FutuResilience
Building sustainable futures together

Grant Agreement number: 101094455
Project acronym: FUTURESILIENCE
Project title: Creating future societal resilience through innovative, science-based co-creation labs
Type of action: Coordination and Support Action (CSA)

Deliverable 1.3 Toolbox for Policy Testing

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Due date	29 October 2025
Actual submission date	29 October 2025
Dissemination Level	Public

Abstract: The *FutuResilience Toolbox* brings together tried-and-tested methods, tools and guidelines, serving as a practical resource for living labs and organisations wishing to identify, assess, and implement research-based interventions for resilience-building processes. The core of the toolbox is a detailed description of a Foresight scenario co-creation process. In addition, the Toolbox contains a curated list of support tools for Foresight and co-creation, for policy design, assessment, and implementation as well as thematic tools to examine specific challenges in eleven thematic areas.

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101094455.

Document Revision History

Date	Version	Author/Editor/Contributor	Summary of main changes / Status
16-09-2025	0.1	Philine Warnke, Charlotte Freudenberg, Benjamin Lehn	First Draft
06-10-2025	0.2	Matias Barberis	Quality review and addition of introductory texts
19-10-2025	0.3	Philine Warnke	Final revision and addition of explanatory introduction
29-10-2025	1.0	Christine Neve and Matias Barberis	Final editing and submission

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Contents

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Executive summary

The *FutuResilience Toolbox* brings together tried-and-tested methods, tools and guidelines, serving as a practical resource for living labs and organisations wishing to identify, assess, and implement research-based interventions for resilience-building processes. The foundation of the toolbox lies in field experiments and learning workshops carried out in the framework of the FutuResilience project across different European regions and at various levels of government. This ensures that the methods are not only theoretically grounded but also practically tested and transferable.

The contents cover key approaches such as scenario planning, participatory policy design, and evaluation, supporting the structured and effective development of policy strategies to enhance preparedness facing diverse type of challenges and crises. The core content of the *FutuResilience Toolbox* is the explanation of the foresight process. At the beginning, a flow chart illustrates the overall process, while beneath it nine separate panels provide explanations and templates for the respective process steps. The toolbox also includes additional sections referring to further foresight and co-creation tools, policy tools accompanying the design of policy strategies as well as thematic tools supporting sectoral analysis on diverse type of challenges ranging from migration, urban planning, disasters to education, healthcare or good governance.

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1 The FutuResilience Toolbox

1.1 Project Background

The FutuResilience project aimed to strengthen European economic and social resilience through an enhanced ability to quickly respond to future crises. At the core of this approach, the project funded ten FutuResilience Labs, aligning local, regional, or national needs with available policy-relevant research and innovation (R&I) results. By putting emphasis on knowledge valorisation for policy uptake, the labs operated as co-creation experimentation spaces for policy testing, using a variety range of approaches and tools with focus on future-thinking and Foresight. This Toolbox presents the core Foresight approach developed in the FutuResilience project and tested by the Labs. Moreover, it provides an overview on additional Foresight/co-creation, thematic and policy tools that were identified in the initial FutuResilience mapping process.

1.2 Toolbox Structure

The core content of the *FutuResilience Toolbox* is the explanation of the FutuResilience Foresight process. At the beginning, a flow chart illustrates the overall process, while beneath it nine separate panels provide explanations and templates for the respective process steps. The toolbox also includes additional sections referring to further foresight and co-creation tools, policy tools accompanying the design of policy strategies as well as thematic tools supporting sectoral analysis on diverse type of challenges ranging from migration, urban planning, disasters to education, healthcare or good governance. Table 1 provides an overview of the number of tools in each type and thematic field.

Table 1 Overview FutuResilience Toolbox Additional Tools

Type of Tools	Number of Tools
Foresight/Co-creation	13
Policy Tools	11
Thematic Tools	
• **Digitalisation**	9
• **Disaster**	12
• **Education, Health and Wellbeing**	15
• **Energy and Materials**	7
• **Environment and Biodiversity**	11
• **Food and Agriculture**	10
• **Good Governance**	13
• **Industries, Local Business, Finance**	8
• **Migration**	5
• **Transport and Mobility**	6
• **Urban Planning**	14

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1.3 Toolbox Content

1.3.1 Foresight Process

Foresight is not about predicting or forecasting the future. It is the discipline of exploring different possible futures, including the challenges and opportunities that they may present, in a way that helps to shape a preferable future. To do so, it taps into collective intelligence in a structured and systemic way.[1] The FutuResilience Foresight Process has at its core a scenario approach which is one of the most established Foresight methods and enables communities to sketch different possible environments they may be facing in the future. Such context scenarios can be used for stress-testing policy actions thereby enabling more long-term, robust strategy development. The toolbox provides a detailed stepwise approach to a scenario process including initial system definition, stakeholder analysis and complementary steps such as wildcards and weak signal scanning.

1.3.2 Policy tools

The policy tools provide practical support for designing effective and evidence-based policy strategies and interventions. The proposed tools provide structured approaches to policy design, assessment, and implementation, fostering consistency, transparency, and adaptability in policymaking. They include guidance documents, templates, and frameworks that help policymakers, practitioners, and researchers to design evidence-based policy solutions through co-creation processes. It also includes a link to the FutuResilience Knowledge Base guidelines, explaining how to navigate the database and valorise the knowledge as part of participatory processes. These resources are designed to strengthen the link between knowledge generation and decision-making, enabling users to add value to existing research and innovation findings, while translate insights into coherent strategies and actionable measures.

1.3.3 Thematic tools

The thematic tools support the framing, exploration, and analysis of societal challenges, and resilience-building processes. Drawing on outputs from previous Horizon 2020 and Horizon Europe projects, as well as from International Organisations, these tools provide tested and validated methods for assessing vulnerabilities, capacities, and systemic interconnections across sectors and scales. These subset of tools enable users to examine specific challenges—such as migration, disasters, education, health, food, governance—through thematically tailored approaches. Users can gain deeper insights into the dynamics of complex systems, evaluate potential interventions, and co-design responses that strengthen resilience. The thematic tools help bridge research and practice, offering reliable instruments to inform both strategic planning and operational action.

1.3.4 References Further Reading

In the final chapter the toolbox provides all cited references but also tips for further reading on the Foresight approaches explained in the Toolbox.

[1] European Commission Strategic foresight

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2 Development of the FutuResilience Toolbox

2.1 Foresight Process

The initial Foresight process was developed jointly by the FutuResilience Foresight team consisting of Foresight practitioners from Fraunhofer ISI, Foresight Centre Estonia and the Copenhagen Institute for Futures Studies CIFS. The process was described in a guideline for the ten FutureResilience Labs (Deliverable 2.1 Guideline for Pilot Cases). In addition, the ten Labs were provided with the guideline and accompanying templates on an online collaboration board so they could adapt them to their own needs. As described in Deliverable 2.5 Consolidated report of pilot cases all ten labs followed a scenario process but with a wide range of variations and adaptations. The Labs' experience with using the guideline and implementing the scenario process was intensively reflected in an accompanying mutual learning process as described in D2.6 Report on mutual learning activities. In this final version of the toolbox the initial process ways adapted, considering the lessons learned from the Lab experimentation process.

2.2 Additional Tools

The additional tools for foresight/co-creation, policy and thematic resilience challenges were identified within task 1.1 through a dedicated mapping of policy relevant findings from research and innovation activities within the Cordis and OVERTON databases. The process is described in detail within Deliverable 1.1 Report on mapping policy relevant R&I findings. While the knowledge base contains the whole range of policy relevant research findings (including policy instruments), for the Toolbox we extracted those instruments that provide concrete tools and guidelines ready for use for practitioners in the field.

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FutuResilience

Toolbox

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Toolbox

Funded by the European Union

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Content

About the Toolbox and the Project

The *FutuResilience Toolbox* brings together tried-and-tested methods, tools and guidelines, serving as a practical resource for living labs and organisations wishing to identify, assess, and implement research-based interventions for resilience-building processes. The foundation of the toolbox lies in field experiments and learning workshops carried out in the framework of the FutuResilience project across different European regions and at various levels of government. This ensures that the methods are not only theoretically grounded but also practically tested and transferable.

The contents cover key approaches such as scenario planning, participatory policy design, and evaluation, supporting the structured and effective development of policy strategies to enhance preparedness facing diverse type of challenges and crises. The core content of the *FutuResilience Toolbox* is the explanation of the foresight process. At the beginning, a flow chart illustrates the overall process, while beneath it nine separate panels provide explanations and templates for the respective process steps. The toolbox also includes additional sections referring to further foresight and co-creation tools, policy tools accompanying the design of policy strategies as well as thematic tools supporting sectoral analysis on diverse type of challenges ranging from migration, urban planning, disasters to education, healthcare or good governance.

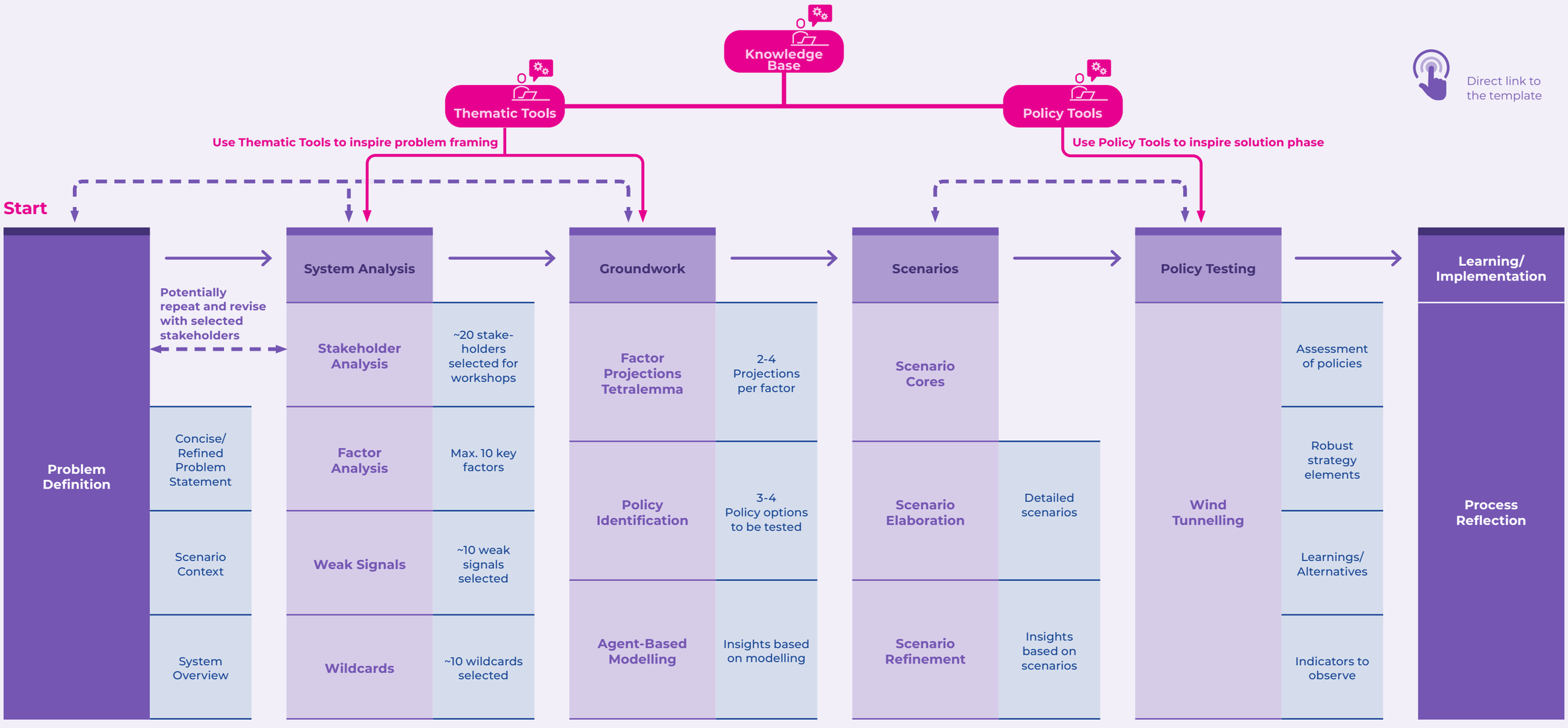
The FutuResilience project aims to strengthen European economic and social resilience through an enhanced ability to quickly respond to future crises. At the core of this approach, the project funded ten **FutuResilience Labs**, aligning local, regional, or national needs with available policy-relevant research and innovation (R&I) results. By putting emphasis on knowledge valorisation for policy uptake, the labs operated as co-creation experimentation spaces for policy testing, using a variety range of approaches and tools with focus on future-thinking. As result, the FutuResilience labs ecosystem developed policy-relevant outcomes that increased the confidence of decision-makers and citizens in their capacity to respond to emerging challenges.

FutuResilience

The Foresight Process: Step by Step

Notes on Process

- Use the links to get to the guidelines and respective templates for each step.
- This is an iterative process, meaning you can and should jump back and forth to continuously improve as you learn more.
- A proper, workable problem definition is paramount to an effective process (especially with scenarios). Start there and come back to it for revisions as you progress!
- The problem framing and system analysis should continuously be updated according to new insights. At the same time, each exercise may provide inspiration or context for another one – do not be afraid to keep refining your outcomes!
- Inspiration for policy options can be derived from all steps of the process – e.g., through working with wildcards or by analysing certain scenarios!



Guideline for Template

Problem Framing

- **Step 1: Self-Definition**
  - Who are you as a team? The same problem will be perceived differently depending on who is looking at it.

- **Step 2: Problem Statement**
  - Try to describe in one short sentence or paragraph; Be concise and leave specifics for later fields.

- **Step 3: Environmental/Climate Challenges**
  - How does the problem interact with challenges related to the environment, general ecology, or climate crisis?

- **Step 4: Technical Challenges**
  - What are the technical challenges you are engaging with; Where are technological bottlenecks (including processes) to be overcome?

- **Step 5: Social Challenges**
  - How does society and its behaviour impact the problem? Can or should certain groups play a specific role?

- **Step 6: The Gaps**
  - Identify the areas where your issue is lacking resources the most. Where are gaps in the current approach?

- **Step 7: Debrief and Indicators**
  - Go back to the initial problem statement and consider how the various angles have changed your understanding of it. Does the description contain more than necessary, might it have to include more information? What role to the different facets play?

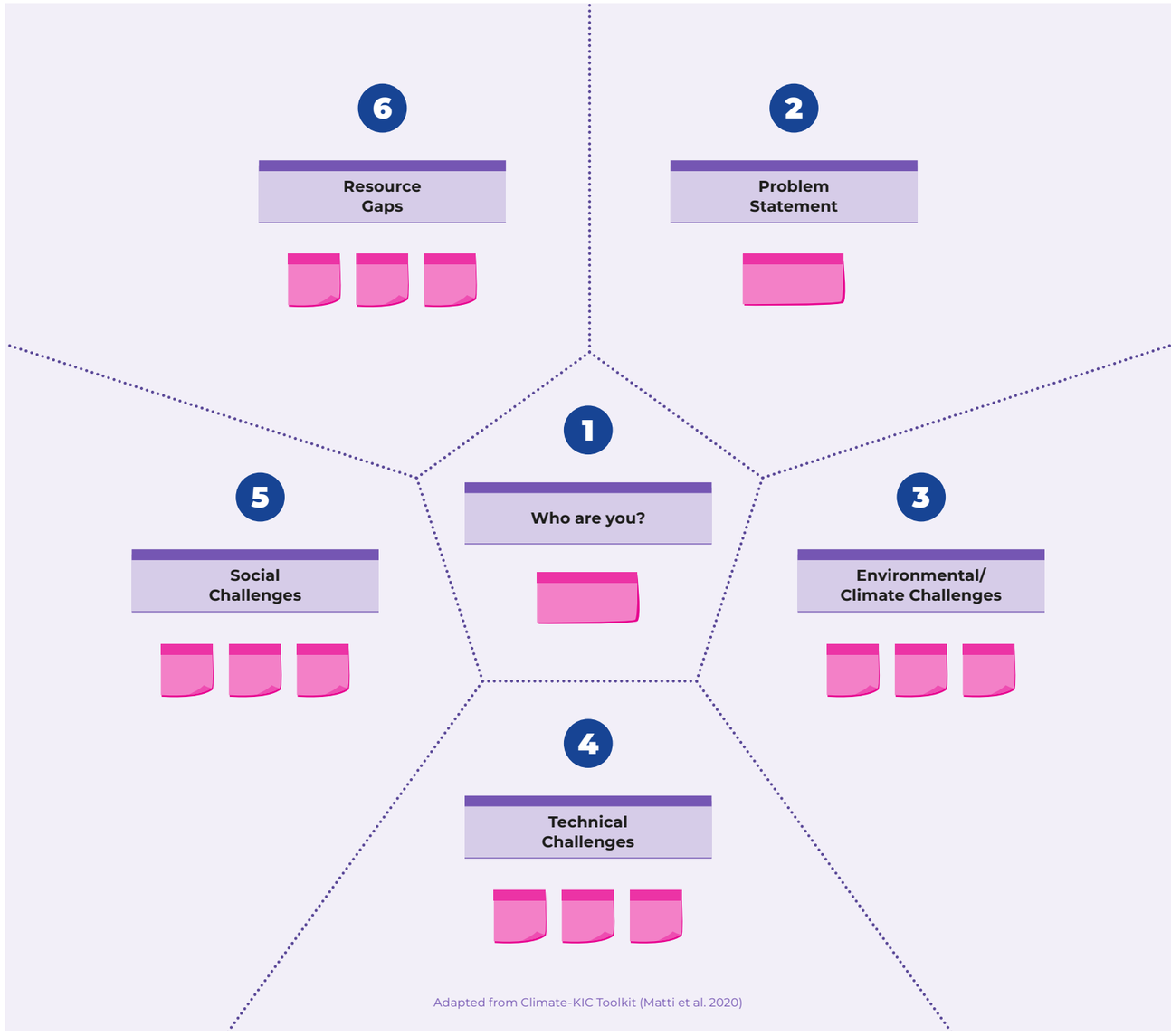
Then, if feasible for your context, come up with ~5 Key Indicators to grasp the issue in numbers and have a measurable reference.

Try to come up with a consensus for a new definition!

If possible, repeat the process with a few diverse stakeholders and on the basis of outcomes, revise the problem formulation.

Tool Template

Problem Framing



Adapted from Climate-KIC Toolkit (Matti et al. 2020)

Guideline for Template

Stakeholder Analysis

Who do we mean by stakeholders?

Stakeholders are individuals or groups with a stake in the problem, meaning they are in some way affected by or have an influence on the way it evolves. Often stakeholders will be both influencing and affected by the problem.

Why work with stakeholders?

- The better stakeholders know each other and their perspectives, the better they are able to deal with a crisis effectively.
- With access to competencies and resources distributed better, the system can become more resilient as a whole.
- Enriching the knowledge and perspectives around the table increases chances of high quality outcomes and a successful process.
- 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, as well as the solutions proposed.
- Outcomes are more accepted and tend to be more sustainable.
- Due to the “multiplier” effect of the network, outcomes can more easily trigger system changes.

How to work with stakeholders?

➲ **Step 1: Stakeholder Identification**

Brainstorm around the two key questions:

- Who can influence our problem and its solution?
- Who is affected if our problem is (not) resolved?

To enrich your collection, it is useful to conduct additional analysis such as screening media, consultations for groups who raise their voice, screening scientific publications and to extract the groups mentioned.

➲ **Step 2: Stakeholder Categorisation**

- List the stakeholders and note down what type they are and which aspect they relate to.
- In case there is a type that is not represented by the stakeholders identified by you, double check whether there may be stakeholders in this category (e.g. NGO).
- Locate the stakeholders in the Venn Diagram.
- If possible: Get in touch with representatives of stakeholder groups from the inner circle, ask them whom they perceive as stakeholders and revise the Venn diagram, taking their feedback into account.

➲ **Step 3: Stakeholder Management**

- Generate a stakeholder database for the groups located in the inner circle of the Venn diagram.
- Identify concrete persons who could represent these groups and list them in your database (Make sure to respect the data protection regulation (GDPR).
  - Collect several persons and keep an eye on diversity regarding age, gender, discipline and other criteria relevant for your case (e.g. regional location, cultural background) this will help you later to compile a group of participants that brings the diversity of perspectives required to the table.
- For the context setters with high influence but currently not much affected you may want to establish some sort of observation as they may see themselves as affected at some point and change the whole landscape with their powerful intervention.

Tool Template

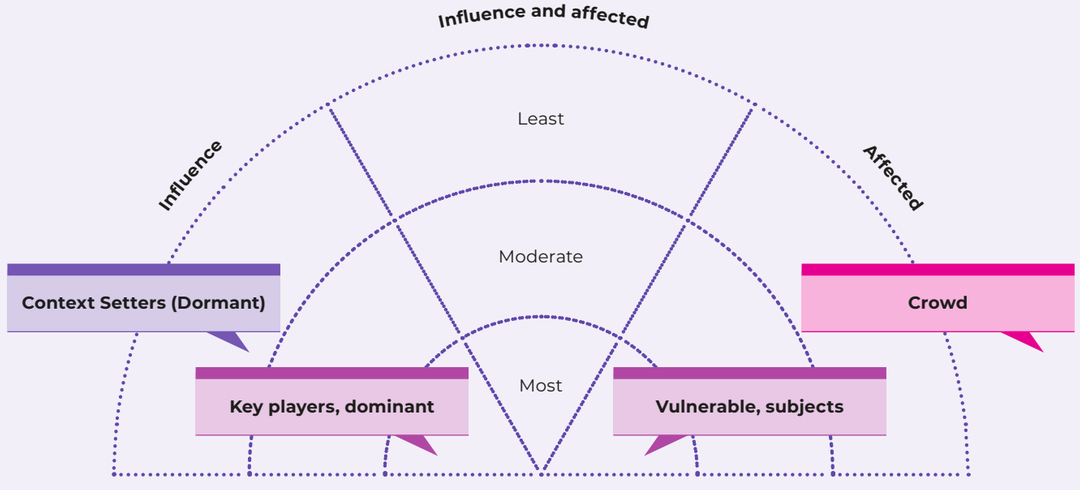
Stakeholder Analysis

1 **Stakeholder Identification**

2 **Stakeholder Categorisation**

Stakeholder Group	Type **P** – Policy **S** – Civil/Society **R** – Research **I** – Industry **O** – Other/Mixed/More than Human	Aspect of the system the stakeholder group has a "stake" in

3 **Stakeholder Management**



Guideline for Template

Wildcards

What are wildcards?

- Wildcards are sudden future developments or events that seem relatively unlikely to happen, but have a drastic impact when they do happen (see BIPE et al. 1992, p. v). Think of September 11 or Chernobyl as examples that were surprising yet hugely disruptive.
- Wildcards materialise so quickly that the underlying social systems cannot respond quickly enough – therefore being surprising and presenting a complete break in how people think and plan (see Hiltunen, 2006).
- Because wildcards do not fit into our usual frame of reference, they challenge our mental map of the world (Steinmüller, 2003). This forces us to question the way we are doing things from different perspectives – which in turn can help to become more resilient towards unexpected changes.

How are wildcards identified and selected?

Ways to search for wildcards:

- Previous exercises, such as the STEEP Analysis or weak signal scanning can serve as a baseline from which wildcards can be created (see template).
- Tetralemma: Start with a certain development that positively impacts the topic under question. What would the opposite to this development look like? Then, think about an event that would affect it both positively as well as negatively. In the final step, an event is searched for that does not fit into either category – one that makes the question obsolete or changes it completely – resulting in a wildcard.

- **Good wildcards are:**
  Appropriate to the problem (Not stem from topical area, but associated with it)
- Original (not considered in other forms), consequences not immediately apparent
- At the far edge of what is possible

Tool Template

Wildcards

15 minutes warm up

1

Historical Analysis

- Which events or developments acted as wild cards in comparable situations?

30 minutes each to draft wildcards

2a

Outside of frame of references

- Take a look at your STEEP analysis.
- Review the megatrends and factors you have discarded.
- What lies completely outside of that frame of reference?

2b

Weak signal/Trend as precursor

- Take an identified weak signal/(mega) trend to the extreme – could this result in a sudden wild card or “creeping catastrophe”?
- What would it take for this signal/trend to become highly impactful/cause major disruption?

2c

Tetralemma

- The Tetralemma exercise can be a great source for wild cards.
- See the template for instructions on how to conduct it and use [E: Shifted Paradigm] as a source for wild cards.

Guideline for Template

Factor Projections – Tetralemma Exercise

What is the Tetralemma Exercise?

- The approach stems from professional coaching, in the context of scenario development it is used to help groups think through different possibilities for the evolution of highly uncertain factors in their system.
- The groups fill in one Tetralemma Template per factor during a joint brainstorm session. It is important to remember that there are no wrong assumptions here. Participants are free to develop as many options as they want under C.
- Most groups tend to converge at a maximum of five alternatives.

How to fill in the Template:

Outline possible alternative developments for the selected factors.

➲ **A**
What is the current Projected/Expected Future for this Factor?

➲ **B**
What is a Distinct Divergent development possibility?

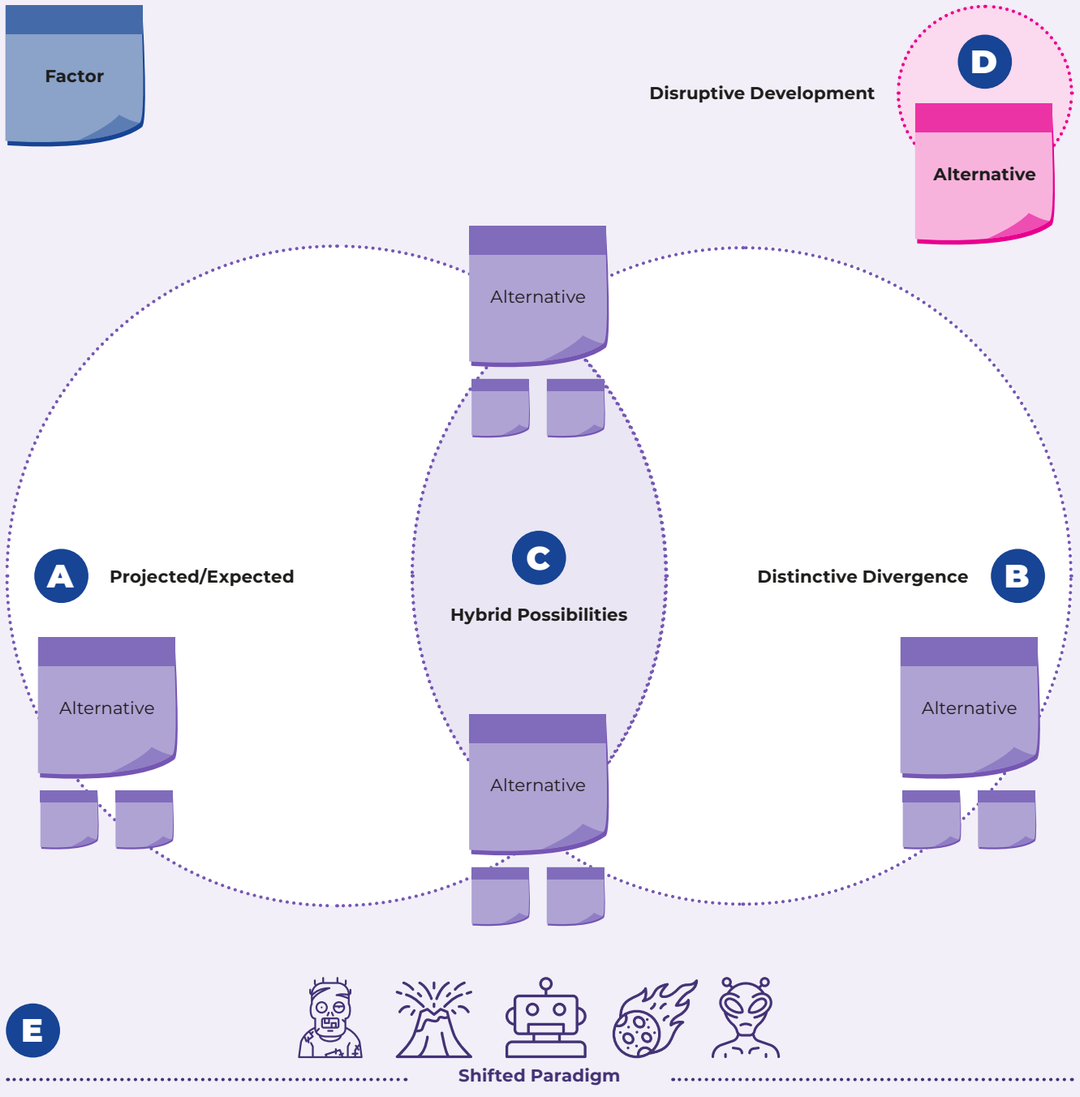
➲ **C**
What are some Hybrid Possibilities if we both elements of A and elements of B are present?

➲ **D**
What are possible disruptive developments?

➲ **E**
What can we think of that radically shifts our thinking about this factor?

Tool Template

Factor Projections – Tetralemma Exercise



Guideline for Template

Scenario Refinement and Strategic Conversation

Why refine the scenarios?

- The refinement phase helps participants to make sense of the worlds they have created, fill in missing links and detect and amend inconsistencies.
- Moreover, scenarios should provide images of the future that inspire forward looking conversations, which help people to challenge their mental models and enrich their capacity to imagine change.
- It is, therefore, important that they are more than just bundles of factors but provide interesting, thought provoking and inspiring glimpses into future worlds.

How to refine the scenarios?

- There are many ways to refine scenarios – find the ones that best serve your purpose and the needs of your target audiences.
- You can use the full range of communication formats words, images, graphs, movies etc.
- A lot can be done in post-processing, e.g., with the help of communication professionals. It is important, however, to generate the initial material together with the participants who have developed the scenario cores.
- The template provides a few inspirations to get started.

Tips and Tricks:

- Depending on the group size, a rotating seat setup may give you a great opportunity to cover each scenario with different perspectives.
- For example, you can have one group per scenario to be refined, or have each group work on each scenario for a little bit. The resulting group discussions, again, are an important part of the value that you get out of the exercise.

What are Strategic Conversations?

- In strategic conversations we use the scenarios to enhance our capacity to deal with uncertainty and change, thereby ultimately increasing our resilience.
- Of course these discussions also serve to further refine the scenarios.

- In strategic conversations we think through together what the scenarios would imply for certain actors, problems and questions that we are facing today.
- There are many ways to make the most of the scenarios for your group and topic – the template provides a few inspirations to get started.
- Working through and with the scenarios may prove an inspiring source for new policy options – keep in mind that both exercises can be beneficial for each other!

Tool Template

Scenario Refinement and Strategic Conversation

1 Scenario Refinement

Metaphor/Symbol
Find a metaphor or symbol for your scenario, something that immediately transmits the spirit of the scenario.

A day in the life
Imagine a day in your organisation/company/research group/policy unit what would be different from today?

Headline from the future
Sketch a news item of the future containing e.g. 1 graph, 1 headline, 1 tweet, 1 image

Persona Method (Advanced)
Imagine a person from our key stakeholder groups in each of the scenarios (e.g. farmer, refugee, entrepreneur, mayor, child, elderly person, ...). Describe the situation of this person in the scenario. What is their life like, what are their concerns and fears, hopes and dreams?

What is a typical ...?
artefact, communication device, artwork, toy, tool, shelter, food, etc. in each scenario?

2 Strategic Conversation

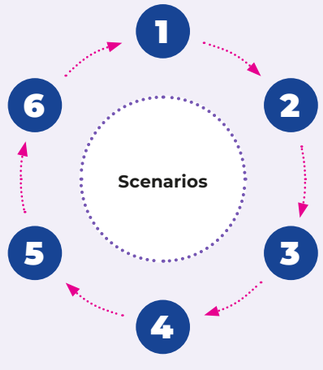
What are threats and opportunities?
(separate these two perspectives)
- In general
- For our key actor groups

Who are winners and who are losers in this scenario?

Niche
What is the most successful approach that your organisation can focus on in this scenario?

Backcasting/Roadmapping (Advanced)
How could you achieve your goals in this scenario starting from now?

Signposts
What are indicators that would imply that this scenario is becoming reality?



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Guideline for Template

Key Factor Selection

What are key factors?

Key factors influence how the problem you focus on develops. This could be, e.g., barriers that hinder you to achieve certain goals, but also framework conditions that influence the nature of the problem.

Key factors often stem from different areas – it is common to look at **S**ociety, **T**echnology, **E**nvironment, **E**conomy, **P**olicy **(STEEP)**. Sometimes this is refined by adding **V** – **V**alues and **L** – **L**egal.

Example: If the challenge is to deal with increasing droughts, key factors could be “climate change (E)”, “price of water for industry (E)”, “water directive (L)”, or “citizens awareness (S)”.

One way of assessing factors is according to their relative impact to your problem as well as the uncertainty that they involve.

Note: In this phase the focus lies on the “major” forces shaping the system, smaller and more uncertain aspects will be addressed in the next steps.

How are the key factors selected?

Different stakeholders will have different views and insights on the factors. It is thus highly recommended to select the key factors through a collective process with the stakeholders from the stakeholder analysis (direct link), by going through the following steps:

- **Step 1: Individual Brainstorm**
- **Step 2: Clustering**
- **Step 3: Review of findings (see Template)**
- **Step 4: Factor Assessment**
  - Assess the factors with respect to uncertainty and impact using the template.
    - Make sure that everybody makes their own assessment without being influenced by the others, note down the average across all votes.
  - Factors with high impact and high uncertainty are the key factors for the scenario development (also called key uncertainties)
    - Select around eight factors (no more than 10!).
    - Encourage participants to include factors from different domains.
  - Factors with high impact and low uncertainty should be included in all scenarios (givens).
- **Step 5: Documentation and Feedback Loop**
  - Document the selected key factors and givens, including factor names and more detailed descriptions, send out to participants and ask feedback. If needed, get additional voices.

Tips and Tricks: Formulate the description of the uncertainties neutrally, not as if the direction is already given. Example: NOT Rising inequality BUT degree of inequality; NOT Lack of funding BUT availability of funding

Before voting make sure everybody has a shared understanding of the factors. Formulate as specifically as possible in the background notes and select titles that are easy to grasp. Alternatively to the voting you can directly use a graph – use whatever format works best for you and your group.

Working on the key factors may have given you new insights on the problem statement – don't forget to jump back and forth to iterate on your framing of the situation.

Tool Template

Key Factor Selection

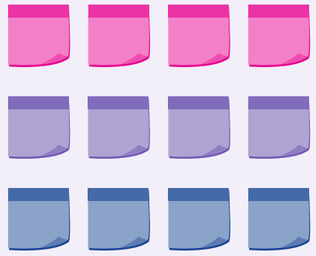
1 Individual Brainstorm

What influences the way our problem will develop? Try to consider all STEEPVL domains.

S – Society
T – Technology
En – Environment
Ec – Economy
P – Policy
V – Values
L – Legal

2 Clustering

Group similar suggestions.



3 Review of findings

Check: Empty domains?
If so, recruit more voices to fill them.

Check: Relevance of megatrends?
Ask stakeholders to assess from Megatrends Hub.

Check: Max. 20 Factors?
Prioritise with participants.

4 Factor Assessment

STEEPVL domains	Factor	Impact (on the problem)	Uncertainty	Assessment
		1 – low **2** – medium **3** – high **4** – very high	**1** – low **2** – medium **3** – high **4** – very high	**K** – Key Uncertainty **G** – Given **N** – Not selected (for the time being)

5 Documentation and Feedback

Including factor names and more detailed descriptions, send out to participants and ask for feedback.
If needed get additional voices.

Guideline for Template

Weak Signals

What are weak signals?

- Weak signals are small or seemingly insignificant observations in the present that can indicate an upcoming change in the future.
- Actively searching for weak signals, monitoring and interpreting them is an important part of what is called “horizon scanning”.
- This can help in anticipating future events and thus becoming more resilient towards them when they do happen.

How are weak signals identified and selected?

There is no standard proceeding for weak signal scanning. At the core, however, is the screening of insightful sources with a high diversity of perspectives beyond what is currently recognised. These sources can be:

- People (e.g. pioneers, activists, artists, extreme users, critical thinkers, community antennas such as social workers, …)
- Media outlets such as blogs, books, magazines, newspapers
- Artworks i.e. literature, exhibitions, movies, theatre plays

“Perhaps the hardest problem for scanners is to be aware of our own assumptions, which act like blinders. Scanning forces you to challenge and break out of every professional, cultural, experiential and generational framework that you have learned over your lifetime. You have to be open to surprise. When something does not fit your existing mental models, take a second look at it. If you hear someone saying “we will be really challenged if that happens,” then that might be a weak signal.” (Policy Horizons Canada)

➲ **Step 1: Form a team of scanners**

➲ **Step 2: Reflect on possible biases and assumptions in your group's perception of the problem** (see Bias Box for inspiration).

- Review the things you have discarded in the key factor selection, are there any aspects that may become relevant under certain conditions?

➲ **Step 3: Compose a set of sources that could widen some of the biases**

- Fringe Sources: From the fringes of what you are currently observing (example youth blog, homeless magazine, art exhibition, science fiction novel).
- Antennas: Voices that note changes early e.g. because they have extreme needs in this area (e.g. vulnerable groups, DIY activists, extreme sports) or because they talk to many people with particular needs (e.g. teacher, social worker, priest, nurse).

➲ **Step 4: Scanning – during a certain period of time team member collect:**

- What the selected sources say about the topic
- Their own observations as openly as possible using all sorts of sources including hobbies, family, sports, garden etc. – Anything you notice that could indicate a change.
- Capture the findings in some easily accessible way.

➲ **Step 5: Sense making**

- Review the results together in the team. What are aspects you want to include in the scenario exercise? Choose around 10 things to be included.

Tool Template

Weak Signals

Bias box Biases emerge from the way we process information, from our beliefs, from the way we work together in teams and from the structure of our organisations. Typical important biases you may want to think about:	
Availability Bias	Unfamiliar information is more easily discarded as irrelevant.
Confirmation Bias	Information that confirms previous assumptions is assessed as more relevant.
Groupthink	Group members try to minimize conflict and reach consensus decisions by avoiding controversial issues, actively suppressing dissenting viewpoints, and isolating themselves from outside influences.
Silo Mentality	We exclude something from our consideration because other units are responsible for it.
Belief Bias	A person is more likely to accept an argument that supports a conclusion that aligns with her/his values, beliefs and prior knowledge, while rejecting counter arguments to the conclusion.
Taboo Topics	something that is not acceptable to say, mention, or do. It is possible that the existence of taboos prevents important topics to be put on the agenda and be addressed adequately.
End of History Illusion	We tend to think that the changes in ourselves and our environment we have witnessed in the past are now coming to an end and we have reached a stable situation.

Our Set of Sources (Fringe/Antenna)
(e.g. pioneers, activists, artists, extreme users, critical thinkers, community antennas such as social workers, ...)

Our “Weak Signals”	
Observation (potential seed of change)	**What could it mean for our problem?** (Notes)

Guideline for Template

Scenario Cores – Influence Matrix Analysis and Morphological Table

How do Factors interact with each other?

Start with the cross-impact analysis.

- Combining the respective projections of the factors created in the tetralemma exercise, we will be able to construct the backbone of a complete scenario.
- Before doing so, however, it is important to examine the interactions between the factors. This not only helps to get a better general understanding, but also yields crucial information for the next steps.
- To conduct the cross-impact analysis, you take a look at how Factor A influences Factor B – for example, how does a change in temperature affect public parking? While this would probably receive a low rating of 1, other factors such as crop harvests may be impacted much more strongly.
- Keep in mind that the consideration is only one way per cell, so strictly A influencing B and not the other way around.
- In the end, we can identify factors that have a lot of influence on other factors (highest average on active side), and the factors that are strongly dependent on others (or not influenceable at all – highest average on the passive side).

How to arrive at meaningful scenario cores?

Combine projections in the morphological table.

- The morphologic table is the crucial next step to arrive at scenario "cores". It is all about combining projections that make sense together (i.e. are reasonably consistent with each other) into a set that sketches the outline of a plausible world.
- Keep in mind: A scenario does not have to be likely or realistic to be useful for your exercise – Plausible means it is logically constructed and you can reasonably argue that it is internally consistent.
- The order of factors will be strongly determining the direction of the resulting scenarios. Therefore, start with the factors that were identified as the most influential (highest active rating) in the C/I Analysis!
- Choose a projection for each factor in such a way that in combination they could result in a plausible scenario. Starting from the left, the connecting line you draw will ultimately yield a set of projections that make up your scenario cores.

Tips and Tricks:

- Both the cross-impact analysis and the morphologic table revolve around group discussions to arrive at plausible results – Therefore, it is vital to facilitate formats that allow for a smooth process.
- To make the evaluations of the cross-impact-analysis more manageable, you can divide them up into smaller teams of, e.g. two people. Both should rate individually before comparing and discussing results, to avoid biases and arrive at a more nuanced rating.The more people or groups working on one rating, the more nuanced it can become, yet it also becomes more time-intensive.
- The morphological table can be approached with a larger group, yet everyone involved should have a shared understanding of the projections.

Tool Template

Scenario Cores – Influence Matrix Analysis and Morphological Table

1

Cross-Impact Analysis

- To the right, you can find a template for the cross-impact analysis.
- Copy it for your project and fill in the respective factors with descriptions, adding or removing them as needed.
- Work in groups to share the workload and arrive at more reflected results.

2 **Morphological Table**

Tetralemma Projection	Factor 1 Description	Factor 2 Description	Factor 3 Description	Factor 4 Description	Factor 5 Description	Factor X Description
Factor Projection 1	One projection	...	...	...	...	...
Factor Projection 2	A different projection	...	...	...	...	...
Factor Projection 3	Another projection	...	...	...	...	...
Factor Projection 4	One more projection	...	...	...	...	...

Guideline for Template

Wind Tunnelling

What is Wind Tunnelling?

- Wind Tunnelling is a method for stress-testing policy, strategy or project objectives against a set of scenarios to see how well they stand up to a range of external conditions. (van der Heijden 1997)
- By thinking about the interaction between the environment and potential courses of action, we get a better understanding of both our options as well as the context they will be placed in.
- Testing options against a set of scenarios can thus reveal their specific strengths, weaknesses, and the relative importance of their components.
- On the other hand, learnings about certain risks or an awareness for developments that lead to specific situations can be gained.

How is wind tunnelling conducted?

- **Positive/Negative:**
- What aspects of the selected policy are effectively working, and have seeming viability within this scenario?
- What aspects of the selected policy do not seem to address the needs of this future scenario?

- **Adaptation and Monitoring:**
- What could be adapted for this policy to work better/in more scenarios?
- Which characteristic of the scenario leads to policy failure and consequently should be watched out for/kept in mind?

For each policy option.

- **Cross-Cutting Conclusions:**
- From across the entirety of the wind tunnelling exercise, Robust Elements and Key Elements of the policy options can be abstracted
- Additionally, what are the learnings for the present situation as well as indicators of relevant scenario characteristics to keep an eye out for?

- **Additional Exercise**
- Review the wildcards you have collected previously:
  - Reflect on how they would change the wind tunnelling results?
- Review the weak signals you have collected earlier:
  - Reflect on how it would change the wind tunnelling results if any of these becomes stronger or even mainstream.

Tool Template

Wind Tunnelling

Policies	**Scenario A** Subtitle	**Scenario B** Subtitle	**Scenario C** Subtitle	(Wildcard from exercise)
Policy Option A Subtitle				
Policy Option B Subtitle				
Policy Option C Subtitle				
Additional Policy Options X Resulting from the exercise or other sources can also be wind tunnelled!				
Cross-Cutting Conclusions	• **Key Aspects:** What are aspects of policy options that seem to be key e.g. because they address a very important scenario, a major risk ….? • **Robust Elements:** What are the overarching robust aspects of the policy options that are relevant across scenarios? • **Indicators:** What developments should we observe in order to adapt our strategy in time? • **Learnings:** What do we learn for current policies, which assumptions need to be reconsidered?			

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More Foresight and Co-Creation Tools

More Foresight and Co-Creation Tools

- Handbook Challenge-led system mapping: A knowledge management approach - Transitions Hub
- JRC Exploratory Megatrend Workshop
- Kumu Mapping tool for stakeholder and system mapping
- MOTION- Developing a Transformative Theory of Change
- Policy Horizons Canada Foresight Resources
- Public Health Scotland - Toolbox
- The Futures Toolkit
- The Megatrends Hub
- Three Horizons Toolkit
- Towards a climate-resilient future together
- UTMC Urban Transition Mission Centre Knowledge Repository
- Visual toolbox for system innovation - Climate-KIC
- White Rose - Co-design and urban resilience: visioning tools for commoning resilience practices

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Policy Tools

Introduction

The policy tools provide practical support for designing effective and evidence-based policy strategies and interventions. The proposed tools provide structured approaches to policy design, assessment, and implementation, fostering consistency, transparency, and adaptability in policymaking.

They include guidance documents, templates, and frameworks that help policymakers, practitioners, and researchers to design evidence-based policy solutions through co-creation processes. It also includes a link to the FutuResilience Knowledge Base guidelines, explaining how to navigate the database and valorise the knowledge as part of participatory processes. These resources are designed to strengthen the link between knowledge generation and decision-making, enabling users to add value to existing research and innovation findings, while translate insights into coherent strategies and actionable measures.

More Policy Tools and Readings

- **FutuResilience Knowledge Base**

- Co-creation for Policy Toolkit
- Falling Walls - Engage Hubs
- Future Directions for Scientific Advice in Europe - Networks of evidence and expertise for public policy
- Hybrid threads: a comprehensive resilient ecosystem
- Integrating evidence, politics and society: a methodology for the science-policy interface
- Policy: The art of science advice to government
- REFERENCE GUIDE OF RESILIENCE INDICATORS
- Resilience rating system
- Smart4Policy - Check your competences!
- Science for Policy Handbook

Thematic Tools

Introduction

The thematic tools support the framing, exploration, and analysis of societal challenges, and resilience-building processes. Drawing on outputs from previous Horizon 2020 and Horizon Europe projects, as well as from International Organisations, these tools provide tested and validated methods for assessing vulnerabilities, capacities, and systemic interconnections across sectors and scales.

These subset of tools enable users to examine specific challenges – such as migration, disasters, education, health, food, governance – through thematically tailored approaches. Users can gain deeper insights into the dynamics of complex systems, evaluate potential interventions, and co-design responses that strengthen resilience. The thematic tools help bridge research and practice, offering reliable instruments to inform both strategic planning and operational action.

The thematic tools are listed according to the following categories

- Digitalisation
- Disaster
- Education, Health and Wellbeing
- Energy and Materials
- Environment and Biodiversity
- Food and Agriculture
- Good Governance
- Industries, Local Business, Finance
- Migration
- Transport and Mobility
- Urban Planning

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Thematic Tools

Digitalisation

- Democratizing a Cyber Security Toolkit for SMEs and MEs
- Designing Anti-rivalry: The Anti-rival Business Design Toolkit
- Digitally Augmented Co-production of Services: Lessons Learned and Policy Recommendations
- End-to-end Security of the Digital Single Market's E-commerce and Delivery Service Ecosystem – Report on the Evaluation of Pilots – Final Version
- Games developed for different actors to learn about fighting cybercrime
- Resources for Policy Makers – Web Accessibility Initiative
- Support of evidence-informed school improvement and the implementation of digital innovation
- Universal Cyber Security Toolkit

Disaster

- A Holistic Fire Management Ecosystem for Prevention, Detection and Restoration of Environmental Disasters
- A multicriteria tool for making an integrated assessment of the economic, social and environmental impacts of different risk management options
- Alert SYSTEM Platform Live
- Breaking the Silos! Game Instructions and Resources
- Dynamic and interactive network visualization of the evolving CCA and DRR landscape
- Enhancement high-impact weather emergency management - For operational authorities and for citizens and enterprises

Thematic Tools

- LINKS Community Center - Strengthening links between technologies and society for European disaster resilience
- Next-generation equipment tools and mission-critical strategies for First Responders
- Quick Risk Estimation Tool
- RECEIPT Climate Disaster Storyline Quiz
- Resccue Toolkit for City Resilience
- Think Hazard

Education, Health and Wellbeing

- A knowledge portal on the politics of Covid-19
- SMOOTH Case studies and pedagogical training manual for educational commons
- Communication guidelines to pandemic managers, public health officials and government officials
- DIGITAL TECHNOPOLE FOR RAPID MANUFACTURING RESPONSE - Medical supplies
- Enhancing Global Pandemic Preparedness - Diagnostic Kits
- Enhancing Global Pandemic Preparedness - Tools and Training
- EuroMix toolbox - new strategy for tiered testing and assessment of risk from combined exposure to multiple chemicals
- Guidance for climate-resilient and environmentally sustainable health care facilities
- Guidelines on risk communication principles for pandemics
- Health systems resilience toolkit
- Heir Marketplace - Tools
- Measuring the climate resilience of health systems
- Population Health Index - evaluates EU population health
- PVITA APP - support of the exploration of gamification as a motivational mechanism for efficient knowledge circulation
- Resilience in Education Systems: Rapid Assessment Manual

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Thematic Tools

Energy and Materials

- A POsitive Energy CITY Transformation Framework - Solutions
- City Energy Resilience Framework
- Community Energy Academy - Empowering energy citizens
- Smart Island Energy Systems: Demonstration of innovative solutions
- Socialwatt - Analyser, Plan and Check tools for innovative energy poverty schemes
- The Behavioral change in ENergy Consumption of Households (BENCH) agent based model
- THE TRIPLE-A TOOLS AND DATABASE of high-quality sustainable growth investments

Environment and Biodiversity

- AQUACROSS EBM Cookbook for aquatic ecosystem management
- Arctic Hubs - Global drivers, local consequences: Tools for global change adaptation and sustainable development of industrial and cultural Arctic "hubs"
- Climate Europe - Products of Climate Services
- Climate Transition Map
- DRYRivERS strategies and tools for cost-effective adaptive management of Drying River Networks
- ENGAGE tools for assessing feasibility of climate pathways
- IMPREX - Risk Assessment Tools
- Knowledge base - Learning Municipality Networks in pursuit of carbon neutrality and climate protection

Thematic Tools

- Ponderful - Data portal for Nature-based solutions using aquatic ecosystems
- SQAPP Interactive Soil Quality Assessment App
- CLIMATE ANALYTICS Tools for policymakers and researchers working on climate impacts and action

Food and Agriculture

- Advanced Tools and Research Strategies for Parasite Control in European farmed fish
- Booklets and reports in support of food diversity in food supply chains
- Climate resilience and disaster risk analysis for gender sensitive value chains
- New Technologies, Tools and Strategies for a Sustainable, Resilient and Innovative European Aquaculture
- Self-evaluation and holistic assessment of climate resilience of farmers and pastoralists
- Sim4Nexus - A Serious Game for sustainable and integrated management of resources (water, land, energy and food)
- Strategic framework for guiding decision-makers in the choice of appropriate support instruments for small farms
- The resilience design and monitoring tool
- Toolkit for value chain analysis and market development integrating climate resilience and gender responsiveness
- Towards climate-smart sustainable management of agricultural soils - Knowledge Sharing Platform

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Thematic Tools

Good Governance

- A toolkit for fostering co-creation and participative community engagement with vulnerable communities at risk
- Arts-Based Methods for Transformative Engagement. A Toolkit
- Creative Practices for Transformational Futures
- Deliberative Spaces for Democracy - Tools
- Framework for building a self-sustaining R&I ecosystem that is open, transparent, and responsive
- Human centeredness and safety culture measurement toolkit
- Manual for Cross Talk: Framework for public events which facilitate cross-cultural encounters
- Open Data for Resilience Initiative: Field Guide
- Perceive Simulation Lab - simulate the implementation of the European Cohesian Policy
- Recoms - Creative methods in Research and Community Engagement
- Sea Innovative Hub - Connecting Public & Private Stakeholders
- Tools for citizen inclusion in policy processes: mapping and analysis
- Tools to promote and facilitate citizens' participation and the creation of a community

Industries, Local Business, Finances

- Deck of Cards of emerging innovations and Manual for using them in strategic conversations
- Feasibility Framework Tool for Social Investment
- Financial system resilience index

Thematic Tools

- LINKS Community Center
- PROTAX - A toolkit for LEAs and tax authorities
- Resilience Financing Landscape Toolkit
- Supply Chain Explorer - Just2ce
- The Climate Innovation Window

Migration

- BRaVE toolkit on social polarisation
- Database of exemplary practices in integration of newly arrived migrants
- Digital Tools for Migration
- Disaster displacement: How to reduce risk, address impacts and strengthen resilience
- Preventing violent extremism through community resilience - Policy & Practice Outputs

Transport and Mobility

- CIVITAS Urban Mobility Tool Inventory
- FARO - Safety and Resilience Guidelines
- Foresee - Learning Hub

Thematic Tools

- RECIPROCITY - Training materials and webinars
- Resources for sustainable and smart mobility for all
- TRIPS Co-design For All Toolkit

Urban Planning

- ArchHub - Tools to build resilience in historic areas
- Circular Families Game
- Cities2023 - Digital Tools
- City Resilience Dynamics tool
- Edible Cities Network Tools
- Enhancing Urban Resilience through CURE Cross-Cutting Applications
- Houseful - Circular economy for public sector
- Open-air laboratories for Nature Based Solutions to manage hydro-meteorological risks
- Reconnect Nature Based Solutions Tools and Models
- Resilience Recovery Toolkit
- Resources - Sharing Cities Replication Playbooks and Toolkits
- The city resilience index
- Triple-A Toolkit - developing effective adaption strategies for cities
- URBiNAT Nature Based Solutions Catalogue and Selection Tool

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Scenario Method

Disclaimer: Literature on scenario building is vast and approaches vary widely, we thus offer a small selection of overviews and classical scenario literature in this section.

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Publishing Notes

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Credits

freepik.com

FutuResilience project

https://cordis.europa.eu/project/id/101094455

Citation

Warnke, Philine; Barberis, Matias; Freudenberg, Charlotte; Lehn, Benjamin (2025): FutuResilience Toolbox.

With assistance of Stina Andreassen, Asimina Christoforou, Kerstin Cuhls, Tea Danilov, Fernando García Martin, Elina Griniece et al.

Available online at https://cordis.europa.eu/project/id/101094455/results