even multicultural frameworks, and to factor-in data and inputs from the context surrounding the project.

This book was developed simultaneously with eLearning material based on the main elements of flipped and seamless learning. In that sense, the tools are presented to facilitate a learning process where different types of activities, at different times and with multiple resources can be applied. The tools are also designed to support project management, organisational change and capacity building process for organisations or multi-stakeholder project set ups. Thus, group work, project

development and peer-to-peer interactions are included as key elements for this flexible and tailored approach for practitioners.

2- How to use this book?

There are two important perspectives about how to use this book. First, is the use of the set of tools as a coherent sequence to support a system project management process or a training event. The second refers to the use of each single tool in whatever context you may need them.

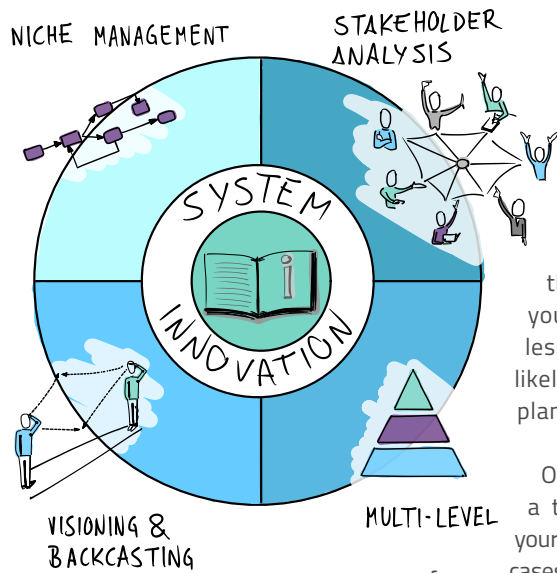
As explained in the previous section, the book is built upon four modules accounting for a suggested pathway for system innovation (not including the prototyping phase): stakeholder management, visioning and backcasting, multi-level perspective and niche management. A kick-off tool has also been added to better define the system challenge (find out more in the box).

With this structure in mind there are two main ways of

using this book. The first and simplest way is just to go for one specific tool you need in a certain moment of your project. Since the tools are designed as standalone devices, you may want to use one of them to work out a specific problem you are dealing with. For instance, you might only need to map out your stakeholders or to run a backcasting workshop. If that were the case, you wouldn't need to go through any sequence of tools but simply use the most relevant one.

The second way of using the toolbox is to be applied when you have a system project or a training workshop ahead of you. In those cases, you may opt for designing a comprehensive innovation route, starting with the problem definition and then going through the four modules. According to the challenge you face, the background and experience of the team and the context you are in; just pick out some of the tools from each module and build your own pathway for innovation.

You might think the toolbox suggests a kind of lineal



process for system innovation, but it doesn't. First of all, you don't need to cover all of the four modules if you think you don't need to at this stage of your project. Secondly, and more importantly, this is a systemic process to deal with systemic problems, even though you may design an initial process made up of five tools going through the suggested pathway. In this regard, most of the tools are to be applied once in a while during the project lifetime and many times there will be more than one tool in use at the same time. These feed-

back loops and parallel pathways characterise the real application of the toolbox to your project. Throughout these non-linear steps you will obtain invaluable lessons that will more than likely modify the previously planned pathway.

Of course, if you embark on a training workshop where your time, resources and real cases are very fixed, you might want to go for a more linear process, just to get participants acquainted with the use of the tools.

1. Stating the Problem.

It is often noticeable that the main issue for a project team is to nail down and define the real problem and challenge. This is especially relevant in system contexts in which wicked problems are difficult to pin down and when we run the risk of finding the right solution for the wrong problem. Therefore, this tool is aimed to reframe the problem by helping practitioners

to better spot what the right problem is and to nail it down at the same time as keeping a systemic perspective.

2. Stakeholder analysis.

Working with stakeholders is probably one of the commonalities in systemic projects and one of the first conditions. In this regard the toolbox covers three steps of this work with stakeholders: identifying, characterising and depicting relationships. Depending on time availability it can be useful to work with one tool from each category. Bear in mind that the stakeholder engagement phase is left out. For that reason, you may consider including a role game or similar activity to somehow engage your stakeholders with the conversation. The World Café, open spaces, roundtables or Fishbowl techniques can be applied for such a task.

3. Multilevel Perspective.

With the support of the stakeholders it comes to deeply understanding the system in which your project is embedded, how it works and how

it has evolved. In this regard, two types of tools have been included so far: one devoted to describe the dynamics (from past time to present time) of the system and another to describe a static picture of the current system or status quo. Whereas the static vision provides a comprehensive picture of the way the mainstream system works, the dynamic approach can help to understand how the system got to the current stage. You may start with the static perspective and then move onto the dynamic tool or the other way around. This is the type of flexibility to keep in mind when applying tools.

4. Visioning and Backcasting.

Foresight is at the very core of any disruptive and system innovation. By envisioning the future, your team will be able to step backwards, identify what changes would be necessary and then go forward again; setting an agenda of actions. This backcasting process is easily understandable but hard to put into practice, due to the counter-intuitiveness of starting in the future and

introduction

moving backwards. You can find tools with different levels of complexity so that you can select the tool you feel most comfortable working with.

5. Niche Management.

Under the label of niche management, the last module included in the toolbox addresses the issue of how to get lessons out of the project management process and how to apply those lessons to enhance the process. The goal is to include a new dimension in the project management process, emphasizing how an on-going learning and reflection process can move the innovation idea forward.

As to the use of each tool, as mentioned before, the focus of these tools is on the problem solving and on the learning process. The tools are not designed to be perfectly filled out and to represent a nice drawing but to think differently of new ways in tackling the problem, based on a systemic perspective and to learn from that process. Bearing that in mind, don't forget that:

You may feel like adapting the tool to your specific needs and context (background, culture...). If so, please, feel free to remove, modify or add new elements to the canvas. The only element to keep at the forefront of your mind is; keep the systemic perspective.

It is essential that you spend time in the debrief step after applying each tool. This debrief is to help you better understand the outcomes you got and how to apply them on your challenge, but also to give you some specific time and space to reflect on the lessons about the process, and your performance as a team. Therefore, don't skip or underestimate the value of a good debrief. Instead always try to break it up into two blocks: one devoted to the outcomes and the other to the process, its lessons and the consequences for the team.

Now you are ready for making the most of the toolbox. Decide what to start with and give it a try. Enjoy the experience and let your creativity out.







Stakeholder management

Innovating with people
instead of for the people



Stakeholder management

Stakeholder management has been largely used in many different disciplines from market research, policy making and product design, among others. This participatory approach allows for the involvement of affected people and organisations during decision making processes, providing solutions with a higher level of certainty, credibility and feeling of ownership.

Whereas market research or the most recent approach of user-centred design, put the focus on the person as an individual customer or user: social problems require a slightly different perspective, taking into account opinions coming from organisations, social groups etc. Meaning, the focus is put on the people, as an organised society, rather than people as a group of independent individuals.

When it comes to system innovation or socio-technical transitions, the process entails both, technology and society, and the way in which society uses technology. That means the context becomes more complex and a systemic perspective must be adopted. It is essential to understand and map out the dynamic process of innovation as a collective action in which many stake-

holders, playing different roles, have a key influence on the process and the yielded outcomes.

Therefore, the socio-technical approach to stakeholders is based on the recognition of the existence of a system of stakeholders in which each project/problem/challenge is embedded. This system forms a tangible network in which nodes account for the stakeholders, and links or ties account for established relations between actors. As a consequence of these relationships and individual features, the network evolves and emergent behaviours surface influencing or even leading the innovation process. This systemic and dynamic character provides part of the uncertainty and complexity inherently linked to socio-technical transition processes.

What is stakeholder management?

The stakeholder management process is made up of two phases with different steps in each. First, STAKEHOLDER NETWORK ANALYSIS, is aimed at understanding the network before working with it. That is, understanding the components (stakeholders), their behaviours and relationships and the network performance.

Second phase, STAKEHOLDER NETWORK ENGAGEMENT, is the process of carrying out the engagement itself, with the envisaged activities involving actors throughout the whole process of transition.

One of the main differences that stands out in the socio-technical transition approach from others perspectives is the dynamic character of the analysis. Socio-technical transition is an on-going and living process, the participants in such a process and their roles should be analysed more than once: at the beginning of the process, during the process and at the end of the process.

Why involve stakeholders?

By involving stakeholders in the process of defining the problem, ideating and developing solutions you get a number of benefits:

- Enrich the knowledge, experience and perspectives around the

“Participatory planning is a form of planning which implies the association and union of as many points of view as possible, in order to identify the best possible solution in terms of plans, projects or strategies. It is therefore essential to bring together actors representing different skills, knowledge bases, experiences and backgrounds.”

Jeff Bishop -BDOR Limited Bristol UK

table, this maximizes the probabilities of success.

- Reduce the number and the severity of conflicts between different involved or affected parts.
- Diminish the chances for absent stakeholders to spoil the process.
- Build a sense of ownership and belonging to the process, to the objectives, to the solutions proposed and even to the network of stakeholders, as if it were a community.
- Outcomes are more accepted and tend to be more sustainable.
- Due to the “multiplier” effect of the network, outcomes can easily trigger system changes

Stakeholder Network Analysis

Identifying actors

The first step is to identify who will take part, due to their closeness to the project, their inter-

est, their relevance, etc. At this stage, an actor can be either a person or an institution, and although major representatives of different sectors and categories should be on board, this step has to be as broad as possible.

Understanding actors

The second step is gaining a deeper understanding of the stakeholders. It is time to know their expectations, their explicit and implicit assumptions, what worries them, what keep them awake at night, their drivers, their knowledge and resources, etc. This step is largely used in design as a key part of the service and/or product design. In sociotechnical transitions this step is aimed to categorise stakeholders according to their own features and their influence on the innovation process in terms of interests, resources, etc.

Analysing networks

The third and more comprehensive step is to analyse and characterise the stakeholder network. As a result of relationships

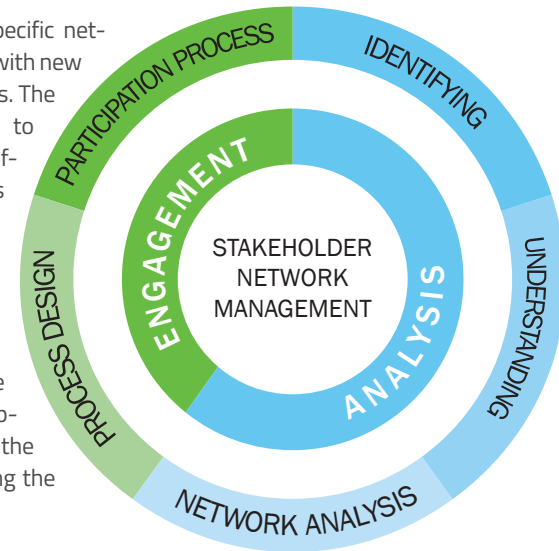
between actors, a specific network emerges along with new behaviours and trends. The goal of this step is to analyse the role of different stakeholders within the network and how those roles affect the way the network performs. This analysis comprises quantitative and qualitative approaches to unfold the information underlying the network.

Stakeholder Network Engagement

Process design

Before starting any participatory process it is essential to make some decisions about the process and its context. In this sense it is important to design a process that meets participants' expectations without getting lost in an endless sequence of workshops, discussions and useless conclusions.

This design has to feed into the stakeholder analysis conclu-



sions and, based on that, lay down solid geographical and temporal boundaries to the process, as well as clear rules for the decision-making procedures. The goals, scope of actors, timing, types of participation, etc. are among those decisions to be made at the start of the process. At the same time, the information that will be needed during the process must be envisaged at this stage. Both qualitative and quantitative data must be prepared in advance to be available as an input for the stakeholders taking part.

Eventually, the time comes to decide the method or methods to be applied. There are myriads of methods that might be applied. Among them the World Café, Fish Bowl, Charrettes, Appreciative Inquiry, Focus Groups, Daydream sessions, etc.

Participation process

This phase is the real and final step of the whole process of Stakeholder Network Engagement: work together with stakeholders throughout the system innovation or transition process.

As mentioned before, during this process it is advisable to review the stakeholder analysis, checking if either new actors have joined the network, or the role of current stakeholders has significantly shifted.

An essential feature of the whole cycle of Stakeholder Network Engagement is its temporary nature. As explained in previous paragraphs, the composition of the stakeholder network can vary as the process goes forward. Sometimes new actors

join the network while others just leave the network because of a lack of interest or because they are no longer affected by the project. Other times, the role of one actor changes dramatically and becomes irrelevant, or emerges as an essential hub in the new configuration. All of these situations force managers to carry out this cycle of activities, time and again, throughout the process lifetime.

An essential feature of the whole cycle of Stakeholder Network Management is its temporary nature. This means you will have to carry out the actor analysis time throughout the project lifetime.



Stakeholder management

- Tool 1**
Pentagonal problem
- Tool 2**
Actor tree
- Tool 3**
Enlarged empathy map
- Tool 4**
Credential cards
- Tool 5**
Stakeholder mapping
- Tool 6**
Stakeholder universe



Tool 1 Pentagonal problem

Stating the problem

Making your problem tangible is the first step in looking for a solution. Before working on an in-depth understanding of a problem or challenge, and the search for solutions, it is necessary to have a clear description of such a problem. If you understand the problem, you can start building solutions.

Pentagonal problem

What it is

Pentagonal Problem is a visual tool to help teams nail down the problem, identify its different components and details, getting to a common ground for future actions.

When to use

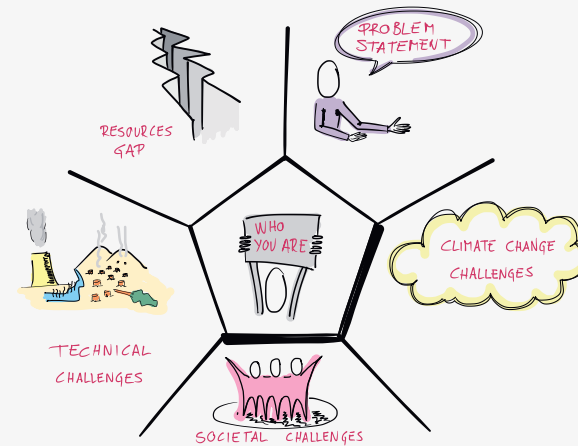
Whenever you face a complex problem, with multiple sides, perspectives and nuances that make it difficult to define it in a single sentence or paragraph. Challenges related to climate change are a clear example of these kind of problems.

Why it is useful

System innovation entails a completely different approach

in the way we define and address problems. Problems are no longer simple or isolated. Instead, they can affect a myriad of stakeholders with different perceptions and interests, they are cross-sectoral, long-term, and interconnected with the ecosystem and societal structures.

In this context we need more comprehensive tools to better define, state and understand current problems. Pentagonal problem is a tool that starts with your own perspective of the problem, and helps you to deepen your understanding by including different aspects of it. Using this tool, you will be better prepared to look for system solutions.



HOW MANY From 1 person to groups of 10 people.

HOW LONG 40-60 min.

DIFFICULTY Low.

WHAT YOU GET A comprehensive and visual depiction of the main systemic components of your problem.

WHAT YOU NEED A basic idea of the problem you face and an open mind to see how the context affects such a problem and conversely how the challenge affects the context.

WHAT IS NEXT You can go on with the stakeholder analysis or go for the System analysis if you prefer diving deeper in your comprehension of the context surrounding the challenge.

Steps

STEP 1. Define yourself

Draw a large pentagon in the middle of a big piece of paper and start by defining yourself. The pentagon accounts for yourself (as an individual or team). Take into account that the same problem is perceived in different ways and shapes by different actors, therefore it is essential to start by defining yourself. Are you a company? A government? A user association? Are you leading the search for a solution?

This definition will provide the context for the rest of the exercise, therefore spend time on defining in a clear way who you are. Be as specific as possible. If there are different perceptions within the same group/organisation, please reflect all of them on different post-its. Once you have depicted yourself, it is time to define the problem through five different “faces”.

STEP 2. The basic statement

First of all, try to describe the problem in one single sentence or short

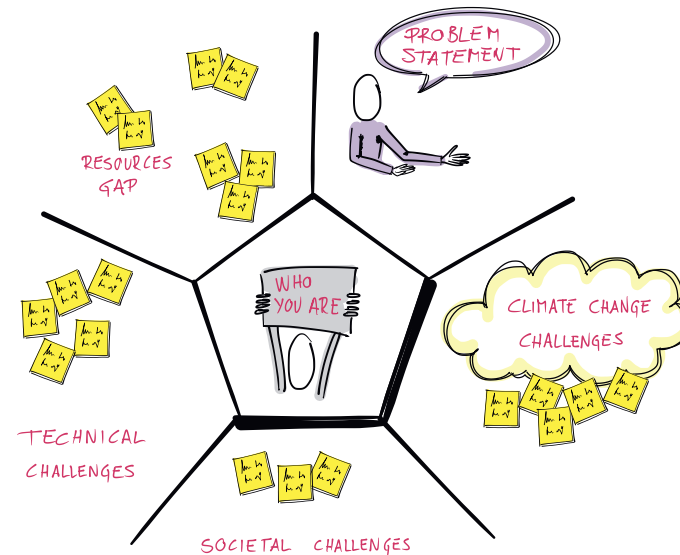
paragraph. Try to be conversational. The goal here is to describe the overall problem or challenge you are facing as if you were in a conversation with other colleagues. Avoid any piece of information that is not necessary to understand the “big picture” problem. Leave out the details and nuances, they will be placed in other “faces”.

STEP 3. The climate change challenges

Now it is time to specify the climate change related challenges that your problem is tackling. Pay attention to the problems with CO2 emissions, water scarcity or whatever they are. Use post-it notes and write down one idea (climate change issue or challenge) per sticky note. Bear in mind that it is only about climate change. In the case of many participants you can make clusters with the notes and identify the main clouds of climate change problems.

STEP 4. The technical challenges

You are probably thinking about technical solutions for



your problem, or you may be a technical entrepreneur. If that is the case, this is your time. Approach the problem as a lack of solution: what are the technical challenges you are resolving? Where are the technological/technical bottlenecks you have to overcome or have to get around? Where is the technical basis for your potential solution? Is there any other experiment you can build on? Are any other sectors tackling the same problem and applying some solutions?

Again, write down one idea per post-it and place them on the canvas. If necessary, cluster the notes and identify the main clouds of technical problems.

STEP 5. The social challenges

Now it is time to think of society and how it is affected by the problem, or, conversely, how society impacts the problem. Is societal behaviour worsening the problem or it is getting it better? What are the societal challenges underlying your project? What is the main expected or needed change? What are the visible bottlenecks? Are there any specific groups especially affected by the problem or having a significant effect on it? Are there any institutions or organisations playing a significant role? What direction are the regulations pushing towards? Using post-its, write down as many ideas as possible to get the most



Themes.

Sea side

Towns

City

Country side



<https://learning.climate-kic.org/courses/system-innovation>

Screenshot from online materials. System innovation and Climate Change eModule. Climate-KIC, 2016.

comprehensive picture. If necessary, cluster the notes and identify the main clouds of societal challenges.

STEP 6. The Gaps

After describing four sides and nuances of your challenge, where could you spot the main gaps with respects to resources? Do you need some new technology? Do you have a lack of knowledge? Is it a matter of regulations? Identify the main gaps that need bridging to complete your project or to make a solution come to light. Write down one idea per post-it and place them on the canvas. If necessary cluster the notes and identify the main sources of gaps for your challenge.

STEP 7. Debrief

Once you have completed the pentagonal description of your project, go over the first problem statement and how it has been enriched with many nuances and inputs coming from very different sources. Do you think you got a thorough description of your challenge? Did you get a new un-

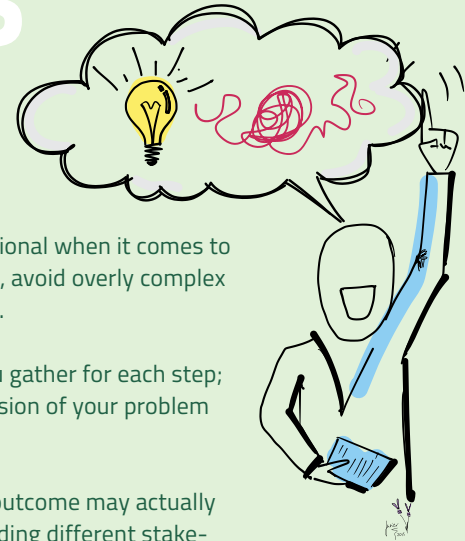
derstanding of your problem? In your description, do you feel you included more than necessary? Would it be possible and advisable to cut something out in order to better explain the problem? Or, do you think you are still leaving something out?

Do you think your challenge is a technical problem, a social problem, an environmental problem... or a mixture of them? Does one of the "faces" seem more important than the others?

Regarding the variety of inputs, do you consider it important to gather different perspectives about the challenge?

Now try to rephrase the problem statement taking into consideration all the inputs you obtained. Are you able to come to a consensus for the new definition? Is it easier or more difficult to broaden such a definition? Do you consider it is possible to get everybody committed with a new definition of the problem? Do you think changing the starting point, who you are and what your role is, would change the outcome as well?

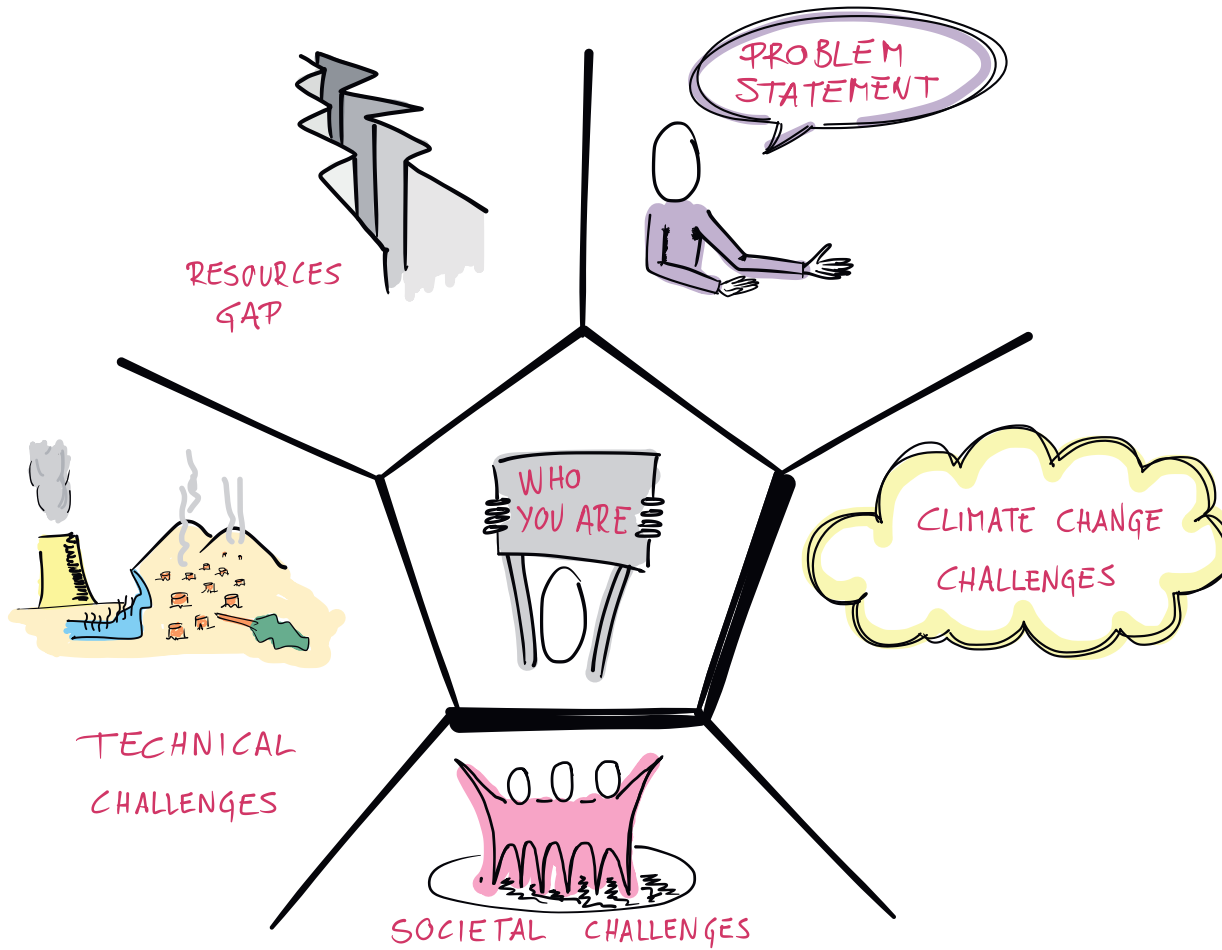
Tips



- Try to be conversational when it comes to defining the problem, avoid overly complex or 'wordy' sentences.
- The more ideas you gather for each step, the richer the final vision of your problem will be.
- In this regard, the outcome may actually be improved by including different stakeholders in the team.
- Time permitting, after filling in each cell, you can try to restate the central problem, taking into consideration the ideas on the post-its. This will give you a perspective of how the problem is changing as new inputs are included, and you will experience the difficulties of integrating different approaches and inputs.

Find out more

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





Tool 2 Actor tree

Stakeholder Analysis

The first step in stakeholder analysis is to identify and list any potential stakeholder affected by the challenge or with capacity to affect it.

Actor tree

What it is

The Actor tree canvas is a visual tool that helps you identify, list and categorise the myriad of stakeholders around your project. Stakeholders are depicted as the roots of a tree that will feed and carry out the process of system innovation, represented by the crown of the tree. The trunk, in turn, accounts for your challenge.

When to use

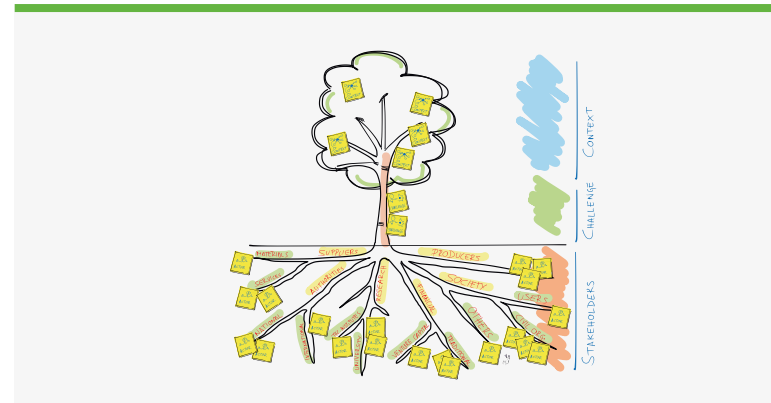
When you are going to start a new project that you know affects or may be affected by a number of stakeholders and you are aware of the importance of their engagement. It should be done at the very beginning to allow you to include them (actual-

ly, some of them) throughout the project process.

Why it is useful

In an interconnected world, projects, services and products are no longer standalone outcomes but are strongly tied to a network of stakeholders, whether they are potential customers, clients, competitors, allies, etc. There is a lot of evidence that engaging that network in your project from the very beginning, leads to better outcomes; it keeps the project from derailing and builds a sense of ownership and belonging, not only to the outcome but also the process.

For this process to succeed, the first and crucial step is to identify the cohort of stakeholders you will potentially engage.



HOW MANY From 1 person to groups of 10 people.

HOW LONG 40-60 min.

DIFFICULTY Low.

WHAT YOU GET A categorized list of the main stakeholders for your challenge.

WHAT YOU NEED A deep knowledge of the challenge and its context in terms of actors and institutions playing any kind of role or being potentially affected by the project. Essential: an open mind to engage/empathise with actors with opposite interests to ours. The Pentagonal problem can provide useful inputs for this tool.

WHAT IS NEXT After having a list of stakeholders you will need to know them better: their needs, expectations and possible reactions. You also need to map them out to make their stances and relations clear. Consequently, you can go on with the stakeholder analysis tools such as the enlarged empathy map or the actors map.

Steps

STEP 1. The challenge and the context

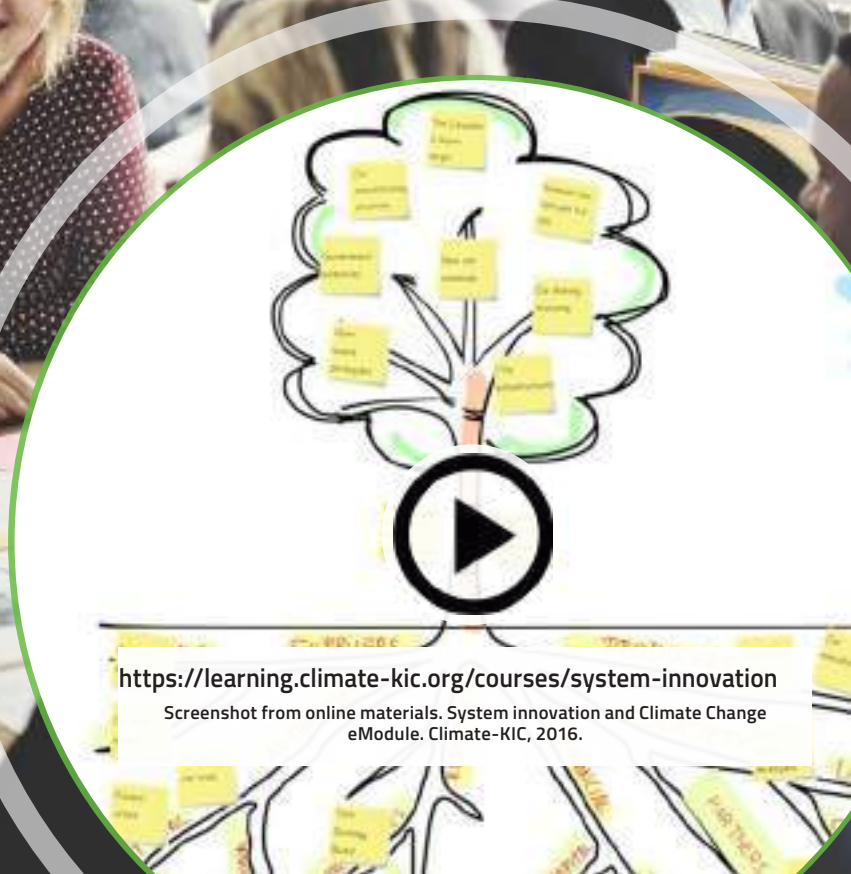
Take a big piece of paper and draw the tree canvas. As explained before, the roots account for the network of stakeholders, the trunk for the challenge and the crown for the context in which your challenge is embedded. The starting point for this tool is to nail down the challenge or project you have, and the context around it. First, write down a brief description of the challenge on one or more sticky notes and put it on the trunk. Bear in mind the rule of thumb: one idea per post-it. As you probably saw with the Pentagonal problem, there are a variety of approaches and perspectives about your project, depending on who is looking at it. If you are using the tool in a diverse team, try to include as many perspectives as possible to broaden the problem definition. Finally, when all the definitions are on the canvas, try to come to a consensus and write a single statement for the problem.

Once the problem is defined, write down any features of the context that you consider significant for the stakeholder identification and put them all together on the crown of the tree. Ask yourself questions similar to the following to see what to include: Are governments relevant to the problem? Are there any other experiences you can build on? Are there little known but promising experiments? Is the problem you face affecting any particular group the most? Are there any organisations occupying the current market? the Pentagonal problem outcome can feed the crown with valuable inputs.

STEP 2. Chunking down into categories

With the challenge and the context in mind, the following step is to identify categories and subcategories of actors clearly represented in the system around your challenge. Draw a new root for each category you identify, and a new root branch for each subcategory.





<https://learning.climate-kic.org/courses/system-innovation>

Screenshot from online materials. System innovation and Climate Change eModule. Climate-KIC, 2016.

You can use the following list as an inspiration for your own categorisation: Researcher (private, public, university, company), Financial (private, public, social...), Users, Producers, Suppliers, Owners, Authorities (supra-national, national, regional, local), NGOs, Interest Groups, etc. In addition to the suggested subcategories inside brackets, you may think of different sectors, company sizes or ownerships, localisation, etc. as properties to further subdivide your categories.

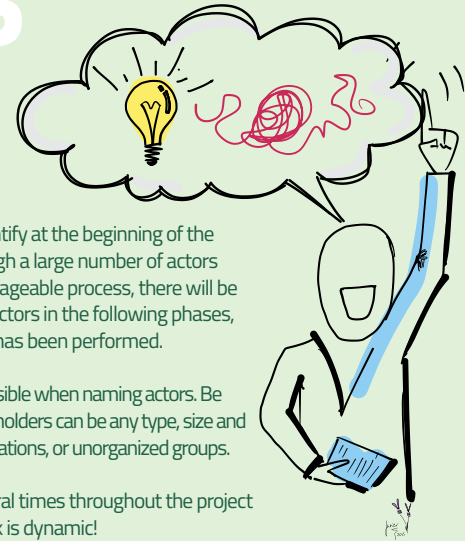
STEP 3. Closing gaps

To finalise the tree, look for those hidden stakeholders: outsiders, groups barely organized and with no skills for self-organization, minorities, etc. If you consider they might come in relevant, factor them into the list and future network. It doesn't matter if you are not sure about their future involvement, given that you will have the opportunity to decide later on.

STEP 5. Debrief

Spend some minutes on reflecting about the outcome you obtained. Some of the questions you might ask are the following: Do you think you have spotted many or few stakeholders? Did you find it difficult to come to a consensus regarding the stakeholders to factor in? Do any of the branches look more relevant than the others, with many more stakeholders? If so, does it reflect the real world or is it a possible bias due to the team background? Do any of the roots have very few stakeholders, even though you are aware that there must be many more? Were there any stakeholders belonging to different roots at the same time? If so, what did you decide? Did you put them in several roots? Does the big picture of the tree with the context, the challenge and the stakeholders, help you to better understand the problem?

Tips



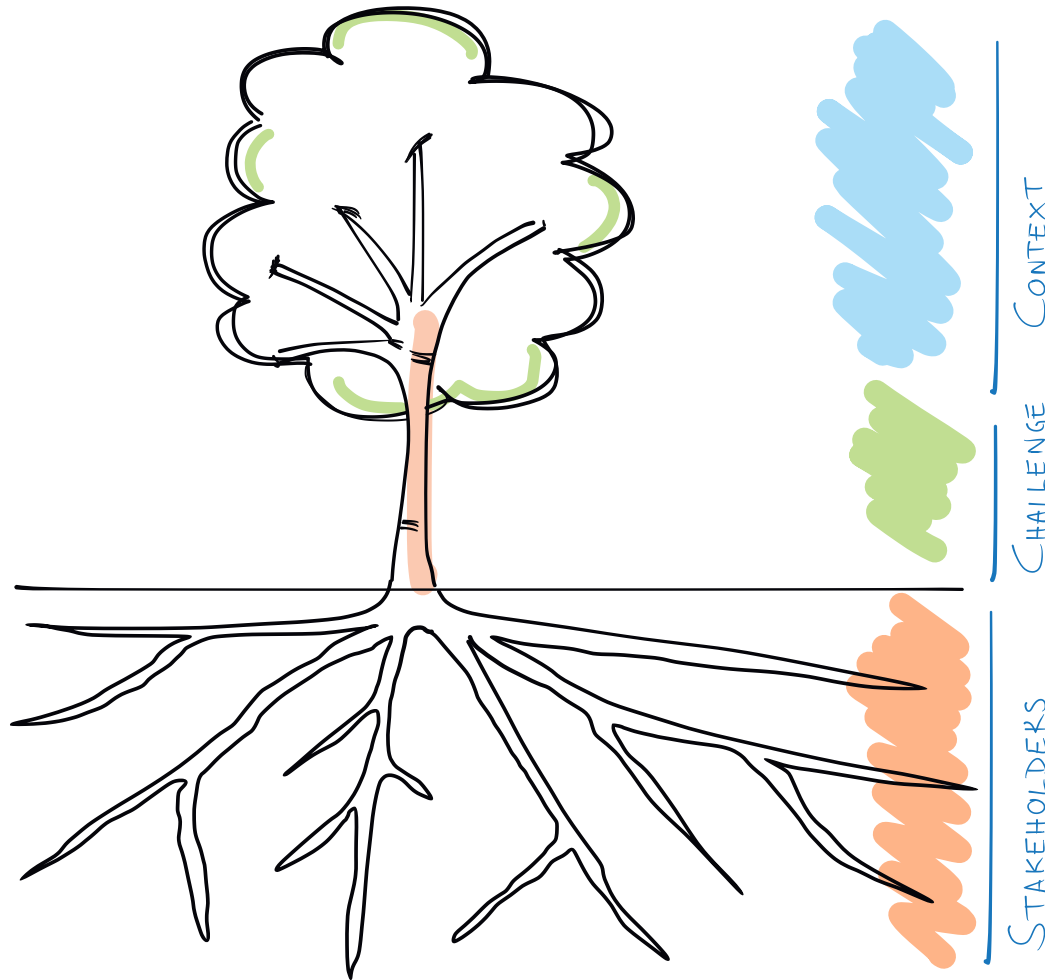
- The more actors you identify at the beginning of the process, the better. Although a large number of actors might end up as an unmanageable process, there will be opportunities to filter out actors in the following phases, after an in-depth analysis has been performed.
- Try to be as specific as possible when naming actors. Be aware of the fact that stakeholders can be any type, size and capacity: individuals, organizations, or unorganized groups.
- Repeat the process several times throughout the project lifetime, an actors' network is dynamic!
- Don't fall into the temptation of NOT mapping those stakeholders who apparently are less important: outsiders and surrounding stakeholders. They might not look so important, but they can definitely give you the out-of-the-box approach you need later on and can play a key role, especially in the beginning of the process.
- Be aware of hidden stakeholders. They are usually well known by some of the players but not so much by the public. Not involving them right from the beginning could jeopardise the project in subsequent phases.
- Where the stakeholders are not organised, a strategy to get them to assert their stake is to include them and to help them to self-organise.

Find out more

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

Actor tree

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.



Tool 3 Enlarged empathy map

Stakeholder Analysis

Understanding actors. The Enlarged empathy map is a quick and visual tool of the well-known technique called "Personas" and allows you to explore and infer the drivers, fears, concerns, etc. that fuel each stakeholder.

Enlarged empathy map

What it is

The Enlarged empathy map is a visual tool that allows you to build a stakeholder profile by quickly browsing the sources of information you have close at hand. The empathy map is intended for you to put yourself into a stakeholder's shoes and thereby see the challenge from a different perspective. It is based on the Empathy Map developed by Scott Matthews of XPLANE and the variation **Enhanced Empathy Map** from the Visual Innovation Accelerator.

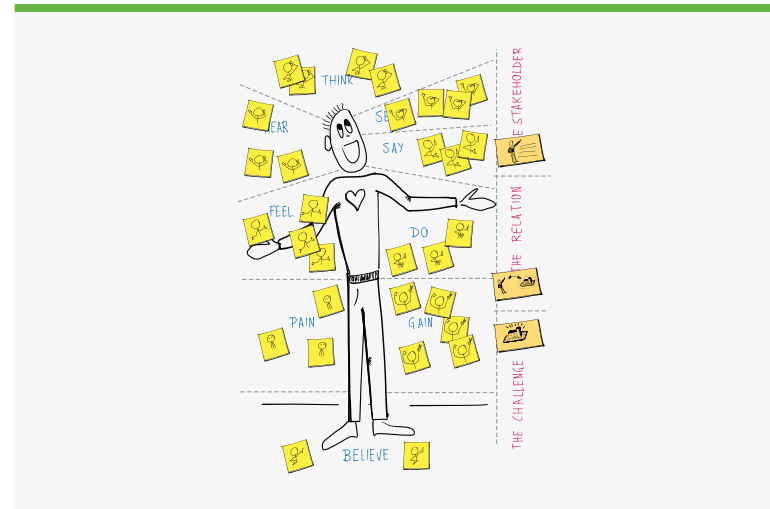
When to use

When you have carried out an identification of your poten-

tial stakeholders and want to know more about them and don't have the time or the resources to carry out in-depth market research. It is a tool to apply only with those stakeholders who you think you are going to engage with the process, whether it is a project, a product development or whatever.

Why it is useful

The main value of this tool is how quickly you can get a clear and pretty accurate profile of a stakeholder. By doing that you will be in a better condition to decide whether to invite them to participate or not.



HOW MANY From 1 person to groups of 10 people.

HOW LONG 30-45 min.

DIFFICULTY Medium.

WHAT YOU GET A visual depiction of your stakeholder profile: their main needs, drivers and expectations, as well as their behaviour and sources of information. (this tool is for ONE stakeholder, in-depth)

WHAT YOU NEED Sources of information about the stakeholder. It can be the internet, newspapers, journals, documentaries, etc. In a training session it is crucial to provide participants with the material needed.

WHAT IS NEXT You may want to find out more about stakeholders' relations, the balance of forces, potential allies, etc. To do so, move on to the stakeholder map or to the stakeholder universe.

Steps

STEP 1. Sketch out the canvas

Take a large piece of paper and draw a large version of the canvas in which your specific stakeholder is depicted. As you can see, there are nine different areas you need to work on in order to describe the stakeholder: Thinking, Seeing, Hearing, Saying, Feeling, Doing, Believing, Pains and Gains.

STEP 2. Setting the scene

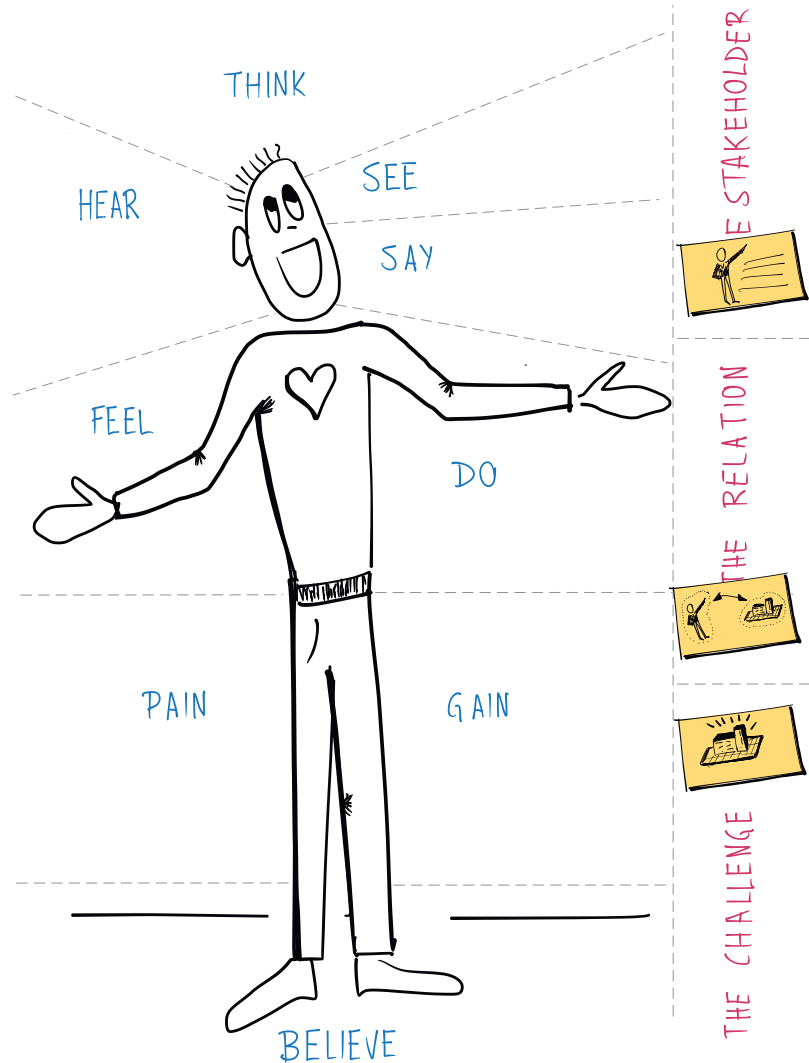
Once the canvas is on a wall, write down the name and a short description of the specific stakeholder to be described and put it on the upper right-hand side of the canvas.

Then, pay attention to the challenge you are working on. It might be a project or a problem you are trying to find a solution for, or it might be a product or service you are designing or reshaping.

If you used the Pentagonal problem tool, its problem statement can serve you as input. Write the problem statement down on a post-it and put it on the lower right-hand side of the canvas.

Finally, look at the stakeholder and how he/she relates to the challenge. Is she a prospect, a client, a user of your service/product? Is she affected by your project? Or, can she affect the process of developing a new solution? If so, in which way? Describe this relation on a post-it and place it between the stakeholder and challenge description. These three notes will provide the context for the rest of the tool.

By applying the enlarged map, you will be in a better condition to decide whether to invite a stakeholder to participate or not.



STEP 3. Thinking and responding

Next, the group starts trying to fill out those nine areas by responding on sticky cards to the questions linked to them. In the following paragraphs you can find a list of questions that you can use as a guideline to find your answers. Please, remember to write only one answer per post-it. Use others' creativity to feed yours, if any other answers elicit new ideas, just write them down and put them on the canvas.

THINK (brain)

"What does he really care about?"; "What is her endgame/deep belief?"; "What do they think about the challenge and the current market solution?"; "How do they think about their fears and hopes?"

SEE (eyes)

"What do they see when they face the problem/challenge in their daily life?"; "What TV programs does she watch?"; "What is the context/environment they see around them?"; "What tech-

nology/solutions does the market offer?"; "What does a typical day look like in their world?"...

HEAR (ears)

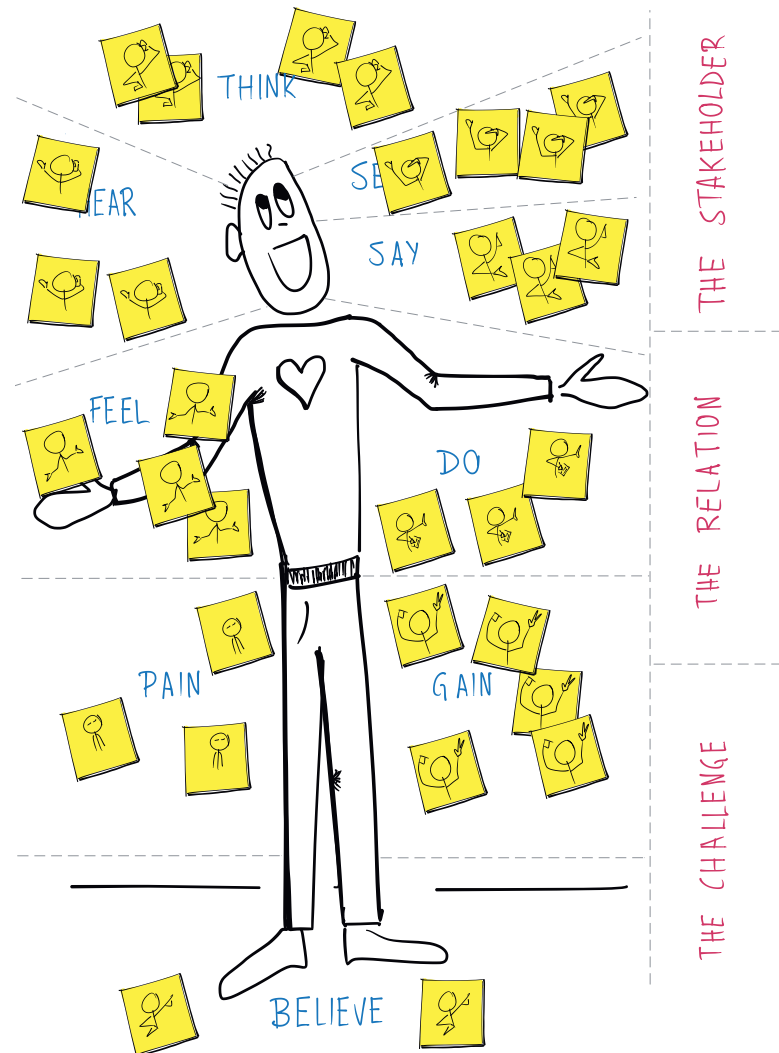
"What do their friends/boss/relatives... say?"; "What influencers do they follow and what do they say?"; "Who does he really listen to?"; (radio, forums, social media...), "What do they hear when other people use the same technology or face the same problem?"; "Is she following the big players?"

SAY (mouth)

"What does she say regarding the challenge in a conversation?"; "Is he inspired by an inspirational idea when talking about the problem?"; "What do they say when using the current technology?"; "What opinions do they state about innovative solutions?"

FEEL (heart)

"What do they feel when using the technology, whether in private or public?"; "What are his feelings regarding the players in the market and society, related to the challenge?"



DO (arms/hands)

"What is their attitude in public when it comes to interacting with the technology or problem?", "What is her behaviour when using the current solutions?", "Is he trying to do anything to defy or modify the status quo?"

PAIN (back)

"What are the barriers they face in their day-to-day life?", "What are their pain points when using the current solution?", "What are their concerns about new solutions and future changes?"

GAIN (legs)

"What do they really want from the technology?", "What are her actual needs?", "How do they measure success?" "What are his expectations regarding the problem in terms of solutions and general environment?"

BELIEVE (feet)

"What do they actually believe?", "What are their thoughts rooted in?", "What are their implicit and explicit assumptions about the challenge? (technology, how society reacts...)"

When you look at the completed canvas, spend some minutes reflecting on the process and the outcome.

Regarding the outcome: Do you think you got a comprehensive and in-depth picture of your stakeholder? Did you gain new insights? Have your initial ideas and assumptions changed as a consequence of the exercise? Do you feel there are still some gaps of information? If so, what? Where would you think you can find the data necessary to fill those gaps?

As to the process, think about how you felt as an individual and as a group while trying to find out and infer the stakeholder's features. What difficulties did you come across? Do you think you needed more sources of information than those provided? Did any conflicts arise between group members about some specific answers? Did you all have a similar approach in the way you interpreted the stakeholder's attitude and perspective? How did you deal with those conflicts?

Tips



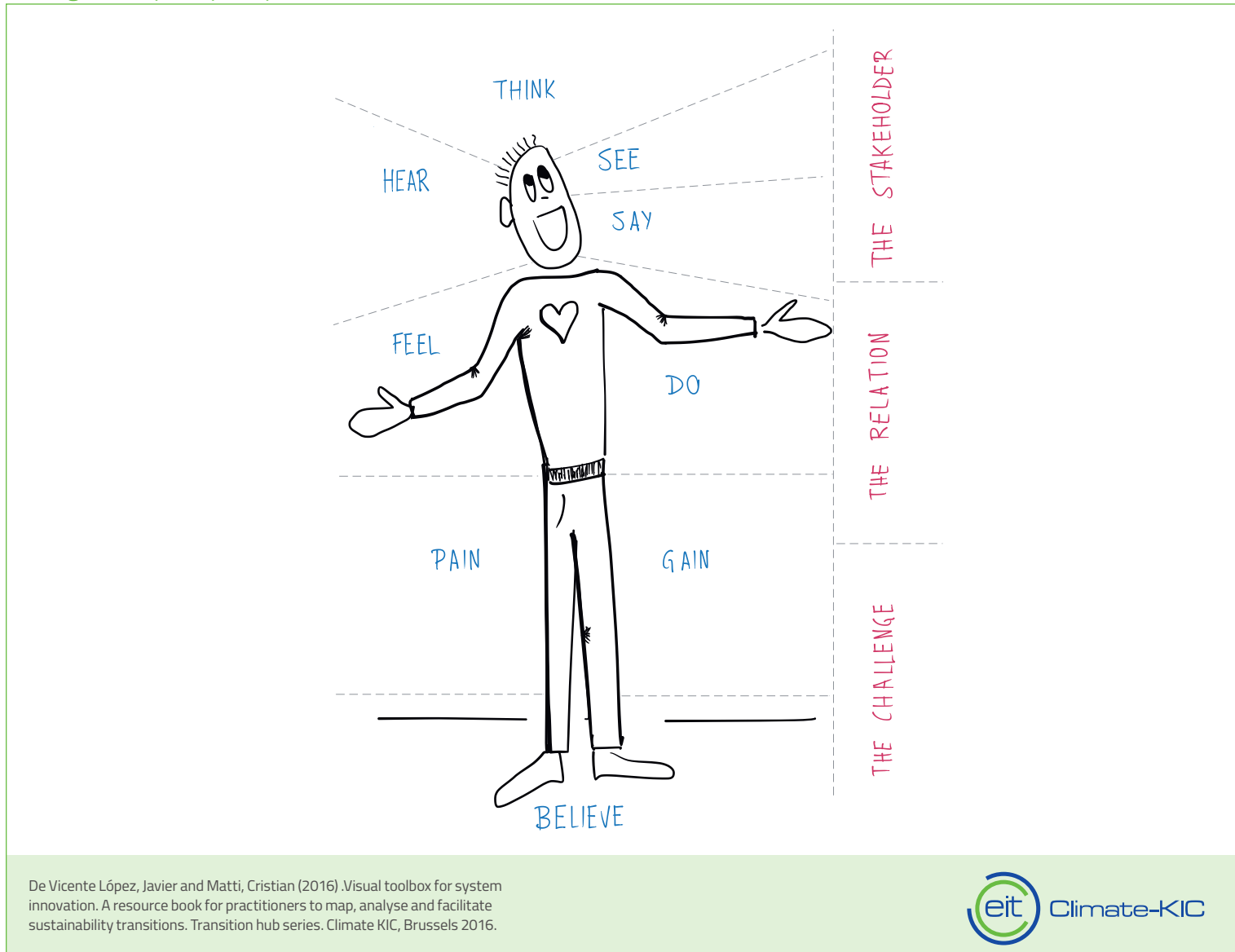
- This is a technique that can be enriched with others such as stakeholder interviews, shadowing, market analysis, etc.
- When searching for information try to find out what other stakeholders think about the one you are working on. It might make you change your opinion and answers.
- If there are opposite answers in some areas, keep them on the canvas, bear in mind human complexity and the fact that sometimes both answers might be right under specific circumstances.

Find out more

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

Enlarged empathy map

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. Transition hub series. Climate KIC, Brussels 2016.





Tool 4

Credential cards

Stakeholder Analysis

Understanding actors. The Credential Cards tool aims to characterise stakeholders' stances and relation to the challenge.



Credential cards

What it is

The Credential cards is a tool to characterise a stakeholder's stance about the challenge and more specifically how they relate to that challenge. That is, how they are influenced by the problem and the future solution and how they can influence the process of developing the new solution. The tool is made up of four components: (1) Actor Description, (2) Problem Statement, (3) Stakeholder Wheel and (4) Stakeholder Equaliser.

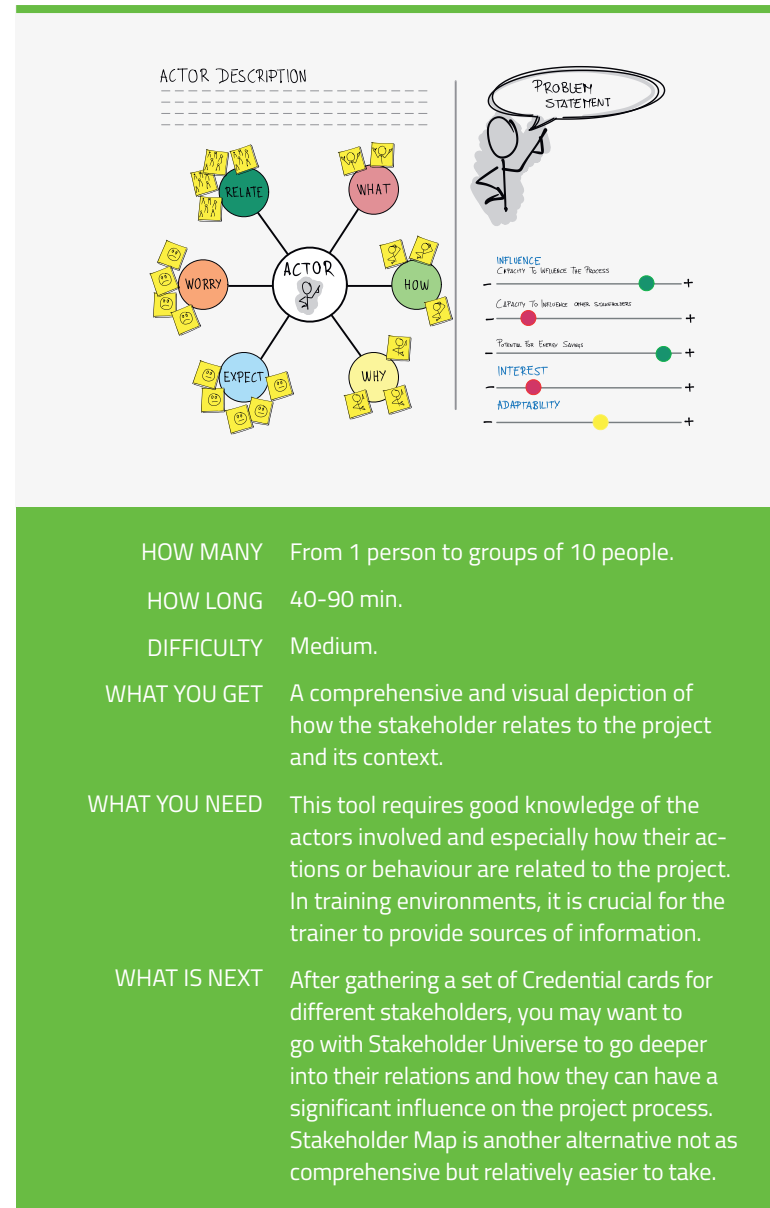
When to use

When you have completed the identification of stakeholders for your project and, if needed, the Enlarged empathy map for some of them, you will want to explore more in-depth how they relate to the challenge. Unlike the

Enlarged empathy map, the Credential cards put the focus on the stakeholder's behaviour and relation with the project, including the current status quo. It is interesting to use it when you don't have the resources or the time to carry out a network analysis by using, for example, the Stakeholders Universe tool.

Why it is useful

The Credential card provides a vision of stakeholders centred on their relations to other project components which allows you to infer their reactions if the project starts. It might be seen as a tool that gathers some of the qualities from the Enlarged empathy map and from the Stakeholder Maps. It is a good exercise to do before deciding whether to invite or not a stakeholder to take part actively in the project process.



Steps

STEP 1. Setting the scene

Before starting with the tool, clearly define the challenge or the problem you are facing. You can resort to the Pentagonal problem outcome or any other tool you have used to narrow down the challenge. Right after that, define who you are and your role regarding the project. Perhaps, you are the project manager, the promoter, a facilitator, etc. In any event, the team has to have a clear idea of their role in the project. These two elements don't belong to the canvas as such, but they make up the starting point and the perspective for the tool.

Therefore, with both elements in mind, take a large piece of paper and draw the canvas as it is in the example below.

STEP 2. Stakeholder description

Describe briefly the stakeholder you are going to analyse: write their name, describe in which category it falls, and briefly include any important features you think are noteworthy. You might use the same cate-

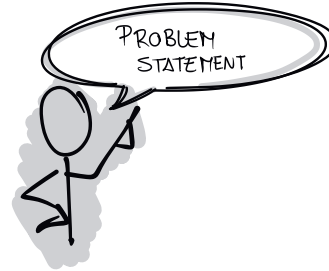
gories you have previously used to identify and list the actors.

STEP 3. Problem statement

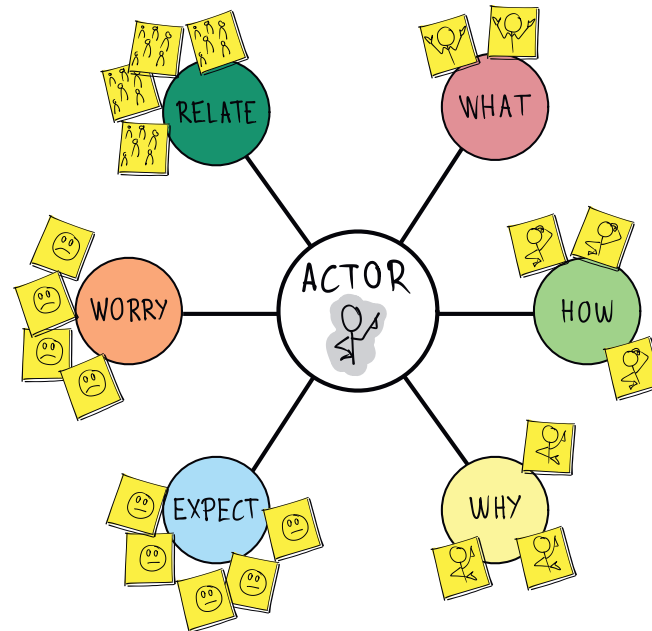
Paraphrase the problem or the challenge you, and as a team, are addressing but from the stakeholder's perspective. You need to picture what their perspective is, what their vision looks like, what their link to the project is and what they are really concerned about. The statement should be written in first person just as if he/she were claiming it.

STEP 4. Stakeholder wheel

The wheel is the deepest part of the Credential card and it will take you longer to work on. It is aimed to unfold the stakeholder's stance with regard to the challenge you are tackling. It is aimed to help you describe what the stakeholder's expectations are on the project, relationships with other stakeholders, with the current solution for the problem you are tackling, their needs, etc.



ACTOR DESCRIPTION





Defining a regional policy
for biomass management.
Public participation
workshop, Castellón,
2015 (Spain).
<http://goo.gl/Q8vzeH>

Decide on which element of the wheel you are going to start with: "What", "How", "Why", "Expectations", "Worries" or "Relations". Then take your time to individually write down as many ideas as possible, answering the question in play. After five or ten minutes, all the members explain, out loud, their ideas and put their post-it around the element. It is important to generate discussion to unfold any nuance or detail that might stay hidden or unknown. If new answers are triggered during the discussion just write them down and put them on the canvas. After completing one element,

move forward to the next one and repeat the process.

WHAT.
What does the stakeholder actually do?

It accounts for the activities the stakeholders carry out as long as they are related to the project or challenge you are facing.

HOW.
How does the stakeholder do what she does?

Describe how the actors carry out the activities listed before.

WHY.
Why do actors do what they do

and in what way? Dive into the reasons underlying stakeholder's behaviour. Don't settle for the first reason that comes out.

EXPECT.
What would they expect from an alternative solution? Underneath the stakeholders' reasons, it is possible to find out what they expect from any solution to their needs related to the project.

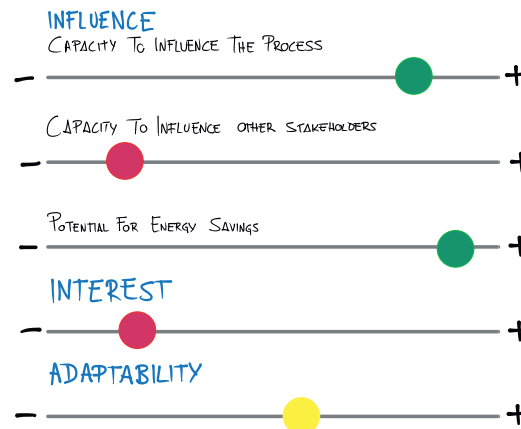
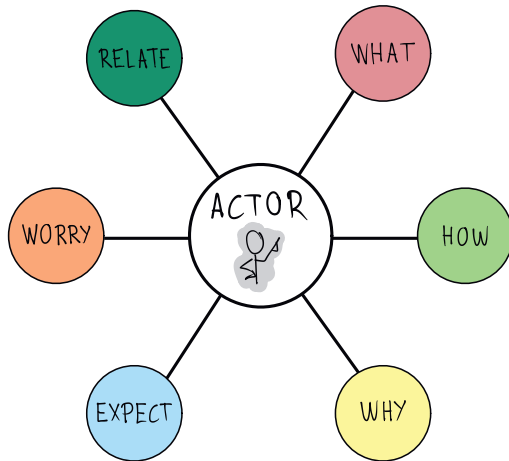
WORRY.
What are stakeholders concerned about? These concerns can drive their future decisions more than expectations; not addressing

them could derail any attempt of innovation.

RELATE.
Who is each stakeholder related to? In a systemic vision, relationships are as important as stakeholders themselves. They can lead actors to change their minds regarding the challenge or adopt a stance different from what they are expected to.

STEP 5. Stakeholder Equalizer

This tool is intended to make a first assessment of the actor's behaviour with regard to the system they all make up and the





potential role they can play in the future. To do that, three attributes are assessed: Influence, Interest and Adaptability. Assessing them is not an exact science, therefore pay attention to the definitions and the questions below, as a means to estimate where they are placed.

INFLUENCE

It accounts for their ability to influence both the process and/or other stakeholders. The bigger the ability to affect others' perceptions or the process itself, the higher their relevance for the process is. If useful, you can break it down into different variables.

INTEREST

Do stakeholders have a large or small interest in the project? Are they indifferent to your project? What is their level of engagement, involvement, closeness or even commitment?

ADAPTABILITY

What is the likelihood for them to change their position throughout the process? Do they have a lot of interests in the current status quo and will they strive to pre-

serve it? Or would they be open to a major change?

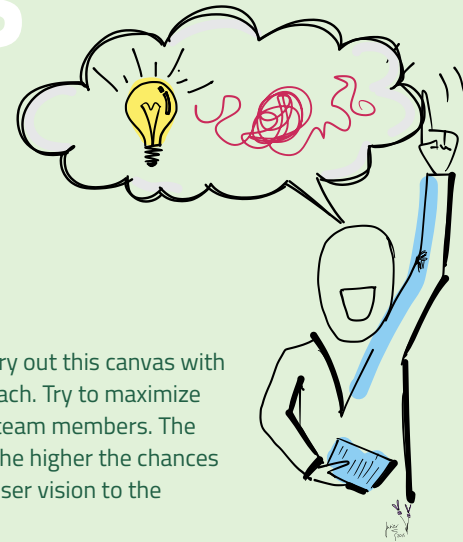
STEP 4. Debrief

Once you have completed the Credential Cards, spend time reflecting on the outcome and the process of filling it out. Use the following questions to spark reflection.

Did you get new and better insights into your stakeholders? Do you think you are in a better condition to predict their future stance about the project? Are you able to decide whether to invite them or not to the project process? Do you think there is still something important left? Would you include any other piece of information you consider essential at this stage of the project?

Did you experience any difficulties while filling out the canvas? Are any of the elements more difficult or easier than others? Was it easy to put yourself in a stakeholder's shoes? Did you have different points of view when it came to describing stakeholders' perspectives? If so, how did you sort it out?

Tips

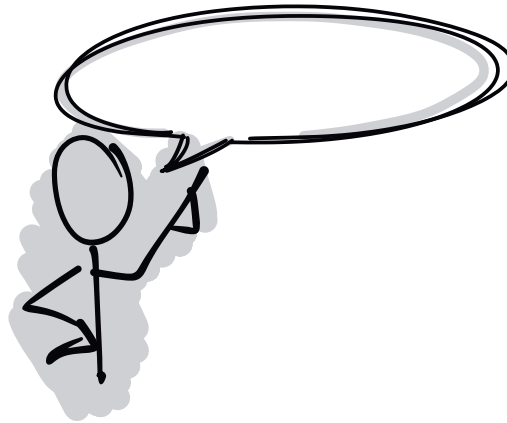
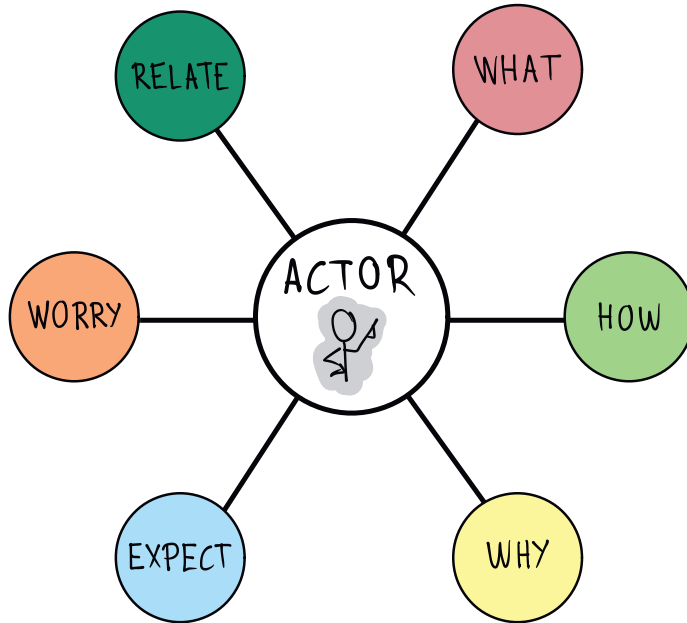


- It is essential to carry out this canvas with a collaborative approach. Try to maximize the diversity of your team members. The higher the diversity, the higher the chances to come up with a closer vision to the actor's perspective.
- The team has to decide how deep and broad it wants to go when answering the questions. It has to be a compromise between the amount of information gathered and the time available.

Find out more

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

ACTOR DESCRIPTION



INFLUENCE

CAPACITY TO INFLUENCE THE PROCESS

----- +

CAPACITY TO INFLUENCE OTHER STAKEHOLDERS

----- +

OTHER...

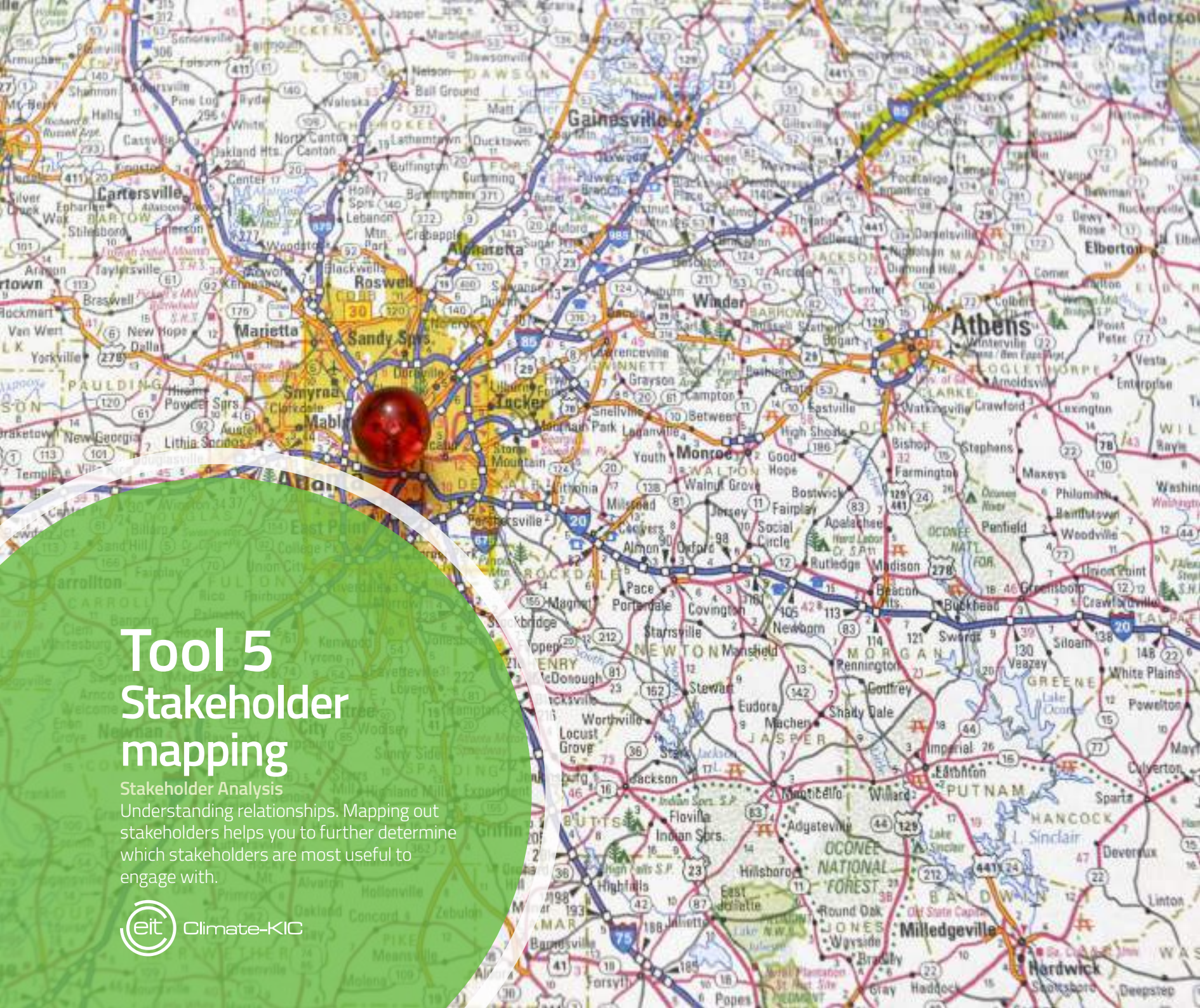
----- +

INTEREST

----- +

ADAPTABILITY

----- +



Tool 5 Stakeholder mapping

Stakeholder Analysis
Understanding relationships. Mapping out stakeholders helps you to further determine which stakeholders are most useful to engage with.



Stakeholder mapping

What it is

Mapping stakeholders is a visual exercise and analysis tool. Individual stakeholders are rated on two or three key attributes (eg: influence and expertise) and then mapped onto a graph, to see differences and to find affinity groups or conflictive relationships.

Depending on the stage of stakeholder engagement you are in, different combinations of attributes will be useful, yielding different answers. The most commonly used criteria are Influence, Necessity or Urgency, Relevance, Interest, Attitude, Adaptation or Resistance to Change and Expertise.

When to use

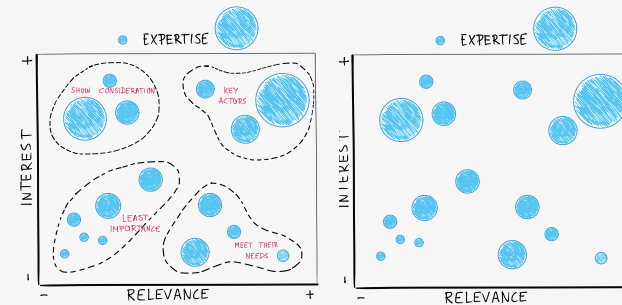
When you have already identified and characterised your

stakeholders (at least most of them) and need to prioritise whom you want engage with your project in a long-term relation as well as to decide the best level of engagement for each. Do you need to keep them informed or invite them to take part actively in the project decision board?

Why it is useful

With a simple graph you can see where stakeholders stand when evaluated against the same key criteria and compared to each other. At the same time, it helps you visualise the complex interplay of relationships which can derail your project.

By doing that you can make better decisions about the correct strategies to engage each participant.



HOW MANY From 1 person to groups of 10 people.

HOW LONG 40-180 min.

DIFFICULTY Medium-High.

WHAT YOU GET A visual map with the differences between actors in behaviour, role and attitude to the challenge, as well as the power relationships amongst them. As a result, you can come up with different engagement strategies to apply depending on the specific stakeholder. These strategies are the practical outcome derived from the maps.

WHAT YOU NEED A basic idea of the problem you face and an open mind to see how the context affects such a problem and conversely how the challenge affects the context.

WHAT IS NEXT After mapping out your stakeholder network you may want to go deeper and perform an in-depth network analysis. If that is the case then go for the Stakeholder Universe. If not, you can write out your engagement strategies and put them into practice by launching your participation process.

Steps

In the following sections, some of the most useful stakeholder maps are shown and explained. But before getting there, a definition of the criteria used to build the maps is necessary.

INFLUENCE

Ability of the actors to influence, modify or drive your initiative or other stakeholders. How much can they influence other stakeholders or even the process itself? Who do they influence? Investors, competitors, NGOs, consumers, manufacturers, researchers... What is the source of such an influence? Authority, Hierarchy, Resources, Relationships...? In some contexts this influence can come from their potential to impact on the current regime if adopting small changes.

NECESSITY OR URGENCY

Is this actor someone who could derail or delegitimise the process if they were not included in the engagement - regardless of their stance or interest in the project? What is the urgency she has for the process to be launched? Are

the processes and their requirements time-sensitive for the stakeholder?

RELEVANCE

Combination of Influence and Necessity results in the Relevance of the stakeholder. It can give you a first approximation of those stakeholders to engage with.

INTEREST

"How willing is the stakeholder to engage? Do stakeholders have a large or small interest in the project? Is their position one of indifference to your project? What is their level of engagement, involvement, closeness or even commitment? In this category the expectations of the stakeholders regarding the challenge are included.

ATTITUDE

"Regardless of their willingness to engage, their stance towards the transition process may be in favor, against or indifferent. Will they support the project or program? Will they be neutral? Are they expected to fight against it?

ADAPTATION OR RESISTANCE TO CHANGE

How adaptable or resistant is the stakeholder to the changes? What is the likelihood for them to change their position throughout the process? In case of lock-ins, what are the factors causing such path dependence? What is their willingness and capacity to learn from other stakeholders?

EXPERTISE

Does the stakeholder have information, counsel, or expertise on the issue that could be helpful to the process? What resources are they providing to the current system (whether it is the regime or the niche)? Money, knowledge, materials, products, services...?

With a simple graph you can see where stakeholders stand when evaluated against the same key criteria and compared to each other.





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

MAP 1. Relevance Map

MAPPING STAKEHOLDERS OUT

This is one of the simplest maps and can be used as a starting point for the map analysis. As explained above, the relevance is a criteria made up of the influence and necessity combination.

Therefore, draw a quadrant using two axis labelled "low:- -" to "high: ++" and add "Influence to the X-axis and Necessity/Urgency to the Y-axis. Now start discussing where each stakeholder falls in, by comparing both attributes and then plot them out on the quadrant.

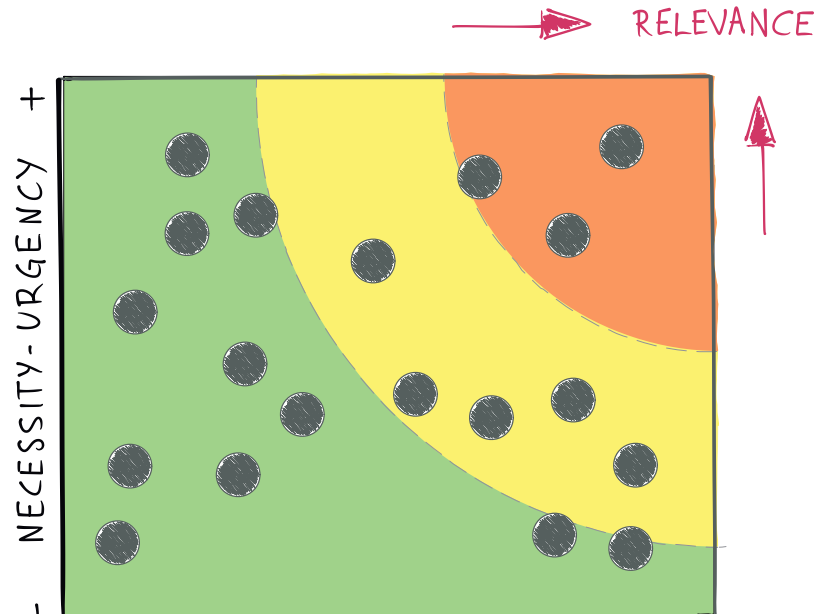
MAPPING STAKEHOLDERS OUT

Once you have plotted the stakeholders, you need to analyse the map. The most relevant actors will be those closest to the upper right-hand side of the map, holding both, a high influence and high necessity. Conversely the lower left-hand side shows the least relevant actors. Therefore, as you can see in the picture, three main areas can be identified, showing different de-

grees of relevance. Actors falling into the red area can be considered as key in terms of relevance and should be included in any further analysis or engagement process. Stakeholders in the yellow area should be taken into consideration and enrich the list of stakeholders to be included in more in-depth analysis.

Regarding stakeholders plotted on the green area, it doesn't mean you should not include them in further analysis or in your process, but rather you can put them lower down on your priority list. In any event, remember that throughout the project lifetime, the stakeholders' relevance may change, therefore always keep them in mind.

Three main areas can be identified, showing different degrees of relevance.



MAP 2. Relevance - Interest - Expertise

MAPPING STAKEHOLDERS OUT

This is a threefold criteria map and thus a bit more complicated than the Relevance Map. Indeed, you will need to first complete the relevance map, so that you can classify actors according to it. Draw the Relevance/Expertise/Interest Matrix in which the vertical axis accounts for the interest and the horizontal for the relevance.

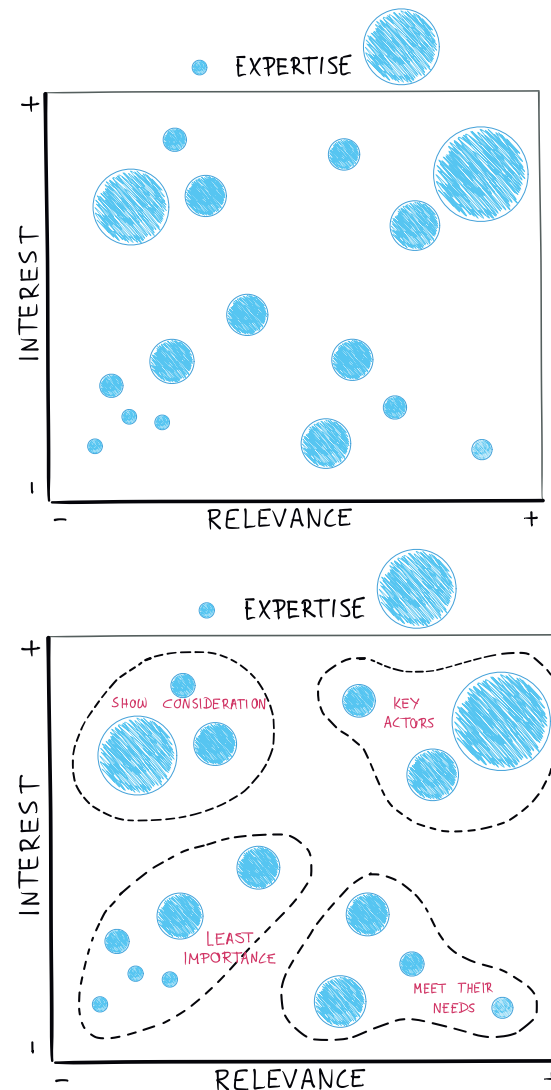
From the Relevance Map pick out actors with medium to high relevance (red and yellow areas) and use them to map the Expertise/Relevance matrix. Actors falling into the green area, shouldn't be ruled out of the process, but included in further analysis to make a decision about their engagement in time and the way they engage.

Now, place actors according to the combination of their attributes, as in the picture. The expertise is included in the

matrix in differing plot size. The more expertise an actor has, the bigger the size of its plot. Thereby you get to compare stakeholders one to another using the three criteria.

ANALYSING THE MAP

Similarly to the relevance map, different areas can be set apart giving you some insights in the strategy you can adopt with actors falling into them. With actors showing little or no interest for the project but that are highly relevant for it, you should meet their needs, but no further engagement is necessary since they are not interested. Conversely if an actor shows a high interest for the project, despite his low relevance, you should think about engaging them. This engagement becomes mandatory when they are also relevant. This combination of high interest and high relevance will show you the key actors you have to engage with for the project. The fourth area is located in the lower left-hand side of the map, where actors are located with little rele-



vance and interest. Of course you don't have to forget them, but they are not as important as the others.

Above this first analysis, you have to assess the influence of the expertise in it. Generally speaking, actors with high expertise should be engaged in the process as long as their relevance is medium to high or their interest is high, despite the relevance. In other cases, informing them or communicating with them is enough. If the information taps into their interest, they might ask to join the process.

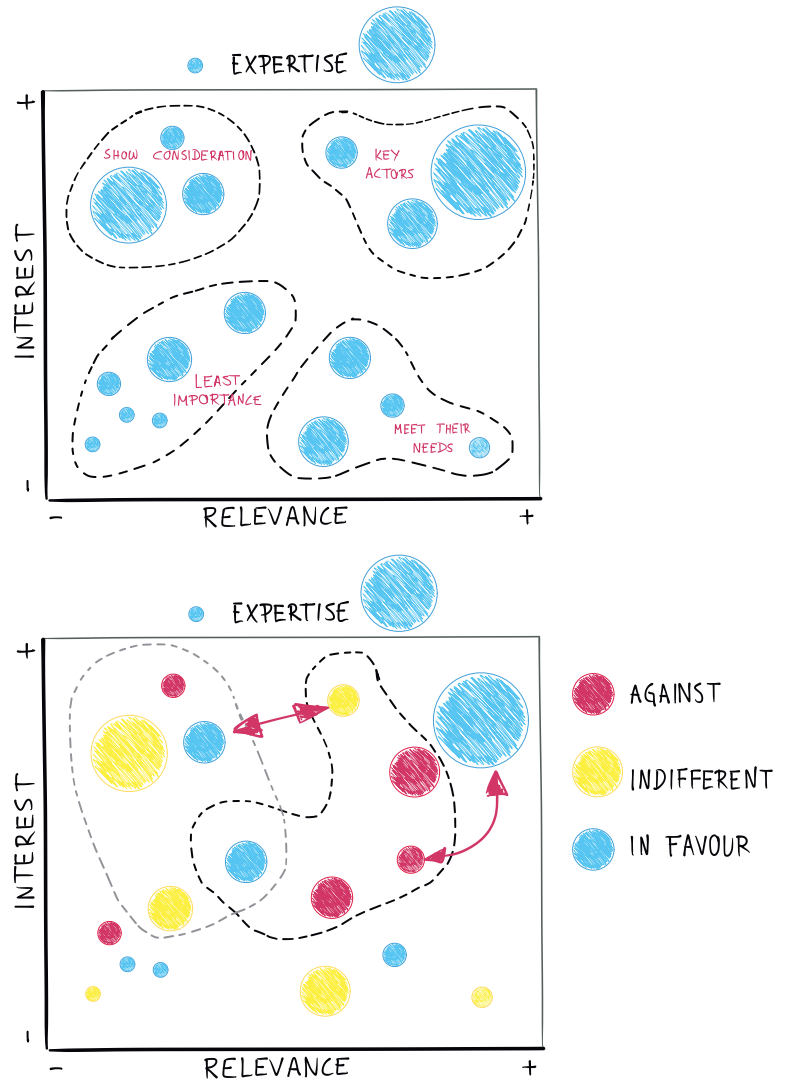
GOING DEEPER

Regardless of the different areas of influence, clusters of interest and conflicts can be depicted on the matrix. Gathering information from the stakeholders on the map you can identify those relations that are more evident or relevant and draw them on the map as well. By doing that, you can see if it is worth engaging an actor with no relevance or interest, but with expertise and

a conflict with some key actor. At the same time we could identify a stakeholder acting as a link between two clusters which would turn him into a key stakeholder for the process, regardless of his relevance, interest or even expertise.

Another approach is to differentiate actors considering their attitude to the project. This new layer of information can help to understand some of the conflicts, or the creation of clusters of interest. In any event it will enrich the map with valuable information for the phase of strategy design.

Generally speaking, actors with high expertise should be engaged in the process as long as their relevance is medium to high or their interest is high, despite having low relevance.





Green skills for boosting transition in water management Innovator Catalyst series. The Climate-KIC. Valencia, 2014 (Spain). <https://goo.gl/lq0o5>

MAP 3. Relevance - Adaptation

MAPPING STAKEHOLDERS OUT

The Influence/Adaptation Map helps you to foresee the likelihood of changing opinions and stances amongst different stakeholders and to estimate the potential impact that such a change could cause on the process. By doing that, managers will get an idea of potential conflicts in the future, due to changes in stakeholders.

Draw the matrix in which the vertical axis accounts for Adaptation (remember, the complete description of this attribute comprises not only how open to change the actor is, but the causes underlying potential lock-ins). The horizontal axis represents the level of Relevance according to the previous step and maps.

From the Relevance Matrix, pick out actors with medium to high relevance (red

and yellow areas) and use them to map out the current matrix.

ANALYSING THE MAP

Four different and relevant areas to make further decisions about the stakeholders' engagement, can be identified on the map.

Actors with high relevance and adaptation are critical. On the one hand they account for the most riskiest situations due to their relevance, but also for the most important sources of opportunities.

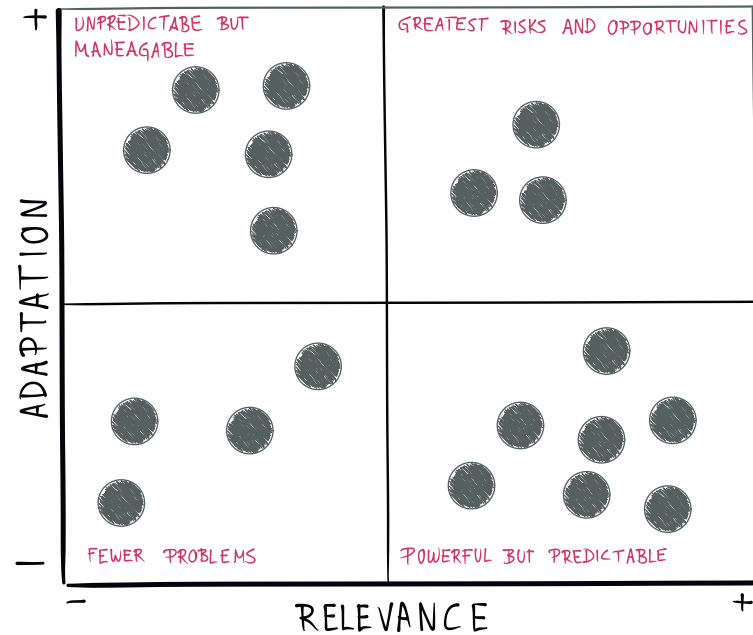
Actors highly relevant but barely adaptable, (high resistance to change), have a very predictable behaviour. Therefore, once the first assessment is done, we can be pretty sure that the selected strategy will be the same over the process.

Actors with high odds of changing are utterly unpredictable. However, in the case of little relevance they are pretty manageable. That means that the project team

must be flexible enough to naturally factor in these changes.

Finally, the fewest problems will come from stakeholders with low relevance and low probability of change. The strategy will be just to keep an eye on them to be sure they remain the same in terms of relevance and/or adaptability.

Actors with high relevance and adaptation are critical. On the one hand they account for the most riskiest situations due to their relevance, but also for the most important sources of opportunities.



MAP 4. Interest - Influence - Adaptation

MAPPING STAKEHOLDERS OUT

This last map is based on the Venn diagram of Mitchell, et al. (1997) and substitutes Interest and Adaptation for Urgency and Legitimacy, to better fit to the system innovation approach. Therefore, drawing the three ellipsis for each of them is accounting for Influence, Interest and Adaptation, respectively.

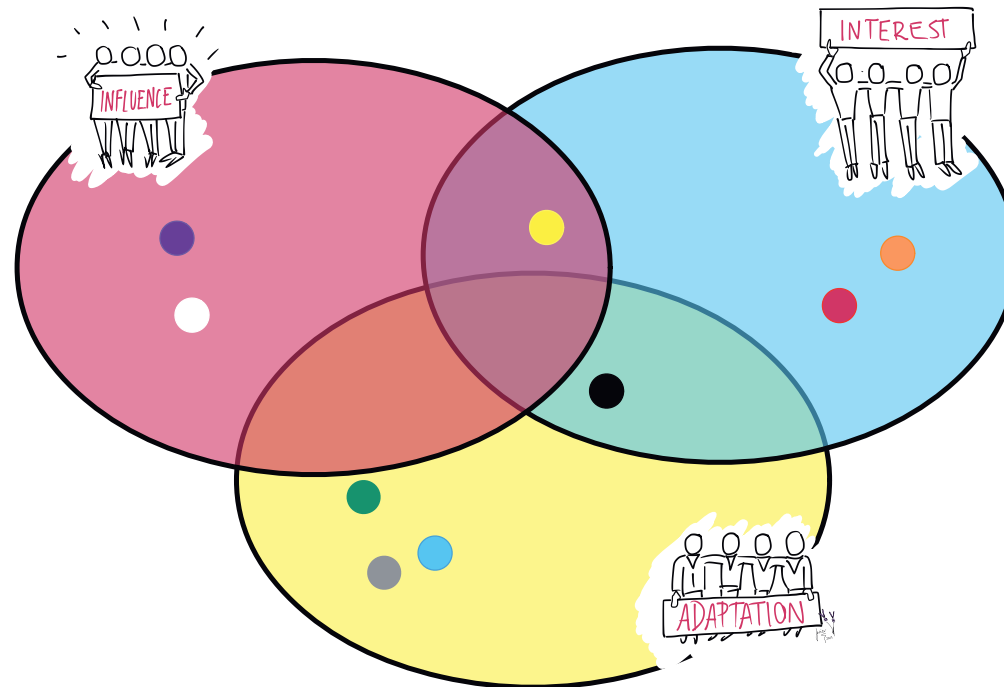
Let's say you start with Influence. Pick out stakeholders with a high or medium level of interest in the project. Now plot them on the red ellipsis with the following criteria: (1) If the stakeholder has a low interest and a low adaptation, then plot them in any region of the red ellipsis except those shared with the blue or yellow figures. Please notice that there is no difference between high or medium influence within this area. (2) If the stakeholder has a medium or high interest and a low adapta-

tion, then plot them on the shared area for the red and blue ellipsis (3) Conversely, if the stakeholder has a medium or high adaptation and a low interest, plot them in the shared area for red and yellow ellipsis. (4) Finally plot in the area shared by the three

ellipsis those actors with a medium or high degree for the three attributes.

Once you have finished this step you can move to the adaptation. In this case just check if there is a stakeholder with medium or high power

still not included in the map and plot if necessary. For that, apply the same reasoning as before. The last step is to check if there are still some actors with medium or high interest out of the map and include them, following the same process.



ANALYSING THE MAP

By overlapping the stakeholders who present medium or high degrees of each attribute, you will be able to identify the predominant roles for each one of them, which in return, will allow you to define and adopt an appropriate strategy. **(1)** First you can identify your agents of change in those with a medium or high degree of the three key criteria. You should definitely engage them from the very beginning.

(2) Stakeholders with influence and interest can act as innovation brokers, a kind of ambassadors for your innovation. Again, try to engage them right now. **(3)** Gatekeepers are those actors with high influence and high probabilities of changing their stances. They can move from being in favour to being against the project, therefore keep an eye on them. **(4)** The risky agents, those who might act as stoppers or pushers, are those who have medium/high interest and medium/high probabilities to change. In this

case, due to their interest, it is probable they will actively back your project, or the opposite. On account of that, and the possibility for their opinion to change, it is crucial to take care of them.

Finally, stakeholders with only one of the criteria falling in the mid or high part of the scale, **(5,6,7)** should be considered as latent. At this precise moment they are not as impor-

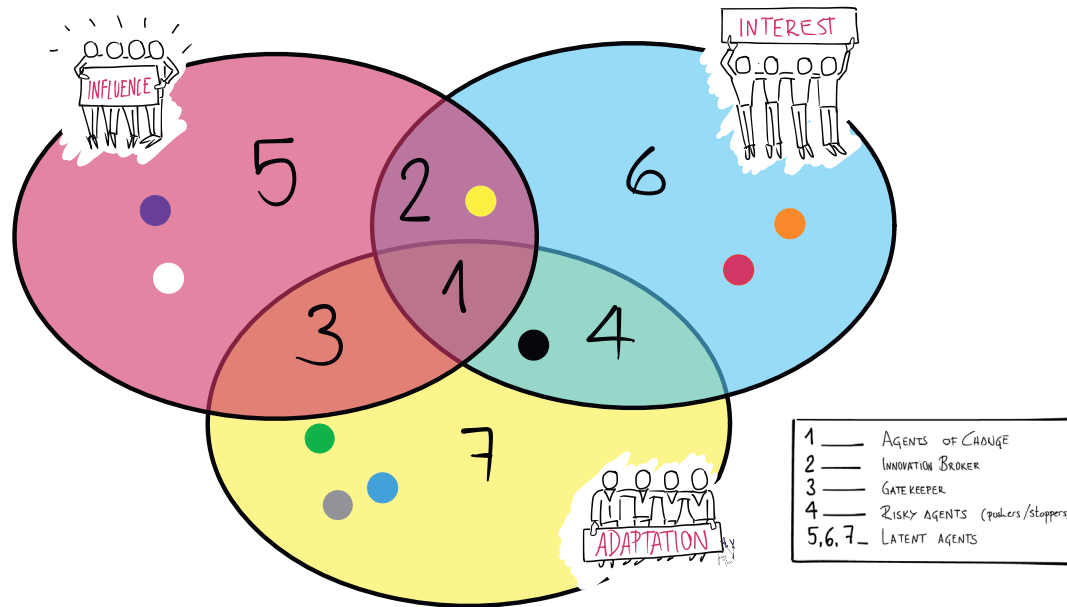
tant as the others, but their stance might change at any moment

AFTER MAPPING STEP. LAYING OUT STRATEGIES

The natural step after mapping out the stakeholders is to come up with an engagement strategy for each of them. Of course, this is the most difficult step, but also the most valuable and the underlying reason for map-

ping them out. Therefore, try to do it, even if you don't have the perfect strategy right now.

First of all, summarize the outcomes of your maps by including them in a table with the attribute assessment for each stakeholder (low-medium-high level of...). Then, write down the strategy you drew from each map according to the stakeholder's position on the map



(Key actor, meet their needs, keep them informed...).

Now it is time for filling in information about the stakeholders that you consider important but is not reflected on the maps. Think about any particular circumstance that might make their future involvement difficult. For instance, you might have found out that you do not know enough yet about specific actors that you have identified. This could, for example, result in efforts to learn more about these actors and use a cautious strategy with them. Write down this new data in the 'observations' cells

Once the main features have been discovered and summarised, discuss the best strategy or set of

strategies that should be applied to each stakeholder.

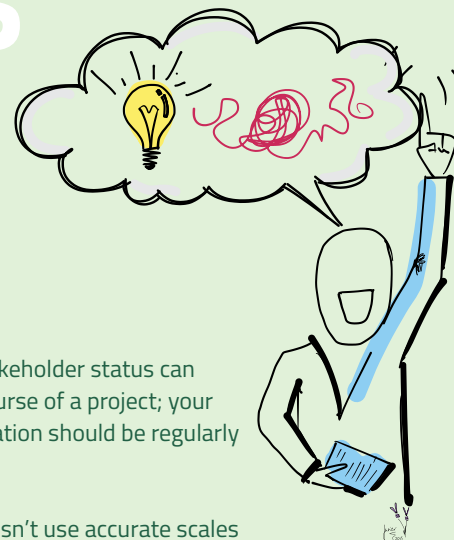
FINAL STEP. Debrief

After completing the tool, spend some time reflecting on the outcome and the process.

Do you feel you culminated with a good prioritization of your stakeholders? Were you able to set out different engagement strategies based on the maps? If you did more than one map, what did you find the most useful? And the most difficult? Did you find any contradictions between maps? If so, how did you solve them? Do you think the outcome is worth the time you spent mapping the actors out?

		ACTOR 1	ACTOR 2...	ACTOR n
RELEVANCE	Influence			
	Interest			
EXPERTISE	Contribution			
	Legitimacy			
	Attitude			
	Adaptation			
MAP ANALYSIS	MAP 1			
	MAP 2			
OBSERVATIONS	MAP 3			

Tips



- Remember that stakeholder status can change during the course of a project; your analysis and prioritisation should be regularly updated.
- Mapping actors doesn't use accurate scales for estimating the value of each criterion. Therefore, avoid being dragged into endless discussions about the exact position of each stakeholder on the map. The big picture you obtain and the relative positions between actors are more relevant than the exact location of each one.

Find out more

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



Tool 6 Stakeholder universe

Stakeholder Analysis

Understanding relationships. Stakeholder universe is a static depiction of the stakeholders and the dynamics of relations amongst them, as well as how they relate to the project/challenge.

Stakeholder universe

What it is

Stakeholder universe is a quick visual network analysis tool in which your challenge is in the very core of where the stakeholders revolve. The focus is on the connections among actors and how these connections work and might evolve; affecting the system innovation you are planning.

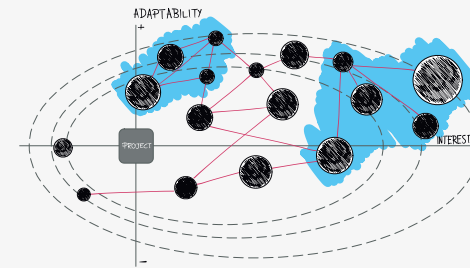
When to use

Whenever you have a collection of stakeholders somehow related to your project, you should carry out an analysis of such a network to understand how it works and how it can influence the process of the project. It should be done in the early stages of the project and after identifying and characterizing your main stakeholders. As any other dynamic system, actors networks evolve. Therefore, you should repeat the building

process every now and then and whenever you know the current situation has varied.

Why it is useful

From a systemic approach, the most important step when studying stakeholders is to map out the relations among them, and analyse the network they form. Stakeholders surrounding your project are not a collection of individuals with standalone behaviors, resources and capacities to influence the project. Rather, they are a functional system in which emergent behaviours not previously expected or foreseen from an individualistic perspective, can surface. Mapping out an actor network can reveal potential connections and collaborations as well as patterns of connection/disconnection, flows of knowledge and resources which, in return, can be seen as flows of power.



HOW MANY From 1 person to groups of 7 people.

HOW LONG 60-90 min.

DIFFICULTY Medium-High.

WHAT YOU GET A comprehensive and visual depiction of stakeholder network built according to their stance on the project and the relationships between actors. Thereby you get a formidable insight into the network performance now and over time, identifying patterns of connection and resources flows.

WHAT YOU NEED You should carry out a network analysis after having identified and characterised your stakeholder environment. You will need to gather information about how they relate to each other and how fluxes or resources, ideas or anything pertinent work.

WHAT IS NEXT After completing the Stakeholder universe you are ready to go for the stakeholder engagement phase by drawing up your participation plan. Nevertheless you might want to go deeper in your understanding of the network performance and potential evolution. If that is the case you can opt to do a metric analysis of the network, studying its connections, distribution and segmentation variables.

Steps

STEP 1. The canvas

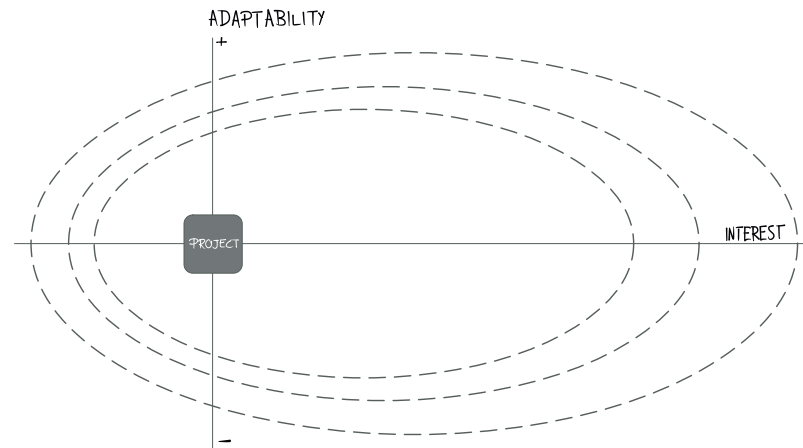
Start by sketching out the universe canvas. The canvas depicts a solar system with the challenge as the main star and actors as planets moving around the star. Draw your project (or challenge) as the core of the system but not necessarily at the centre of it. After drawing the project star, trace out a vertical and a horizontal axis, crossing each other through the star. The horizontal axis accounts for the interest or affinity for the project. The closer to the project a stakeholder is depicted the higher his affinity to the project is. The vertical axis represents the likelihood of an actor to change her mind regarding the challenge throughout the process. Actors above the horizontal axis will be inclined to move their own stances. Accordingly, actors placed underneath the X-axis are not expected to change their minds. Then you can add some orbits around the star and the canvas will be finished.

STEP 2. Mapping out actors

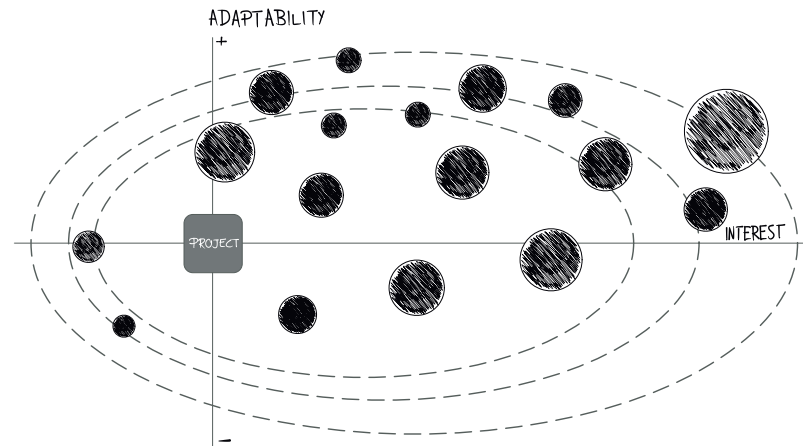
After sketching the canvas, map out actors according to their relevance and interest to the project as well as their adaptability over time. The size accounts for their relevance: the X distance for their affinity to the project and Y positive or negative sign for their adaptability to changes. Remember that relevance comprises more than one mere attribute and accounts for their capacity to influence either the process or other actors, their urgency or necessity and any other particular attribute linked to the challenge. According to these attributes, decide the size of the actor's planet.

While positioning the stakeholders, bear in mind to place closer those actors with stronger and closer relationships. Perhaps they usually work together, or one is a supplier or a distributor of the other, etc. Additionally, increase the distance between them as their actual collaboration or relationships decrease.

STEP 1.



STEP 2.



STEP 3. Connections

Once stakeholders are mapped out, it is time for depicting relationships between stakeholders. Draw lines linking those actors with any kind of connection. These relations are usually bidirectional, that is the stream of information, resources or anything relevant, flows in both directions, although it might occur in an asymmetric way. That is, the rate of information exchange is not the same in both directions. Actually in some cases the flow of resources or information can flow only in one specific direction.

The first time you map out the network you should depict any kind of relationship without differences, depending on the type of flow (what flows and how). For the following analysis you may want to be more specific and include more information in the network. For instance, you might want to sketch out the fluxes of resources (money or others). If that were the case, you would connect stakeholders with some exchange of such resources using arrows and different

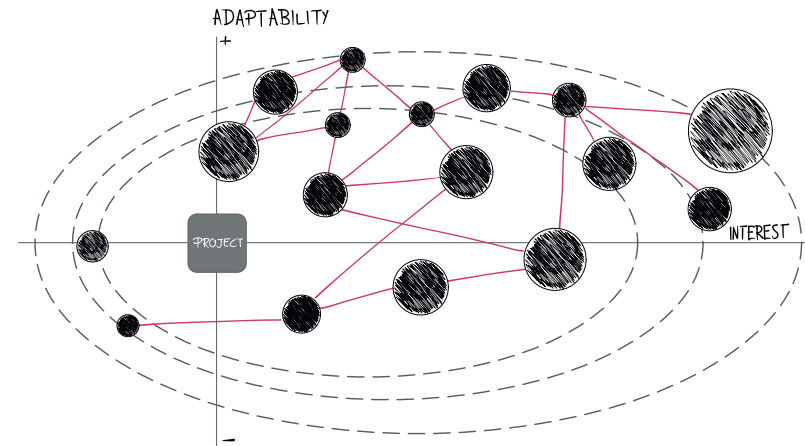
thicknesses to differentiate the type of exchange (big/small, unidirectional/ bidirectional...)

Some of the questions you might want to answer by means of the network are: Who shares ideas/resources with whom?; Who tries/is good at solving problems or the expertise; Who has the connections or the expertise; Who is looking for access to expertise?; Who has collaborative capacity?; What is the ease of knowledge flow?; What is the decision-making and task flow?; Who holds the Innovation potential?; etc.

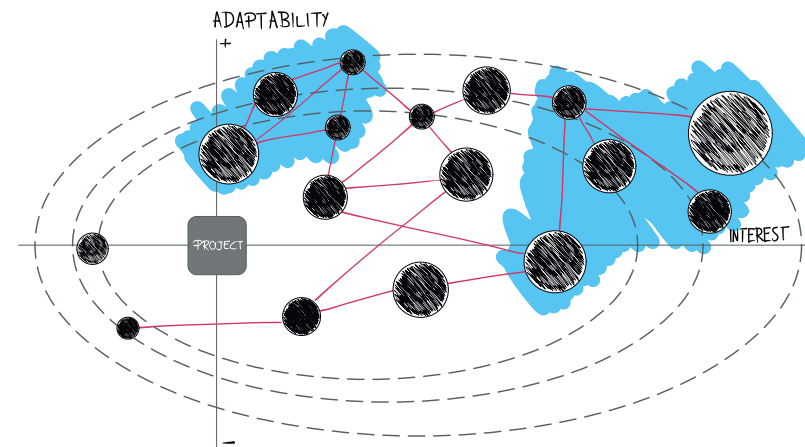
STEP 4. Clusters

Spot potential clusters of interest. Beyond the relationships themselves, identifying clusters of interest results in a crucial point to envisage future alliances and behaviours. This is one of the emergent behaviours you can expect from a network. Clusters of interest can turn out as a super-powerful actor of large relevance and subsequent capacity to affect the rest of the network and the progress of the innovation process.

STEP 3.



STEP 4.



STEP 5. Analysis of the network

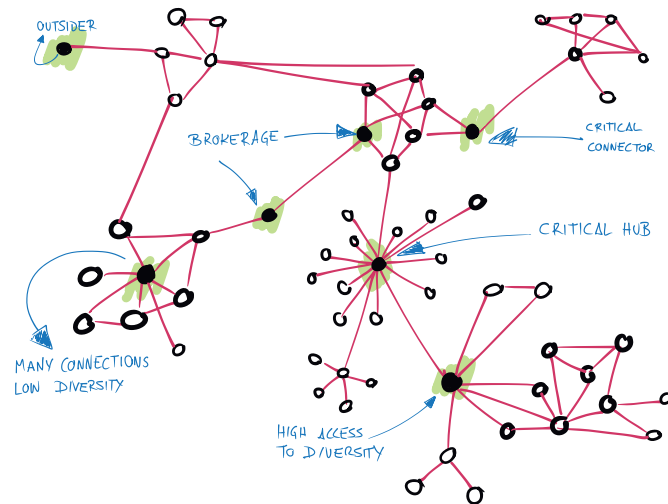
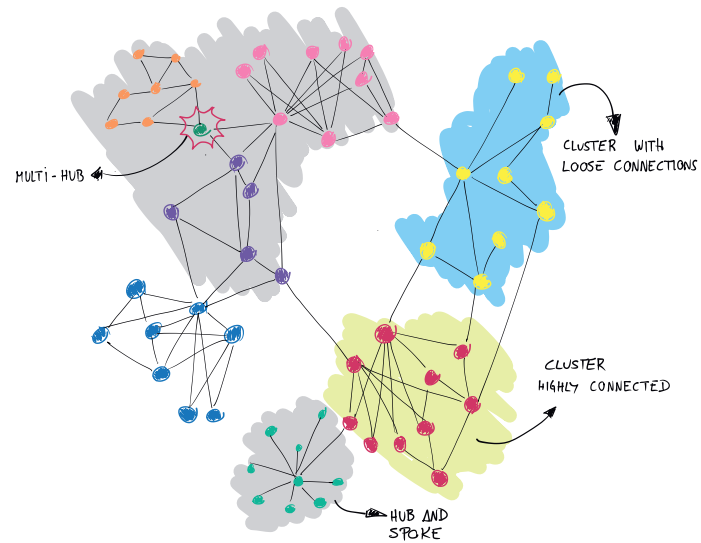
The goal of this tool is not the depiction of the network itself, but rather its interpretation and the conclusions that can be drawn. The shape of the network and the configuration of stakeholders provide lots of information about future roles, behaviours, etc.

First, look at the whole network and its components. Look for patterns such as clusters or hubs. Look at the density of interaction, the average degree of separation within groups and the cross-group connectivity. Highly connected networks usually tend to perform better than those with loose connections. The analysis of the structure is good for group comparison within the network and for tracking changes in a network over time. The structure reflects how the network performs, which reveals how the connections work and evolve.

Try to identify these patterns (or any other) in your network and

make them explicit in the network by drawing their limits. Use post-its to label them and describe their main features.

Now pay attention to the position of each stakeholder in the network so as to understand their role in how the network functions and how the resources flow. Actors linking different clusters, play a key role as brokers and have the capacity to boost collaborations. Similarly, actors linking the network with an isolated cluster or another part of the network by themselves are actually gatekeepers and might spoil any further collaboration. Going a little bit deeper, look at the picture and notice how important the diversity of connections is when it comes to accessing others' ideas or resources. That means, stakeholders with the most connections are not necessarily the most influential. Another important role is how those stakeholders connect the network with nearby actors, since they can draw new ideas and resources to the network. Now, look at the stakeholder labelled





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2015 (Germany).
<http://goo.gl/MTSuTW>



Stakeholder management workshop. Innovation Building Block series. The Climate-KIC. Frankfurt, 2015 (Germany). <http://goo.gl/MTSuTW>

as “critical hub”. This stakeholder is at the centre of a star acting as the only connection between the network and many lonely stakeholders. This is a typical shape you come across in many networks. If this actor fails, an important part and resource chain of the network might fall apart. Hence the importance of spotting these nodes as soon as possible and coming up with an appropriate strategy.

Again, use a post-it to name the actors and describe their role. If you have sketched out specific connections, for instance, the flow of knowledge, then be more specific when describing stakeholders’ roles. Example: The university of Carleton is the only provider of a new technology needed to turn biomass into diesel.

STEP 6. Debrief

When the network is finished, reflect on the new insights gained through the analysis of the network and the particularities of the process.

Did you find any clear patterns in the structure of the network? If so, what is the explanation in terms of relations between actors? How can they affect the performance of the network? Did you find any critical and unexpected stakeholders or critical links?

Did you try to map out a topic-oriented network in which links accounts for specific resources? Did you find differences between different networks? How difficult was it to build up and analyse the network?

The goal of this tool is not the depiction of the network itself, but rather its interpretation and the conclusions that can be drawn.

Tips



- Try building different resource-oriented networks for the same ecosystem of actors and see the differences in terms of structure and the role played by the stakeholders. Chances are that you find significant differences, and hidden key stakeholders can emerge.
- Bear in mind that the quantity of connections is usually less important than the quality of those connections. The diversity and the exclusivity of the links count much more.
- Stakeholders networks are living, breathing entities, therefore remember to build up your network once in a while. Then keep track of the changes and adapt your strategy accordingly.

Find out more

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

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Visual toolbox for system innovation

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

Edited by Climate-KIC Transitions Hub and Climate-KIC Professional Education

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