

# TransformAr

*Accelerating and upscaling transformational adaptation in Europe:  
Demonstration of water-related innovation packages*



PLAYBOOK



This project has received funding from the European Union's H2020 innovation action program under grant agreement 101036683

# ACKNOWLEDGMENTS

<b>Deliverable Number and Name</b>	D3.2.1. Adaptive Transformation Playbook
<b>Work package</b>	WP3 Envisioning Transformational Pathways for the Demonstrators
<b>Dissemination Level</b>	Public
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<b>Date submitted</b>	09/05/2023
<b>File Name</b>	Adaptive_Pathway_Transformation_Playbook.pdf
<b>Status</b>	Version 3.0
<b>Reviewed by</b>	Rim Khamis, Mampionona Rakotonirina, Stéphane Simonet
<b>Suggested Citation</b>	ACTERRA, Verhaert, et al. (2023). Adaptive pathway Transformation Playbook, TransformAr Deliverable 3.2.1, H2020 grant no. 101036683
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# EXECUTIVE SUMMARY

## PROJECT OBJECTIVE

The impacts of climate change are here and now. The consequences on people, prosperity and the planet will only intensify in the upcoming years. In order to prepare for this uncertain future, **transformational adaptation** is necessary.

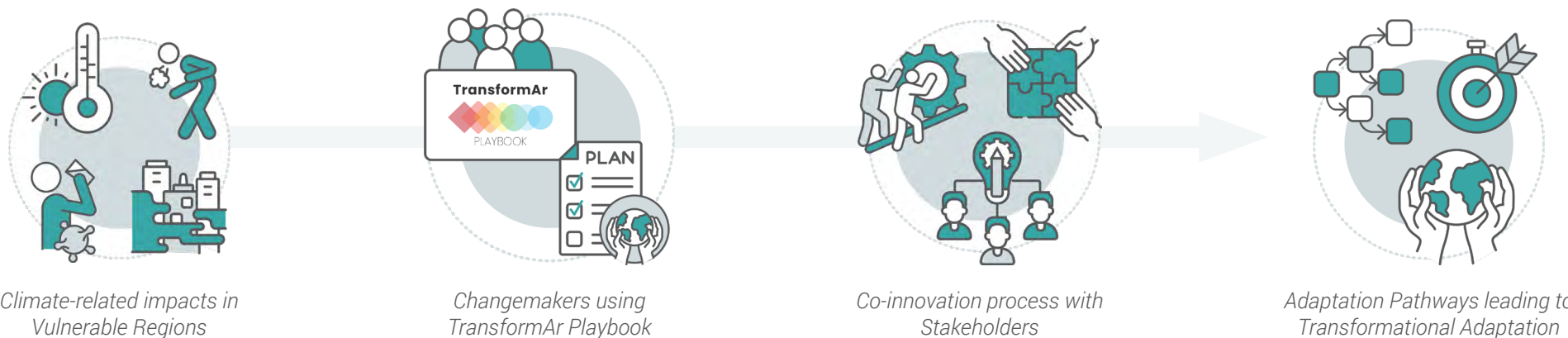
TransformAr is an **EU-funded project** that aims to create solutions to introduce large-scale and disruptive adaptive transformational processes to **reduce climate-related impacts** in vulnerable regions and communities across Europe. This transformational adaptation is being triggered by a **co-innovation process** that aims to co-create **adaptation pathways** taking into account stakeholder inputs as well as scientific and socio-economic indicators.

## PURPOSE OF THIS PLAYBOOK

Within this playbook, we will offer an overview of the essential tools you might need for designing adaptation pathways in your own communities, guide you in how to discover opportunities with local stakeholders, and offer methods to evaluate your progress. Inspiring stories will also help showcase the potential of transformational adaptation as implemented in other regions.

## WHO IS IT FOR?

Any public or private entity with the ambition to understand how to envision and drive transformational adaptation. Mentors, coaches, scientific and industrial partners will be able to make use of the tools and materials. The playbook will also ease future exploitation and use of the methods by targeted end-users.





# SCOPE OF TRANSFORMAR

This Playbook is primarily based on the experiences within the TransformAr project, but aims to serve as a foundation for the broader community aiming to implement transformational adaptation.

Transformational pathways are being co-developed at a sub-national level across 6 demonstrator regions, each with their own specific biophysical, social, and economic conditions. This geographic distribution allows for the methodology to be tested across a variety of situations.

Gathering 22 partners from 11 countries, the project's findings will contribute to the EU's strategy on climate change adaptation.

■ Project Countries  
 ◆◆◆◆◆ Demonstrators



## HOW TO USE THIS PLAYBOOK

The Playbook has been designed along the principle of modularization, which means that we have divided the practical content into discrete modules that are independent and mostly inconsequential from each other. However, the definition of concepts and overarching ambition of the playbook are best explored in its entirety.

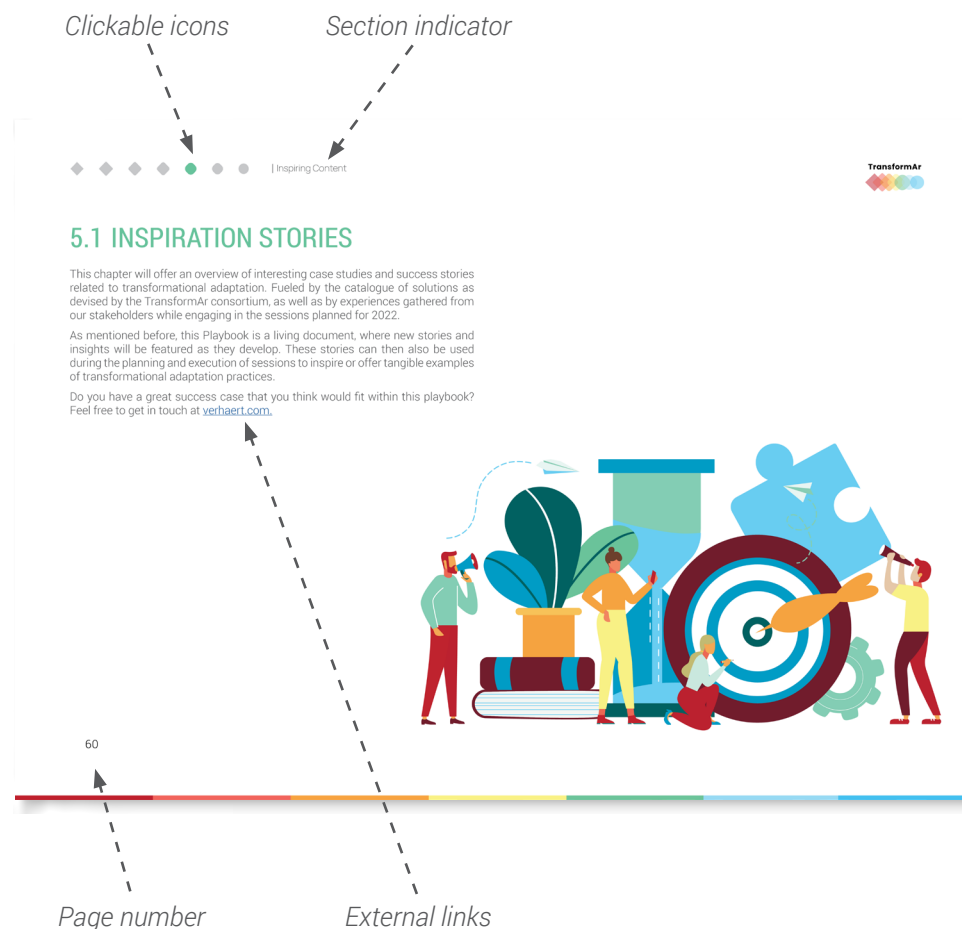
The Playbook includes clickable icons which will take you from one chapter to another. Skipping ahead from the table of contents to a specific workshop for a quick refresher is thus made exceedingly easy.

## HOW TO CONTACT US

Do you have any questions on:

- The general content of the Playbook? Please reach out to [Verhaert](#).
- The climate data and socio-economic models? Please reach out to [CMCC](#), [PIK](#) or [E3M](#).
- The adaptation pathways development? Please reach out to [ACTERRA-consulting](#).
- The stakeholder engagement aspects? Please reach out to [FEUGA](#).
- Overall coordination TransformAr? Please reach out to [UAntwerpen](#).

For specific emails please consult our [Contact Page on pg 68](#).



# 01

## INTRODUCTION

- 1.1. What do we mean by Transformational Adaptation?
- 1.2. Constructing Adaptation Pathways
- 1.3. Chapters support a Workshop-Based Approach

1 Introduction

2 Engaging Stakeholders

3 Planning a workshop

4 Driving Transformational Adaptation

5 Inspiring Content

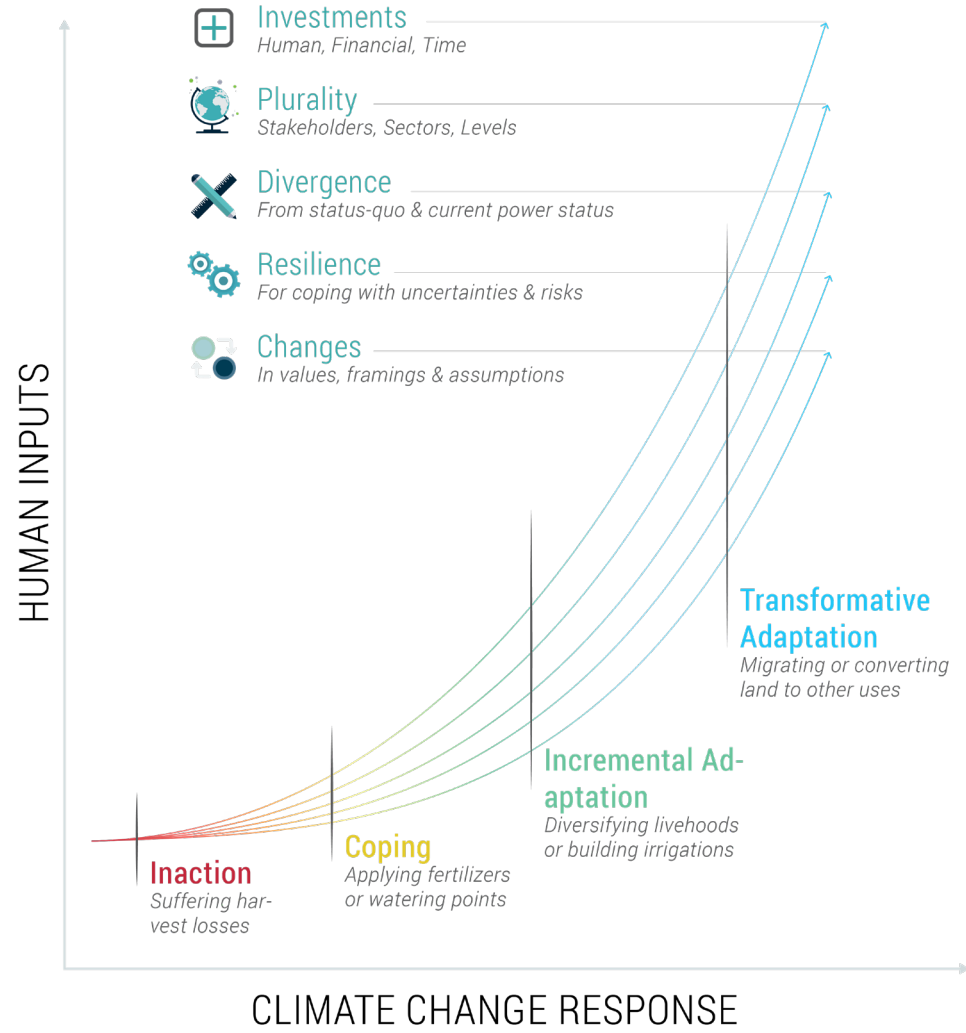
6 Annex: Tips and Canvases

# 1.1 WHAT DO WE MEAN BY TRANSFORMATIONAL ADAPTATION?

Coping with climate change can take the form of many strategies. For instance, in response to floods a community could build higher dams or offer preferential loan conditions to rebuild damaged homes. However, these actions don't fundamentally change the risk of increasingly severe storms or future floods. There is also a socio-economic limit to these measures which prevents them from being implemented indefinitely.

Instead of these "incremental adaptations", communities could envisage to respond to these uncertain risks by transforming their social-ecological system into a more resilient one. This could mean the relocation of houses or crop fields to different areas, or any other measure that fundamentally alters the system's ecological and social properties. This reduces the root causes of the vulnerability to climate change.

Since these transformative adaptation measures are much more far-reaching and invasive, the implementation can face quite a few barriers in terms of social or political support. This is where the co-creation and engagement of stakeholders becomes very important to facilitate and co-develop adaptation pathways that are supported and accepted by the local community.



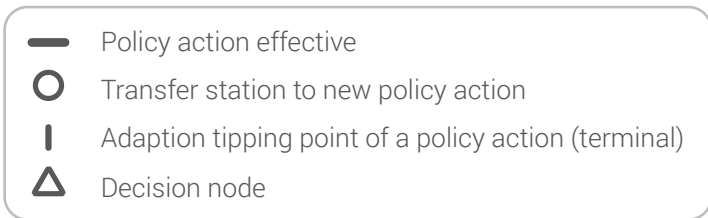
**Figure 1 - Transformational Adaptation Strategies**  
 Ref: Fedele et al., (2019), Transformative adaptation to climate change for sustainable social-ecological systems, Environmental Science & Policy 101 (2019) 116-125

# 1.2 CONSTRUCTING ADAPTATION PATHWAYS

The practical implementation of transformational adaptation can thus take the form of adaptation pathways. These can be described as sequences of actions, which can be implemented progressively depending on future dynamics. An important aspect here is that it addresses one of the major issues faced by decision makers when it comes to climate change, namely uncertainty.

The objective is to make an assessment of different solutions, calculate their feasibility, and mark decision nodes or tipping points where one pathway can take effect or be engaged. Adaptation pathways can thus encompass alternative ways to achieve a defined objective or strategic outcome.

This Playbook will attempt to convey the necessary tools to develop and envision these adaptation pathways for a wide variety of community systems.



**Action A&D:** Robust action but require large capital or would have ramifications on social/economic systems. (e.g. elevating roads/houses).

**Action B:** Short term action - easily implemented/allow to buy us time but do not have a long shelf life. (e.g. installation of booster pumps to improve drainage capacity).

**Action C:** Medium term action

ADAPTATION PATHWAYS MAP

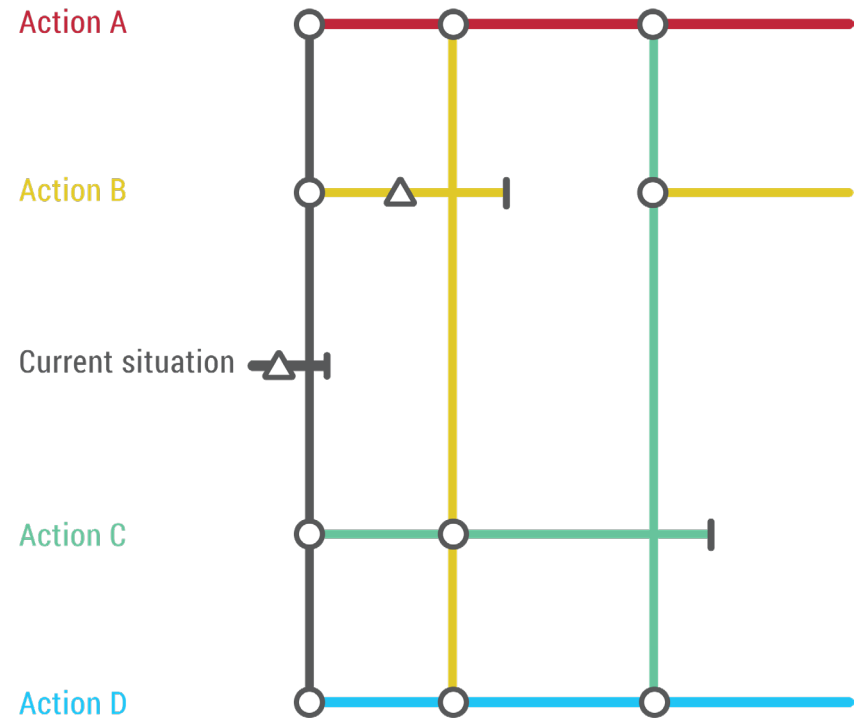


Figure 2 - Adaptation Pathways Map

Ref: Adapted from Zandvoort et al. (2017): Adaptation pathways in planning for uncertain climate change: Applications in Portugal, the Czech Republic and the Netherlands. Environmental Science and Policy 78 (2017) 18–26.

## 1.3 CHAPTERS SUPPORT A WORKSHOP-BASED APPROACH

As will become clear throughout the playbook, the core format to co-develop adaptive pathways through each demonstrator region will be through a workshop-based approach. Each chapter will provide relevant tools and guidance which relate to the interactions or methods to be applied during the sessions.

- The **“Engaging Stakeholders”** chapter will emphasize the need to stimulate participation and active engagement of stakeholders to achieve effective co-innovation during the sessions.
- The **“Planning a Workshop”** chapter will define the benefits and overall concept of conducting effective workshops.
- The **“Driving Transformation Adaptation”** chapter will tackle the specific and practical requirements of the 3 sessions to be conducted to develop adaptation pathways.
- The **“Inspiring content”** chapter will showcase a few success stories of transformational adaptation that can be used during sessions as inspiration examples.
- The **“Annex: Tips and Canvases”** chapter will offer an overview of best practices as well as tips and tools that can be used.

The reason we implement a workshop-based approach is due to its effectiveness and suitability to determine appropriate adaptation solutions with stakeholders.

- Climate change is a global phenomenon but its consequences are experienced at a local scale.
- Local stakeholders know the territory better, they are probably already experiencing the impacts of climate change and they are able to identify the challenges impeding the implementation of adaptation solutions.
- A dialogue with key local stakeholders and scientists improves the understanding of climate impacts and its ramifications on key community systems.
- The dialogue increases the acceptability of proposed solutions and permits to address the constraints of local stakeholders.



# 02

## ENGAGING STAKEHOLDERS

- 2.1. Co-Innovation: A tool to tackle Climate change
- 2.2. Multi Actor Approach (MAA) concept
- 2.3. Adopting a Co-innovation Mind-Set
- 2.4. Procedures & Guidelines for Engaging Stakeholders
- 2.5. Managing Conflict

1 Introduction

**2 Engaging  
Stakeholders**

3 Planning a  
workshop

4 Driving  
Transformational  
Adaptation

5 Inspiring Content

6 Annex: Tips and  
Canvases



## 2.1 CO-INNOVATION: A TOOL TO TACKLE CLIMATE CHANGE

In order to achieve meaningful impact we will have to involve stakeholders that have local knowledge of the environment and the socio-economic system. Their insights on the regional particularities will allow for co-innovation that allows for relevant and well-tailored solutions to enhance their climate resilience.

One of the main focus points throughout the engagements with stakeholders will be to demonstrate the potential and effectiveness of co-innovation as a tool to achieve transformational adaptation. Without local stakeholder support and end-user acceptance, no measure will be implemented in a sustainable and enduring way.

*The participation and active engagement of cross-sectoral and multi-scale stakeholders from the local and regional communities is key to the successful implementation of transformational adaptation measures with regards to climate change.*

In this Playbook Chapter we will give a short overview of the basic concepts and procedures for involving demonstrator communities and engaging with stakeholders. For each region there are **Key Community Systems (KCS)**, these represent the territory's viable sectors and systems and the ones that are most vulnerable to climate impacts. Engaging the right people within these KCS is vital to implementing successful change.

This chapter was based on FEUGA(2022) Stakeholders' Engagement Guidelines. TransformArDeliverable 1.1, H2020 grant no. 101036683







## 2.2 FOCUS ON KEY COMMUNITY SYSTEMS

**Key Community Systems (KCS)** are socio-political, economic & environmental systems that are necessary for the good functioning of one region or one community and that are most affected by climate impacts and are also central to resilience building and sustainable growth.

Agriculture, forestry, fisheries, aquaculture, water management, environment, & biodiversity are all examples of KCS. In some cases, the KCS can be defined even more specifically, such as in water management, which could include different KCS specifically for water quality protection and flood/stormwater load prevention.

Each of these KCS have their own unique set of stakeholders and relevant actors. These can include local residents, companies, community organisations, local and national public authorities. Having strong partnerships within a particular region ensures that there is a high potential for [transformational adaptation](#).



## 2.3 MULTI ACTOR APPROACH (MAA) CONCEPT

The basis for a successful engagement lies in the **Multi-Actor Approach (MAA) concept**, with a goal to trigger **interactive innovation** across the whole value chain, whilst tackling demand-driven, actual needs of involved and impacted climate stakeholders. This means that the sessions you will be conducting must focus on real problems and address tangible concerns of the end users.

In order to co-innovate, it is essential to involve stakeholders from the very beginning of any desired solution, building communities of practice, making them part of the **decision-making**, implementation and evaluation. It also means that partners with complementary types of knowledge – scientific, practical and other – must join forces in the project activities from beginning to end.

There are a **set of general principles** that must be upheld to ensure proper co-innovation processes, regardless of the phase the partners find themselves in. First contact with stakeholders is the stepping point for co-innovation, as it provides basic information while also contributing to a trustworthy innovation ecosystem.

Building on these general principles, it will be important to apply these to the specific concerns of the identified Key Community Systems. Who are the actors that play a key role in climate adaptation? How do we find them and select them to be involved? How do we maintain these relationships?

### GENERAL PRINCIPLES OF MAA



**Figure 3 - General Principles of Multi Actor Approach Concept (MAA)**

*Ref: Adapted from Multiactor projects (EIP AGRI Brochure, 2017)*

## 2.4 ADOPTING A CO-INNOVATION MINDSET

Co-innovation is about constant communication. Stakeholders deserve similar resources to those available to organizing partners, for this brings a sense of **belonging and trust**. That is why the process should structure all of the gathered and developed information in an **accessible bottom-up approach**, that allows:

- Sharing broad, practical information and practice abstracts
- Cross-learning via workshops, frequent discussions (interactive innovation)
- Collaborative adaptation with peer reviews and sparring partners
- Connecting innovation brokers and multipliers

It is sometimes important to address key stakeholders in their local languages, and to consider socio-economic particularities, needs and feelings prior to engaging with them.

*The result of co-innovation is co-ownership, which is then transformed into trust and early adoption.*



## 2.5 PROCEDURES AND GUIDELINES FOR ENGAGING STAKEHOLDERS

A truly effective innovation ecosystem is **built around stakeholder input**, and that should be the main driving force for the partners to consider. In order to preserve the health of the innovation ecosystem, leaders must be aware of the fact that stakeholders are not always available or motivated to participate in activities. Stakeholder inputs need to be included in all steps as well.

There is a cycle of activities that **structures the engagement**:

- Data collection and stakeholder profile update (**identify**)
- Stakeholders mapping and draft of the engagement (**plan**)
- Design and implementation of the engagement (**implement**)
- Reporting and follow up (**evaluate**)

For the purposes of the playbook, the **identification** and **planning stages** will be most relevant to explore.



**Figure 4 - Transformar Engagement Operational Management Procedures**

*Ref: Adapted from FEUGA(2022) Stakeholders' Engagement Guidelines. TransformArDeliverable 1.1, H2020 grant no. 101036683*

## 2.5.1. IDENTIFYING THE RIGHT STAKEHOLDERS

One of the first considerations to keep in mind when identifying stakeholders is their capacity for co-innovation. Are these actors capable, engaged, and motivated to participate in a meaningful way? An actor that expresses their needs, can determine their level of involvement, and is willing to participate in sessions is a prime candidate to be a Key Stakeholder.

As can be seen in the Key Stakeholder Diagram, in order to achieve transformational adaptation we need to engage a wide field of actors. It might be that a KCS in agriculture has a range of involved stakeholders such as farmers, dairy product industry, agricultural researches, water managers, etc. that all have meaningful input to share. Each KCS should be engaged within their own dedicated workshop.

A Stakeholder Matrix can be found in the tools chapter, which will allow you to list the actors' type, sector, influence, and motivation to take climate action as well as the stakeholders' possible contribution to your sessions and how the project could benefit them.



Figure 5 - Key Stakeholder Diagram

Ref: Khamis, R., et al. D1.2 Stakeholder Matrix and IE Baselines Profiles (2022)

Stakeholder name	Type	Sector/Area	Influence/role in society	Motivation of actor to take climate action	Stakeholder's contribution to TransformAr	Added value of TransformAr for this actor
Ministry of Environment	Government	Delegation of the minister of ecological transition and solidarity to environment planning and housing	Regulatory role (development of policies & regulatory monitoring)	Reactive & limited to policy making	Provide knowledge on developed (or planned) laws, regulations in the area of climate adaption	Guide regulatory action from climate adaption perspective
Urban Planning Office	Government (type)	Environment & sustainable development	Guiding role in land use planning and stormwater management	Reactive	Partner in KCS	Guide regulatory action from a climate adaption perspective in regional scale
Networking Agency	NPO	Sustainable development, CCA	Raise awareness	Active role	Partner in KCS	Raise the awareness of citizens and network

Figure 6 - Stakeholder Matrix (Example)

Ref: Adapted from Khamis, R., et al. D1.2 Stakeholder Matrix and IE Baselines Profiles (2022)

## 2.5.2. ENGAGING WITH YOUR STAKEHOLDERS

Multiple tactics can be employed to ensure meaningful engagement with your stakeholders. It is important to understand what type of actions are being undertaken at what time. Are we merely informing, consulting, or involving them with a specific objective in mind? The means and tools to engage differ in each of these situations.

- Important to keep focus and make clear expectations for stakeholders during sessions.
- Engagement methods must also take into account availability and motivation of stakeholders.
- Continued feedback from stakeholders is paramount.
- Demo facilitators conduct the engagement itself with support from technical support partners.

	Inform	Consult	Involve	Co-innovate
Method	One-way Engagement	Asymmetrical two-way Engagement	Symmetrical two-way Engagement	Co-owned Solutions
Objective	Dissemination	Data Gathering	Community building	Incorporate Knowledge
Means	Demo Web, Social Media, Press Releases	Surveys, Interviews	Discussions, Policy Briefs, Trainings	Joint Decisions, Cross-learning Workshops

**Figure 7 - Engagement Method Chart**

Ref: Adapted from FEUGA(2022) Stakeholders' Engagement Guidelines. TransformArDeliverable 1.1, H2020 grant no. 101036683

## 2.6 MANAGING CONFLICT

Issues might arise during the project regarding stakeholders' conflicts of interest.

- Incorporating stakeholder identification, stakeholder prioritization and analysis can make it easier to identify potential conflicts and manage them.
- Stakeholders may develop a lack of confidence in the project, either as a result of feeling that their concerns and opinions have not been addressed or that risks are not being adequately managed.
- The process of stakeholder analysis and engagement may help foresee the risks and opportunities that a stakeholder can bring across the project life-cycle, and the impact of not putting a suitable strategy in place.



Follow this playbook to  
**discover, build and achieve**  
**Transformational Adaptation**  
and boost your Climate  
Change Resilience.

TransformAr



# 03

## PLANNING A WORKSHOP

- 3.1. Benefits of choosing a Workshop Format for Climate Adaptation
- 3.2. Characteristics of a Workshop
- 3.3. The 4 Elements of a Workshop
- 3.4. Tips & tricks for Organizing Workshops

1 Introduction

2 Engaging Stakeholders

**3 Planning a workshop**

4 Driving Transformational Adaptation

5 Inspiring Content

6 Annex: Tips and Canvases





## 3.1 BENEFITS OF CHOOSING A WORKSHOP FORMAT FOR CLIMATE ADAPTATION

We are implementing our sessions in a workshop format, as this constitutes the most efficient configuration to involve stakeholders of KCS to share their insights on climate adaptation.

- A series of sessions provides a great way to create an intensive educational experience for region and country specific informations in a short amount of time
- A workshop can introduce new ways of working related to adaptation pathways
- Great way to teach hands-on skills in transformational pathways in a safe situation
- Get feedback from presenter and peers in the group
- Is a way to pass on climate specific ideas and methods to colleagues / stakeholders
- Create a sense of community or common purpose among participants



## 3.2 CHARACTERISTICS OF A WORKSHOP

- Duration is important: aim each session to be between **2 hours to 4 hours**
- **Small groups**: usually from 6 to 15 participants (if more, it is important to cluster the inputs in an efficient manner)
- All workshop participants should have a chance to be heard
- Designed for people **working together** in the same field or project
- Led by workshop **(co)-leaders or facilitators**
- They can be organized in a **physical or in a digital setting**



## 3.3 THE 4 ELEMENTS OF A WORKSHOP

### 1) PLANNING

- ✓ Consider your topic
- ✓ Consider your audience
- ✓ Consider the workshop size
- ✓ Consider the time available
- ✓ Vary activities
- ✓ Vary the seriousness of the material
- ✓ Plan a break
- ✓ Carefully reflect on the amount of material you can present
- ✓ Participants need time to talk and connect with one other
- ✓ Consider your presentation

### 2) PREPARATION

- ✓ Find out about the space you'll be using (when physical)
- ✓ Bring everything you need (e.g. electronic equipment, workshop materials, tools, etc.)
- ✓ Arrange well beforehand any equipment you'll need
- ✓ Make materials and hand-outs as attractive and interesting as possible so that participants will return to them
- ✓ Be overprepared
- ✓ Make up an evaluation form
- ✓ Finally, get a good night's sleep the night before

### 3) IMPLEMENTATION

- ✓ Greet everyone and provide a warm welcome into the session
- ✓ Introduce yourself as a facilitator and the team behind the session
- ✓ Give a brief introduction about the project and present the planning of the session.
- ✓ Begin introduction rounds to give participants a chance to get to know each other better
- ✓ Make sure the setting and environment of the workshop facilitates collaboration and brainstorming (E.g. If physical workshop, organise the seating in a circular format so that participants can interact with each other.)
- ✓ Don't forget to arrange food and drinks, especially if the length of the session exceeds 2 hours (when physical)

### 4) CLOSURE

- ✓ Summarise the session day and explain how it will help develop adaptation pathways
- ✓ Explain the next steps
- ✓ Thank the participants of the session
- ✓ Send out the minutes of meeting / results or the participants to optimize further involvement

## 3.4 TIPS & TRICKS FOR ORGANIZING WORKSHOPS



### PRO-TIP

*“A workshop is a single, short, interactive program designed to teach, introduce or find new ways of doing things”*

*- Filiep Dewitte, Innolab consultant at Verhaert, Masters in Innovation*

### 3.4.1. GENERAL TIPS

- ✓ Set the scene (atmosphere, room/virtual, furniture, music, ...)
- ✓ Complete registration of participants
- ✓ Go over the ground rules of a workshop (bathrooms, breaks, rules of engagement, ...)
- ✓ Share agenda and set expectations
- ✓ Visualize the process and goal
- ✓ Mix it up (debates, videos, post-it note brainstorms, guest speakers, competitions, presentations, ...)
- ✓ Make it fun and unique
- ✓ Play with energizers (fun exercises, re-vitalise, motivate to go wild ...)
- ✓ Build trust with an icebreaker (personal info, anecdotes, introductions, ...)
- ✓ As facilitator : facilitate, don't control. Allow participants to guide the workshop
- ✓ Encourage (multimedia) documentation (text, drawings, pictures, videos, ...)
- ✓ Assess goal completion – if not completed, why?
- ✓ Complete check-out (group sharing, feedback moment, learnings, to-dos ...)
- ✓ Communicate the next steps



### 3.4.2. BEFORE THE WORKSHOP

Set the ground rules of the workshop. Be sure to include:

- ✓ Breaks
- ✓ Rules of engagement
- ✓ Bathrooms
- ✓ Food/Drinks

**LEARN** different techniques in handling different type of stakeholders

**ENGAGE** your audience through full participation

**ACTIVATE** ideas and spark interests by contributing in meeting/discussion

**NAVIGATE** any sensitive topics or challenging facilitation process

- If working with online canvases, inform your participants beforehand and share any meaningful links to test out the application features.
- Go around the room and complete a check-in.
- It is a chance for participants to share what they're bringing to the table
  - How do they feel?
  - What kind of mood are they in?
  - Are they excited about the workshop?

***"You 'll never know unless you ask!"***

### 3.4.3. IN CASE OF ONLINE WORKSHOPS



Please turn on your cameras throughout the workshop.



It's always good to mute your microphone when you're not talking - Just remember to un-mute it to participate.



You can use the 'raise hand' feature in the video call to notify the meeting host that you'd like to speak.



Do not hesitate to use the chat option to ask your questions, share your thoughts throughout the workshops.





### 3.4.4 FACILITATOR'S SPECIAL

*It is important for the facilitator to have either knowledge on climate adaptation or innovation-related aspects. When participants go off topic, or seem uninterested the facilitator has a role in redirecting the discussion and to gain their interest.*

#### **Goal & Responsibility:**

- Lead discussion without taking part in it
- Methodological expertise
- Communication between participants during the session (intro, defusing tension and bringing focus in discussions, ...) - Stay on topic
- Make sure all participants are seen and heard

#### **Characteristics :**

- Strong communicator / setting the good mood
- Expert in time management & planning
- Creative
- Climate or Innovation related expertise

#### **Tasks**

- Preparation and moderation
- Setting the mindset
- Summarise workshop
- Stay open-minded about unexpected topics

### 3.4.5 QUESTIONS FOR CRITICAL THINKING

- ? *Which kind of exercises are best suited for the task at hand?*
- ? *Have I taken different people's needs into consideration?*
- ? *Is there enough time for every element?*
- ? *How can I activate the participants before the meeting?*
- ? *What do I want the participants to leave with? What should the participants do afterwards?*
- ? *What kind of environment would best suit the group's needs?*
- ? *Have you prepared all tools, equipment and materials?*



# 04 DRIVING TRANSFORMATIONAL ADAPTATION

- 4.1. TransformAr's Workshop Methodology
- 4.2. Session I
- 4.3. Session II
- 4.4. Session III
- 4.5. Full Example

1 Introduction

2 Engaging Stakeholders

3 Planning a workshop

**4 Driving Transformational Adaptation**

5 Inspiring Content

6 Annex: Tips and Canvases



# 4.1 TRANSFORMAR'S WORKSHOP METHODOLOGY

The overall objective of all three sessions: to co-construct adaptation pathways, made up of a sequence of decision-points and measures allowing for decision making in a specific region.

A framework has been put in place across all 3 sessions to help collect and register the necessary components to begin driving transformation adaptation.



## 4.1.1. TRANSFORMAR WORKSHOP METHODOLOGY STEPS OVERVIEW

The following steps will be followed throughout the different sessions of the workshop.

### STEP 1

#### Identify the climate-related risks faced by a given sector

Develop Risk Chain with climate hazards, exposure, vulnerability, intermediate impact risk & Socio-economic impacts.

### STEP 2

#### Select a most prominent risk (which you would like to address by developing adaptation pathways)

Identify key issue to be addressed, to be determined by the participants themselves through discussions, activities, or other.

### STEP 3

#### Determine risk levels and outcomes (low, medium, high, very high risks)

This is to be determined by participants through a discussion with scientists. E.g., what does it mean to have a low risk of [a specific risk] (e.g., soil erosion / surge of infectious diseases/ etc.)? What is the outcome?

### STEP 4

#### Choose (a) relevant indicator(s) to measure/monitor the risk: This is to be able to assess and monitor the risk evolution

To be able to determine a relevant indicator, it is important to determine risk outcomes (e.g., if soil erosion has impacts on crop productivity, the latter could be a good indicator. Productivity can be assessed in Weight of produced crop (Tons), Money equivalent (\$), etc.)

### STEP 5

#### Identify critical thresholds (at which point do we go from one risk level to another)

E.g., a reduction of 5% of crop productivity means the passage from low-risk level to medium risk level, a 10% reduction of crop productivity means an intensification of risk going from medium to high, etc.

### STEP 6

#### Set one or several objective(s) (Develop a vision)

E.g., a reduction of 5% of crop productivity means the passage from low-risk level to medium risk level, a 10% reduction of crop productivity means an intensification of risk going from medium to high, etc.

### STEP 7

#### Identify relevant solutions (adaptation measures) that align with the objective/vision

Classification of good/vs. bad solutions.

### STEP 8

#### Asses the relevance of each option and prioritise them based on risk levels and alignment with the set objective

Classification of solutions based on determined risk levels.





## 4.1.2. WORKSHOP FRAMEWORK



### Risk Factors

- Hazards
- Exposure
- Vulnerability



### Challenges

- Intermediate impact
- Perceived risks
- Socio-economic impact
- Existing solutions



### Risk prioritisation

- Most prominent risks
- Risk levels



### Impact assessment

- Risk impact
- Thresholds



### Envisioning

- Target goals and desired future for the defined thresholds

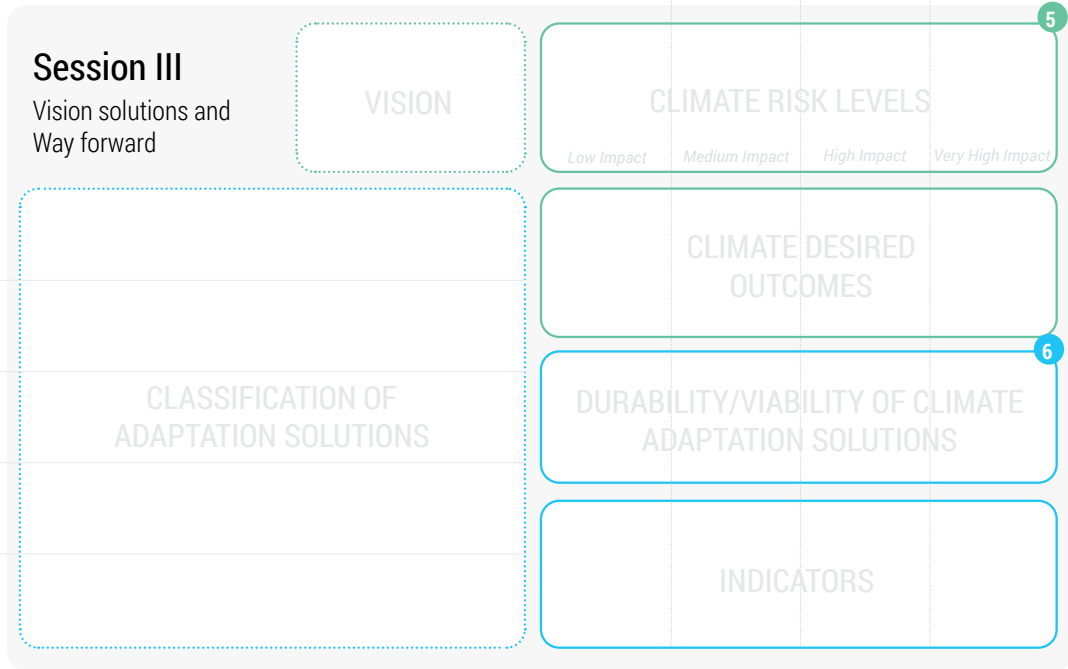
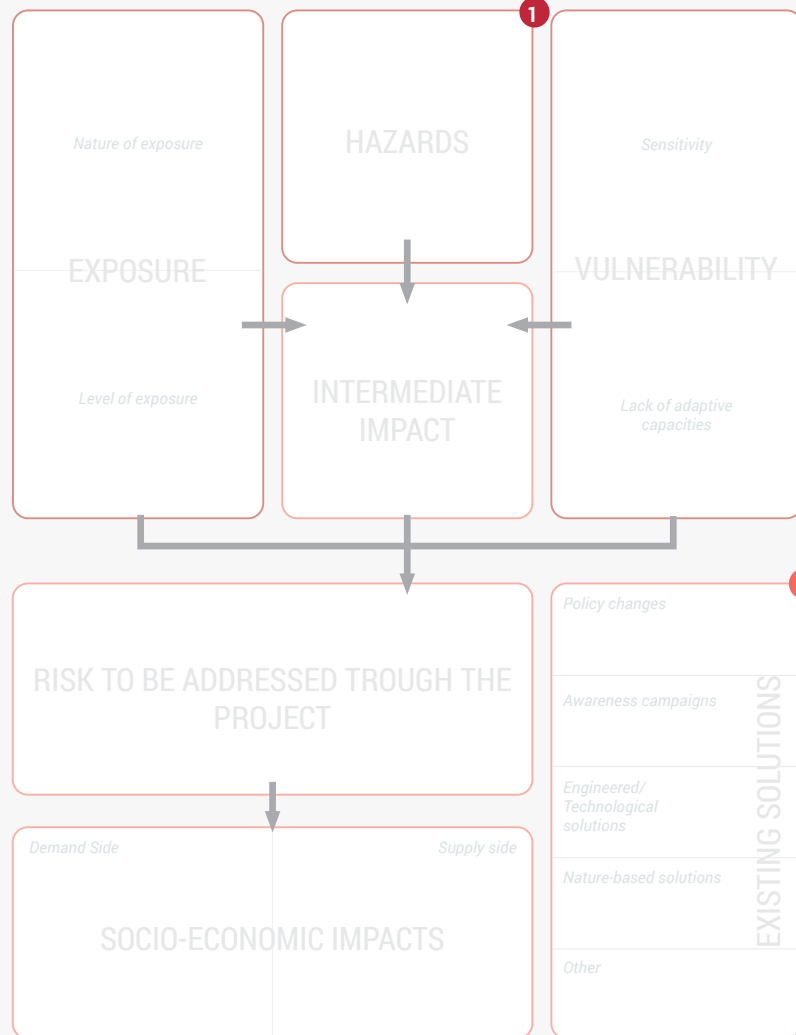


### Measures

- Combination of Climate Adaptation Measures

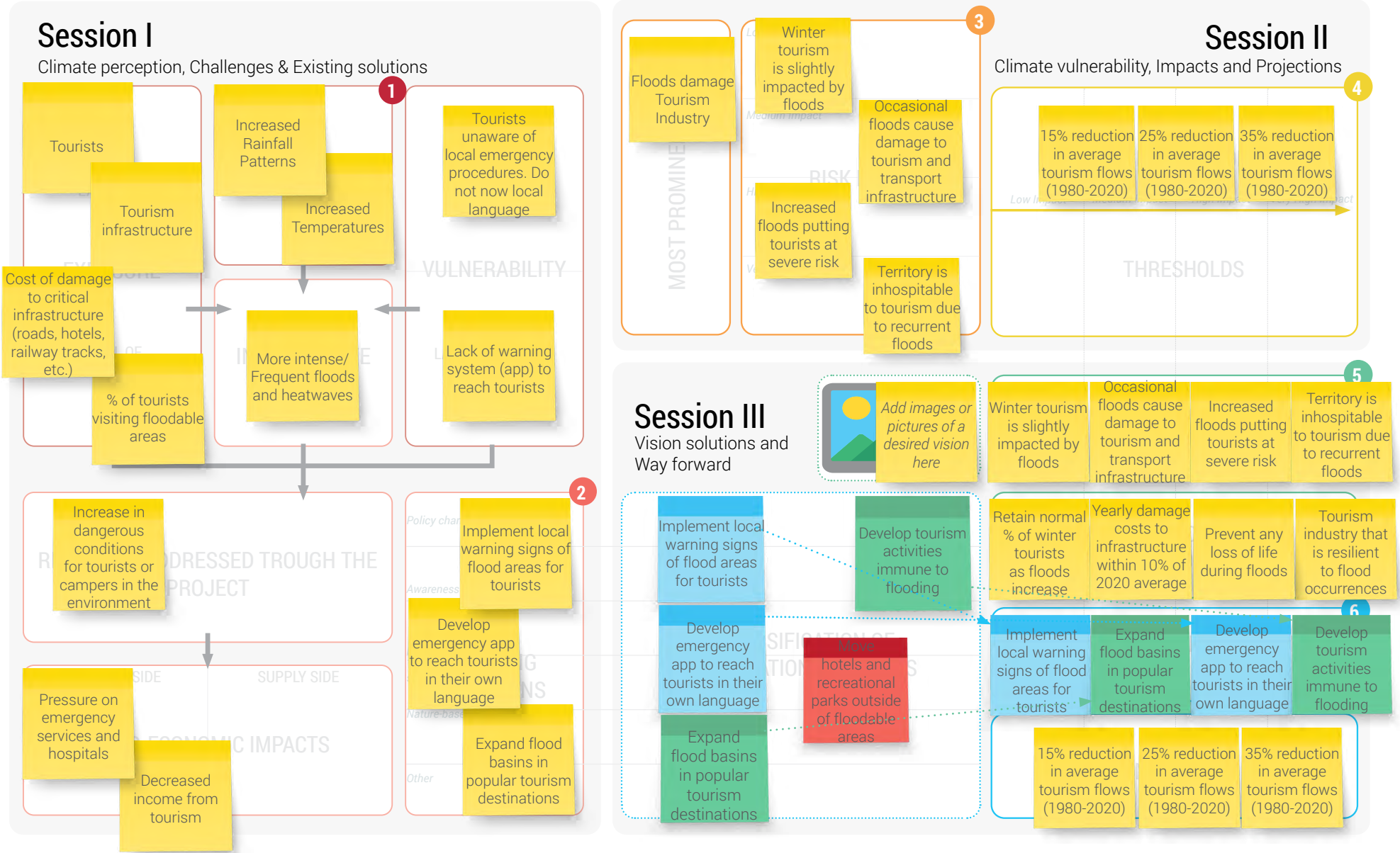
### Session I

Climate perception, Challenges and Existing solutions



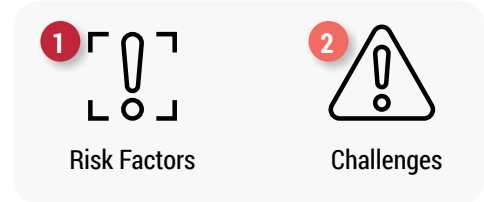
### 4.1.3. FULL EXAMPLE

This entire canvas will be explained in detail throughout the chapter.



## 4.2 SESSION I

### *Climate perception, Challenges & Existing solutions*



#### OBJECTIVES

- Identify the climate challenges and risks in terms of hazards, exposure, vulnerability, risk and socio-economic impact.
- Get to know the different participants of the region and their respective challenges.
- The results of the first session will serve as input for the second session, where a scientific layer will be added.
- Map existing solutions to the hazards identified, as well as promising solutions that could be investigated.

#### GUIDELINES

- As this will be the first group interaction with the local stakeholders, it can be interesting to offer them a recap of the TransformAr project.
- Provide an overview of the 3 program sessions to be planned, as well as a brief description of each. This will help them understand the purpose of some of the exercises.
- Allow everyone to introduce themselves (body they represent, function,...).
- Consider using a poll or other questionnaire tool to jump-start the conversation. Some examples of these tools are Mentimeter and Kahoot.
- Make sure to guide them during the canvas exercises, correcting course when they go off topic.

#### PROPOSED AGENDA



# *i* PARTICIPANT ENGAGEMENTS TOOLS

## ICEBREAKERS

An icebreaker seems silly, but it really works to build trust amongst the participants, especially if they are unfamiliar to each other.

- Take them through :
- Personal info
  - Anecdotes
  - Introductions

“People love to talk about themselves”



## DILEMMA QUESTIONS

Modify the questions to fit your particular territory or sector.

Would you rather deal with floods **OR** with droughts?



Would you rather keep doing the business as usual **OR** transform your practices?

Would you rather use the river for recreational purposes **OR** for economic profit?



## MEET & GREET

Allow each participant to introduce themselves, their company, function, as well as ask them to describe their particular sector in 1 word.

## MOTIVATION QUESTIONS



What is your motivation to join these sessions?

What is your motivation to learn more about Climate Adaptation?



## 4.2.1. BEFORE SESSION I BEGINS: EXPLAINING CLIMATE CHANGE

It is important to share some general insights with the participants on climate change before beginning the session. The session moderators have to incite participants to share their knowledge on the impacts of climate change, but this sometimes necessitates a general introduction as to what climate change is and an explanation of the general trends.

A few slides can be prepared by the organizers answering some of the following questions:

- What is climate change? What is the scientific evidence proving that the climate has been changing?
- What sectors have the highest emissions rates? What are the responses to address this global issue?
- What is the difference between climate change mitigation and climate change adaptation?

Remember, the stakeholders know their territory and region best, but this does not mean that the organizer should not prepare for the sessions with some general information related to the territory, its various economic sectors, its geography, etc. This will also help the organizer course-correct the discussion when the participants might be “derailing” off topic.





## CLIMATE CHANGE PERCEPTION QUESTIONNAIRE

In order to gauge the local perception of the participants several questions can be prepared on their region's vulnerabilities. These can be multiple choice, rating scale, or open-ended questions. These questions will help you select the sectors at risk to conduct the Session 1 Group Exercise with the canvas.

Local organisers can adapt the questions to their own territory in order to record the most appropriate climate change perceptions. The questions here below are examples and only indicative.

1

**Is the region already dealing with the impacts of Climate Change?**

*Yes/no question*

2

**What are the current and projected impacts and risks of climate change on your region?**

*Open question*

3

**What is in your opinion the most threatening climate change hazard in your territory?**

*Classify these hazards from the most threatening to the least threatening.*

4

**Which KCS is most at risk in the region?**

*Classify these sectors from ones that are most at risk to ones that are least at risk.*

5

**What increases the regions vulnerability to climate change?**

*Open question*

6

**Would the situation in the region worsen in the coming 10 years?**

*Yes/no question*

7

**What must be done to increase resilience and address climate issues?**

*Open question*

**Examples of hazards:**

- Extreme storm events
- Changes in rainfall patterns
- Sea level rise
- Droughts
- Temperature rise
- Heatwaves

**Examples of sectors:**

- Environment
- Agriculture
- Water
- Fisheries
- Health
- Infrastructure (electricity, transport, etc.)
- Tourism

**Examples of vulnerabilities:**

- Demographic factors (people with underlying health conditions etc.)
- Social factors (discrimination by gender/race, etc.)
- Economic factors (poverty, high unemployment rates, etc.)
- Physical factors (overconsumption of natural resources, etc.)
- Weak adaptive capacity (lack of warning systems, lack of awareness, etc.)

## 4.2.2. SESSION I GROUP EXERCISE:

### Risk components

For each Key Community System a sector-specific session will be organized. The objective is to identify the climate-related risks faced by a given sector. At the end of the exercise the participants will select a most prominent risk which they would like to see addressed by developing adaptation pathways.

The following slides will include some explanations on the Risk Chain (chain linking climate hazards, exposure, vulnerability, intermediate impact risk & socio-economic impacts), as well as the canvas components to be filled in.

### 1 RISK FACTORS

#### Hazards

Refers to climate-related physical events or their physical impacts, e.g., increase in temperatures, changes in precipitation patterns, droughts, heatwaves, etc.

#### Exposure

To develop a better understanding of exposure, one could determine the nature of exposure (in other terms, what is exposed..e.g., lands, people, hospitals/schools, etc.) as well as the level of exposure. The level of exposure presents a more quantifiable number applied to identified exposed subjects (e.g., area of land, number of people or % of people, nb of hospitals/schools etc.

#### Vulnerability

It is important to underline that to understand the vulnerability of the territory, it is crucial to understand the sensitivity of exposed elements/subjects as well as their adaptive capacity. What is the difference? Sensitivity considers the characteristic making a group or a structure vulnerable (age of the structure/people, economic status, etc.) while the adaptive capacity indicates the efforts taken/or not to limit vulnerability and increase resilience.



### 2 CHALLENGES

#### Intermediate Impact

Intermediate impacts determine how exposure and vulnerability come in play with climate hazards. E.g., the overflowing of rivers could lead to the flood of houses/structures/fields on riverbeds (exposed elements), and the impact would vary in function of the vulnerability of exposed elements.

#### Perceived Risks

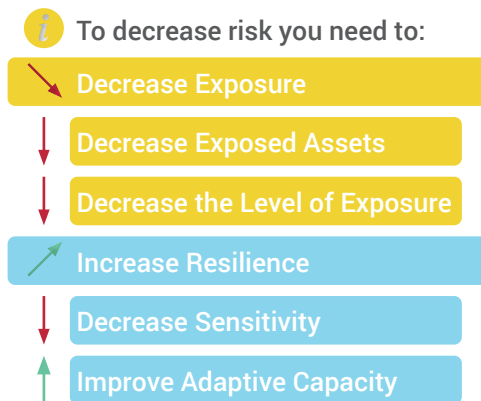
What risks are associated with the hazards and impacts? For instance, “Heavy Rainfall” leading to “Increased flooding” might exacerbate the Perceived Risk of “Waterborne & Infectious Diseases”.

#### Socio / Economical Impact

How will this impact economic indicators on demand and supply side, e.g., loss of production, increased insurance costs, etc.

#### Existing Solutions

What solutions exist, and which promising solutions could be envisaged for the future? Solutions can be classified in different ways, e.g., Technical, Nature-Based, Policy-Driven, etc.





# SESSION I - MAIN CANVAS

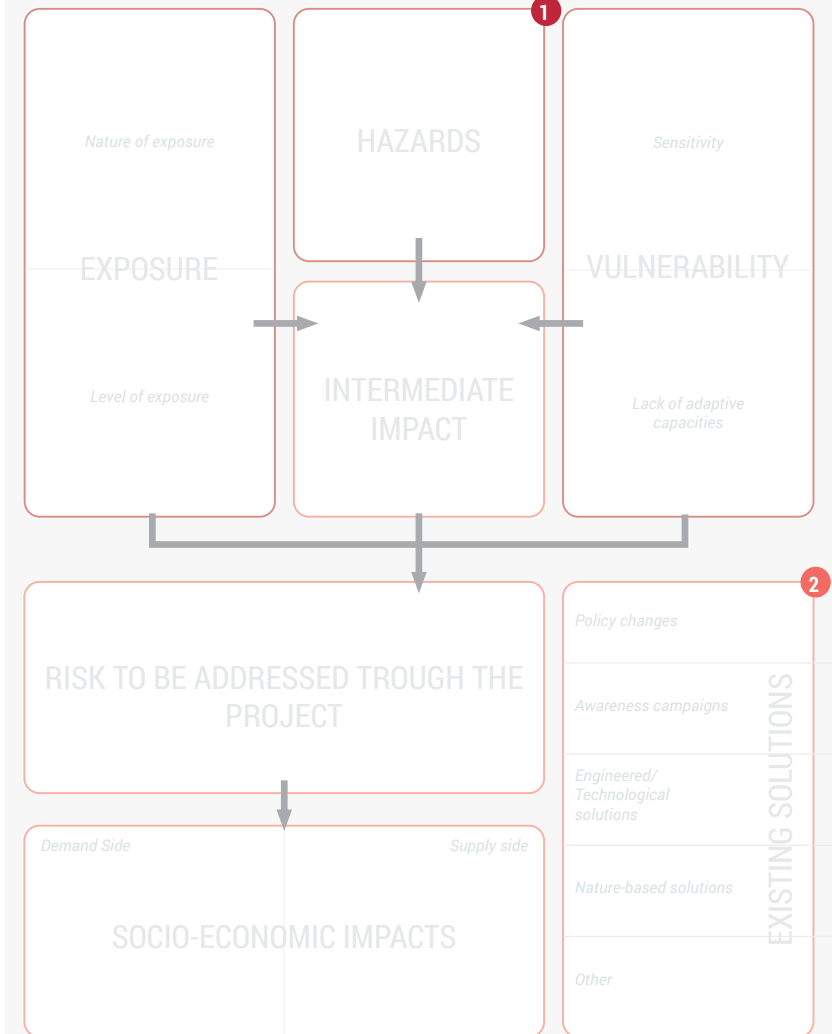
The workshop canvases as presented in the playbook can be recreated and duplicated for every session in whatever size or configuration necessary. You can work with print-outs and physical post-its if hosting a real life meeting. Alternatively, a collaborative online tool such as Mural, Klaxoon, Deskle, Miro etc. can be used which serves as a virtual whiteboard. You can then enlarge several blocks on these canvases to accommodate more virtual post-its, for instance. The canvases as presented here give a model of how the input can be collected.

The goal will be to use a complete canvas per identified sector (e.g. Water, Agriculture, Biodiversity, Tourism, etc.). The different sessions could be organized by sector. This would allow different stakeholders to discuss together. For example in the agricultural sector: workshop could bring together researchers or universities, farmers or other workers in the agricultural field, governors, dairy producers, investors, other actors in a larger supply chain or interested parties could be considered/invited to the workshop.



## Session I

Climate perception, Challenges and Existing solutions





### 4.2.3. EXPLANATION OF TOURISM EXAMPLE

Let us fill in the canvas with an example related to the tourism industry.

#### Hazards

The participants should try to identify climate hazards that may impact the tourism industry. Let's assume two hazards are identified: "Increased rainfall patterns" and "Increased temperatures". Both of these climate hazards will likely continue to intensify throughout the decades and impact the tourism industry.

#### Exposure

"Tourists" and "Tourism Infrastructure" could be seen as a nature of exposure, whereas the level of exposure could be a quantifiable number applied to these subjects. In our case, if people or tourists are affected, the level of exposure would relate to the % of people or tourists that usually visit an area that is now inaccessible due to flooding. For tourism infrastructure, it could relate to the damages incurred to transport networks or hospitality facilities due to flooding.

#### Vulnerability

How sensitive is our particular region when it comes to flooding, taking into account the nature of exposure (tourists & infrastructure)? We could mention that tourists are unaware of local emergency procedures in case of flooding, as these are not readily available or properly communicated. If a local language is not well-known by tourists, an additional problem may arise when trying to inform them of the possible dangers. Does the region have a proper adaptive capacity to respond to this vulnerability? Perhaps

they don't, as they have still not been able to develop a mobile application for tourists that would provide a clear early warning system, due to lack of funding.

#### Intermediate Impact

The intermediate impacts are determined by how exposure and vulnerability interact with climate hazards. In the case of increased rainfall and temperature, it naturally flows that more intense flooding and severe heatwaves could become more likely.

#### Perceived risks

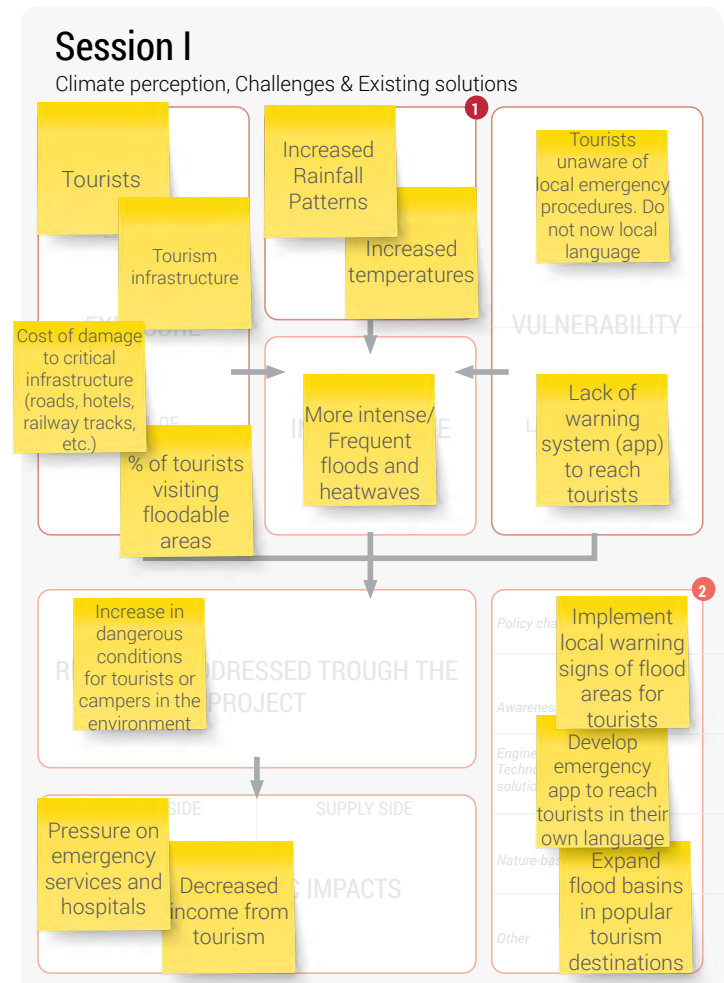
Which risks are perceived by the participants as a result of these impacts? The flooding will for example result in more dangerous conditions for campers that decide to pitch their tents in some of the areas at risk of flooding. It could also be that flooding will increase the likelihood of infectious waterborne diseases.

#### Socio-Economic Impact

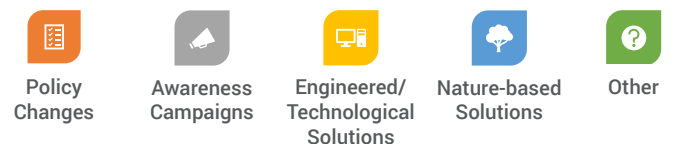
The Socio-Economic impact of the flooding and the subsequent decline in tourism activity might lead to a decrease in income for people reliant on the sector. This can have knock-on effects stretching wider into the local economy.

#### Existing Solutions/Promising Solutions

Perhaps there are a few measures in place already to cope with the perceived risks. What are they? Do they work? What new promising solutions could be envisaged? In our example, one idea could be to "expand flood basins in popular tourism destinations" to act as a buffer to future floods.



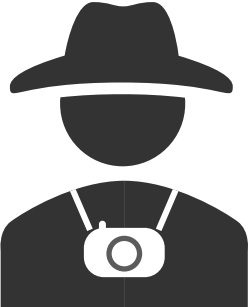
#### DIFFERENT TYPES OF MEASURES





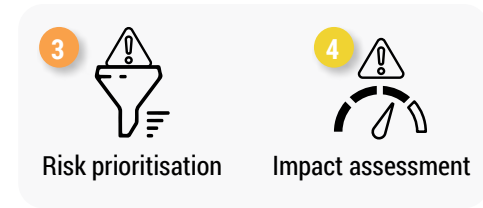
## SESSION I - CONCLUSION CANVAS EXAMPLE

After the Session is finalized the organizer can create a conclusion canvas that summarizes all risk components per sector. This will also serve as useful input for the following session. Example from previous real life session below.

	Hazards/Climate Impacts	Exposure	Vulnerability	Risks	Socio Economic Impacts
 <b>Tourism</b>	<ul style="list-style-type: none"><li>• Change in Rainfall Patterns</li><li>• Increased Temperatures</li><li>• ...</li><li>• ...</li></ul>	<ul style="list-style-type: none"><li>• % of People visiting floodable areas</li><li>• Number of Tourism destinations at risk in flooded areas.</li><li>• ...</li></ul>	<ul style="list-style-type: none"><li>• Tourists do not know local emergency procedures in case of flood. Extremely vulnerable. May not know local language.</li><li>• No robust early warning system (app) in place to reach tourists in case of emergency.</li></ul>	<ul style="list-style-type: none"><li>• More intense/frequent floods and heatwaves impacting tourists</li><li>• Increase in dangerous conditions for tourists or campers in the environment.</li></ul>	<ul style="list-style-type: none"><li>• Decreased income from tourism.</li><li>• Increased cost and pressure on emergency services and hospitals.</li></ul>

## 4.3 SESSION II

### Climate vulnerability, Impacts and Projections (based on scientific evidence)



For the organization of this session it is advised to collaborate with scientists and researchers that have the scientific knowledge on the impacts of climate change on the territory. For the TransformAr project we resorted to scientists and climate experts such as ACTERRA, CMCC, PIK and E3M.

The experts presented climate models, figures, maps, projections of hazards, clarified intermediary impacts of CC as well as their socio-economic ramifications on various sector. The collaboration with local universities and research centers is advised.

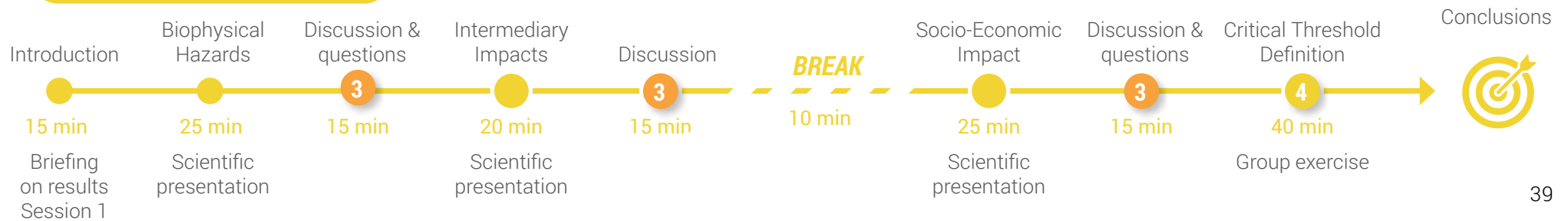
#### OBJECTIVES

- During session 2 we will explore what kind of scientific information we can find on the aspects identified in the first session.
- The goal is to substantiate these aspects with available scientific knowledge and information.
- From this information, the most prominent risks and risk levels for the region can be drawn in scientific manner.
- A next objective is to determine the risk impact and threshold values of identified climate change hazards.
- The second session adds a scientific layer to the first session. It either confirms or not the findings of the first session. This is crucial to give ground for a solid discussion and proposal of sound solutions.

#### GUIDELINES

- There will be 3 time slots foreseen of about 20 - 25 minutes where the climate experts share their insights.
- After every presentation, there will be an opportunity for participants to ask questions.
- It is up to the climate experts to process the conclusions from the first session into scientific region-specific data.
- Take sufficient preparation time between sessions 1 & 2 to translate general climate data into region-specific data.
- Keep in mind that the session participants are usually not climate experts nor have the same knowledge.
- Try to make the information as simple and understandable as possible: Consider using clear graphs, maps on which zones are marked, evolutions over time, infographics, and so on.

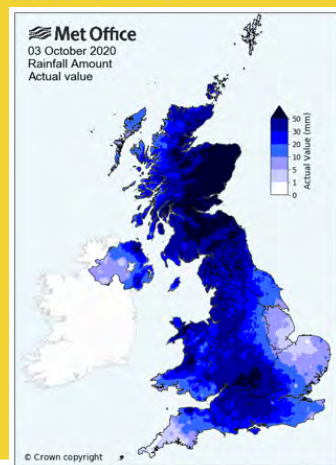
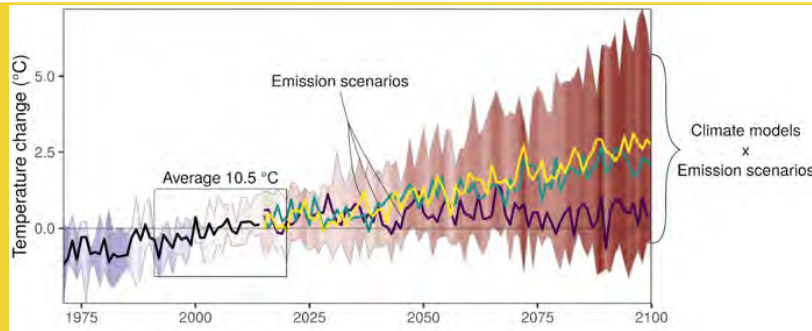
#### PROPOSED AGENDA



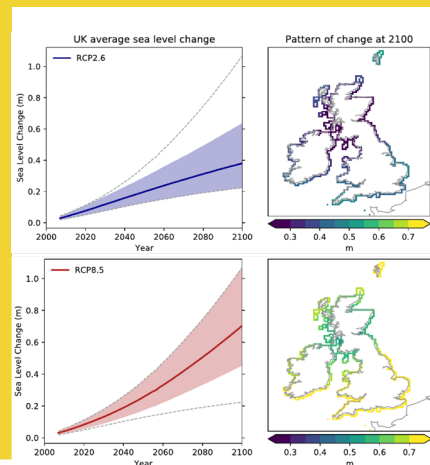
### 4.3.1. OVERVIEW OF 3 SCIENTIFIC FOCUS AREAS

For this part of the session, scientists are invited to present maps, projections, and climate data that are particular at the scale of the territory. Some data could be found on existing local, European, or international climate and adaptation platforms such as

Copernicus, Climate Adapt, among others. A list of adaptation platforms can be found [here](#). The use of existing data avoids “re-inventing” the wheel.



Source: Christidis et al. (2021).

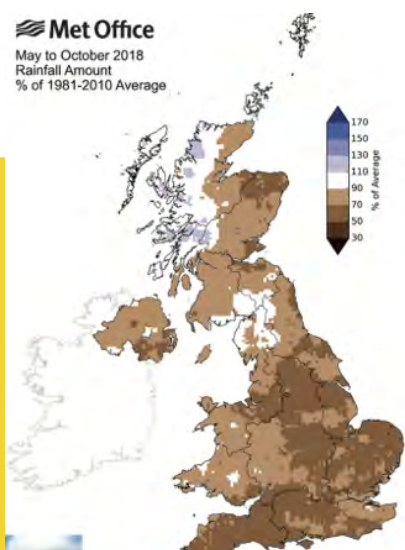


Source: Met Office UK, 2018, UKCP18 Factsheet: Sea level rise and storm surge

### BIOPHYSICAL HAZARDS

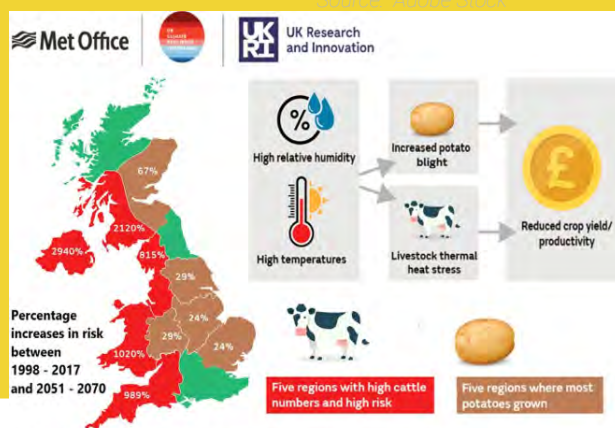
- Within the scientific presentation of biophysical hazards of climate change it is important to present the data in such a way that makes practical sense to the local stakeholders.
- For example, when showing graphs on projected temperature increases, one could highlight that these might also manifest as significantly lower temperatures during winter. Similarly, variation in rainfall projections might not only increase risks of flooding in winter, but might increase droughts in summer.
- The goal is to use the scientific projections as a tool to predict what kind of changes will occur in the specific region in the future (e.g. change in precipitation, temperature, etc.)
- However, given that some data is outdated, or at a regional scale and not specific/particular to a given territory, scientists and experts should produce new models and knowledge at a territorial scale.
- At the end of the presentation, a quiz can be included to determine how much of the information have participants remembered or a Q&A session could be organised to keep participants engaged.

Images and graphs above are examples. It is important to always share an explanation or legend to explain what the trends mean. The intention of this session is to make scientific knowledge public and at the use of key local stakeholders.



## INTERMEDIARY IMPACTS

- Within the scientific presentation of intermediary impacts of climate change it is important to present the data in such a way that makes practical sense to the local stakeholders.
- When presenting intermediary impacts it is important to consider how hazards could impact exposed sites, infrastructure system or people. Factors that make these sites, infrastructure systems or people more or less vulnerable should also be considered.
- The presentation should offer an overview of the possible impacts for each identified sector, taking into account the projections and hazards offered in the first presentation (Biophysical Hazards). E.g. extreme rainfalls could lead to floods if the surface is not permeable. (in other terms, territories that are covered with hard surfaces are more exposed) E.g. increased temperatures coupled with dense concentration of buildings, pavements and other surfaces that trap heat could lead to and intensify the urban heat island effect.
- At the end of the presentation, a quiz can be included to determine how much of the information have participants remembered or a Q&A session could be organised to keep participants engaged



Using UK Climate Projections Regional 12km product under a high emissions scenario.  
Source: Met Office UK, 2018

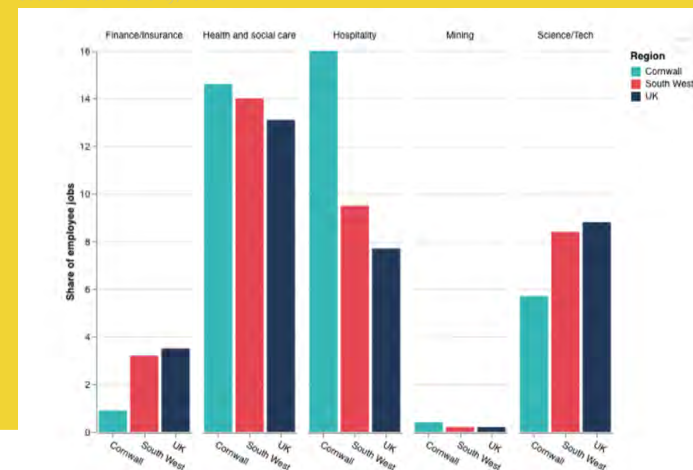
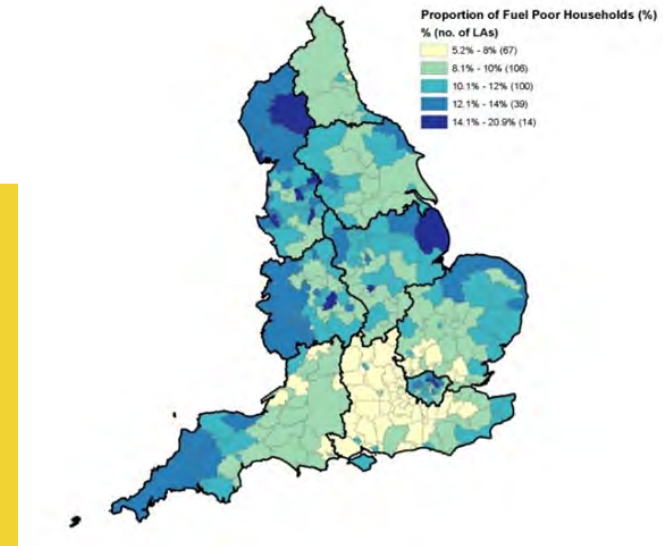
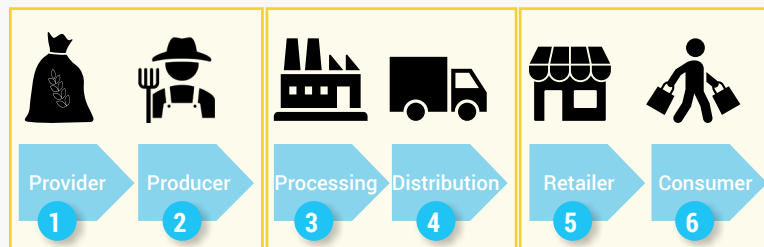
Images and graphs above are examples. It is important to always share an explanation or legend to explain what the trends mean. The intention of this session is to make scientific knowledge public and at the use of key local stakeholders.



This presentation completes the previous one as it details the ramifications of the intermediary impact on a specific sector and its socioeconomic ramifications.

## SOCIO-ECONOMIC RAMIFICATIONS

- Within the scientific presentation of socio-economic ramifications it is important to present maps and diagrams showing climate-related socio-economic data in such a way that makes practical sense to the local stakeholders.
- For example, people with low income could be more vulnerable to climate change as they can have limited investment capabilities to increase their adaptive capacity. Maps could be added showcasing the concentration of people with low income.
- Statistics could be provided showing the proportion of people living in fuel poverty (e.g., these people can't have adequate cooling or heating making them more vulnerable to extreme weather events)
- Statistics or figures could be provided on the contribution of the sector to GDP, this allows to visualize how the GDP could be impacted if the sector is impacted to climate change.



Source: Economic observatory, 2021

Images and graphs above are examples. It is important to always share an explanation or legend to explain what the trends mean. The intention of this session is to make scientific knowledge public and at the use of key local stakeholders.

### 4.3.2. SESSION II GROUP EXERCISE:

#### Definition of most prominent climate risk, risk levels, respective indicators and critical thresholds

The objective of Session 2 is to map the most prominent climate risks as identified throughout Session 1, how that climate risk is likely to evolve (Risk Level) in terms of impact, and what indicators (quantitative, qualitative) might be identified that can serve as a critical threshold to determine the evolution of the risk impact. To do so,

the moderator could refer to the risks evoked in the risk chain (session I), workshop participants would have to agree on (e.g., voting process) the most prominent risk to be addressed. Use one canvas per sector. In this example canvas, the impact on the tourism sector is shown.

### 3 RISK PRIORITIZATION

**Most Prominent Climate Risks**

What are in your opinion the most prominent climate risks considering presented projections/hazards? To develop adaptation pathways it would be better to focus on one prominent risk, this allows for proposing adequate, specific and focused adaptation measures in response.

**Risk Levels**

How is the risk level likely to evolve across different impacts? E.g. What outcome(s) do you consider as low, medium, high or very high risk?



### 4 IMPACT ASSESSMENT

**Climate Risk Indicator**

Which indicator would you consider as one that determines the evolution of risks (quantitative, qualitative)? I.e., What value/characteristic allows to determine that the risk could become more intense and go from low to medium, from medium to high, and from high to very high.

**Critical Thresholds**

Critical thresholds usually overlaps with the risk indicator. It determines the passage from one risk level to another and the need for additional measures to adapt to climate change.





## SESSION II - MAIN CANVAS



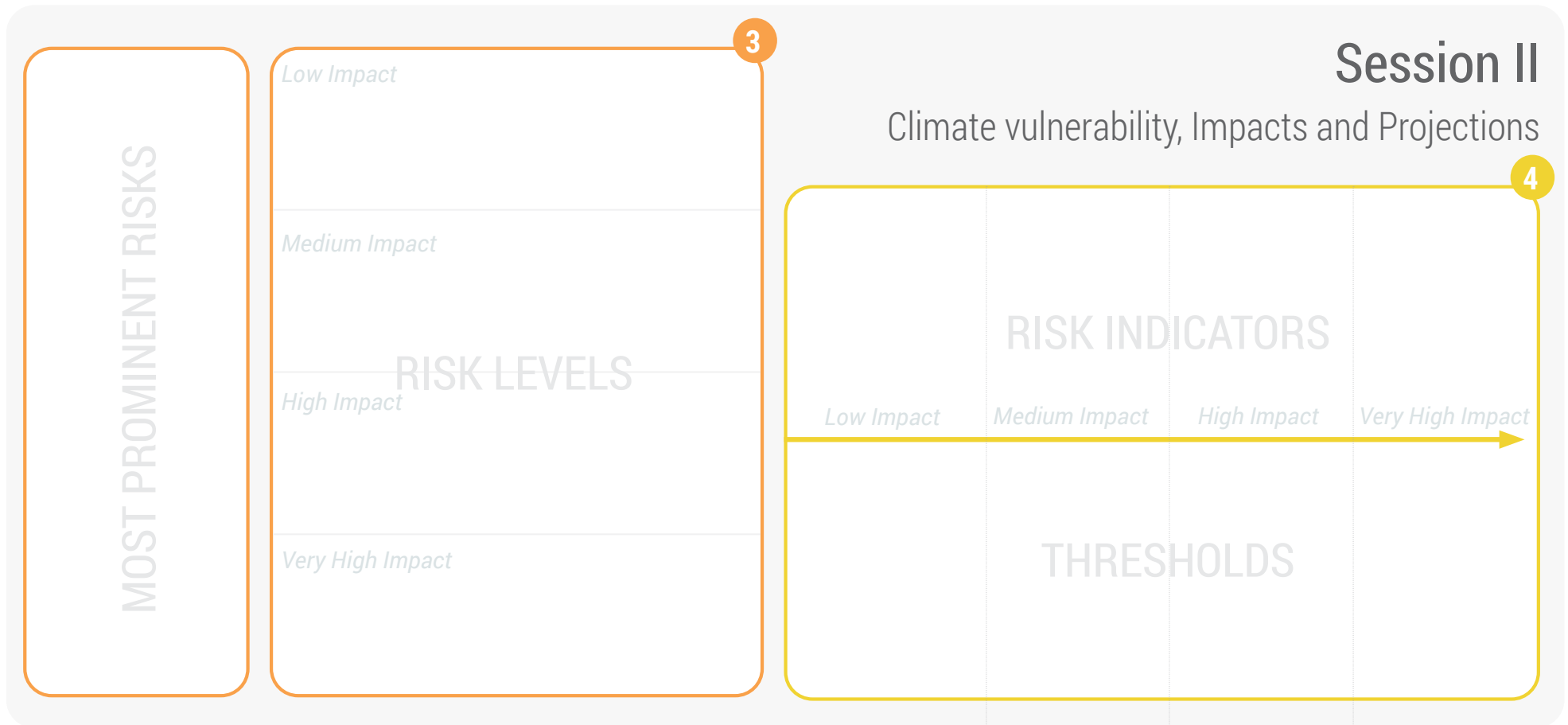
Risk prioritisation



Impact assessment

The workshop canvases as presented can be recreated and duplicated for every session in whatever size or configuration necessary. You can work with print-outs and physical post-its if hosting a real life meeting. Alternatively, a collaborative online tool such as Mural, Klaxoon, Deskle, Miro etc. can be used which serves as a virtual whiteboard. You can then enlarge several blocks on these canvases to accommodate more virtual post-its, for instance. The canvases as presented here give a model of how the input can be collected.

The goal will be to use a complete canvas per identified sector (e.g. Water, Agriculture, Biodiversity, Tourism, etc.). The different sessions could be organized by sector. This would allow different stakeholders to discuss together. For example in the agricultural sector: workshop could bring together researchers or universities, farmers or other workers in the agricultural field, governors, dairy producers, investors, other actors in a larger supply chain or interested parties could be considered/invited to the workshop.





### 4.3.3. EXPLANATION OF TOURISM EXAMPLE

Going back to our tourism example, we can fill in the different sections of the canvas.

#### Most Prominent Risks

Let us complete the sections for one identified prominent risk such as “Floods damage tourism industry”.

#### Risk Levels

Next, we evaluate how this risk could evolve over time in terms of its level of impact. One could say that a low impact could mean a slight reduction in tourists arriving in the winter season, when floods

are more prominent. As we move up to a medium impact we can expect floods to also start damaging important tourism infrastructure such as roads and railway networks, further reducing the number of tourists that come to the region. At a very high risk impact, in a worst case scenario, the territory could even become inhospitable to any tourism activity.

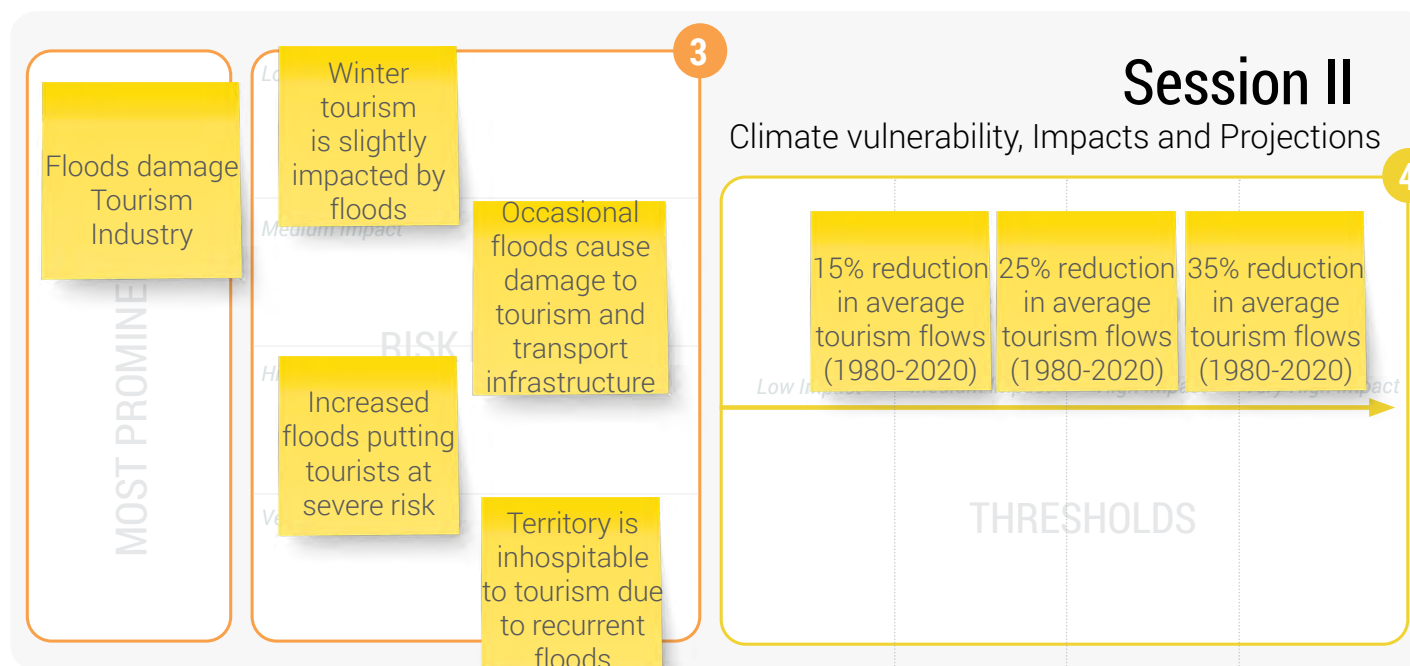
#### Risk indicators

However, we also want to understand which parameters could serve as measurable indicators that lead us from one impact level to another. In our example, we use a % reduction in tourism

activity compared to a benchmark average figure. This gives a quantitative tipping point to assess when the risk falls over into a higher risk category. Alternative indicators can also be proposed, such as “number of severe floods per year”, or “total amount of economic damage incurred by floods per year”. Choosing an appropriate indicator might be dependent on the information available within the region.

#### Thresholds

Threshold indicators could be both qualitative and quantitative.





## SESSION II - CONCLUSION CANVAS EXAMPLE

After the second session is finalized the organizer can create a conclusion canvas that summarizes all risk components per sector. The canvas allows to present a

summary of the results, and to kick off the following session. Partial example below based on our tourism sector example.

### Addressed climate-related risk: Degradation of tourism industry due to floods



Tourism

#### Degradation of tourism industry leading to:

- Reduced number of tourists during winter season

#### Degradation of tourism leading to:

- Floods causing damage to tourism infrastructures (e.g. hotels, restaurants, etc.) and transportation systems

#### Degradation of tourism leading to:

- Recurrence of floods is putting tourism infrastructure and the health of tourists at severe risk

#### Degradation of tourism leading to:

- Territory inhospitable to any tourism activity because of highly recurrent floods and is no longer an economically viable endeavor to pursue

15% reduction in average tourism flows (1980-2020)

15% reduction in average tourism flows (1980-2020)

15% reduction in average tourism flows (1980-2020)

Low

Medium

High

Very High

Risk outcome (evolutions)

## 4.4 SESSION III

### Vision, Solutions an Way Forward (Construction of Adaptation Pathways)

5  
Envisioning

6  
Measures

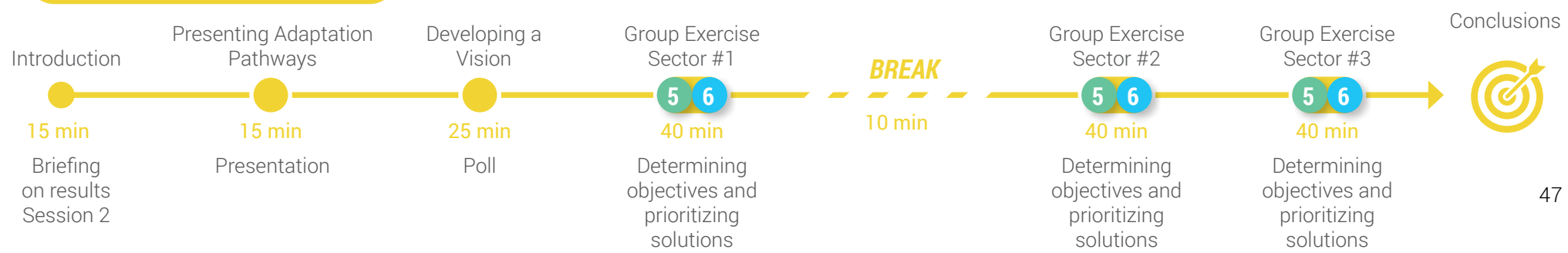
#### OBJECTIVES

- Session 2 identified the most prominent risk, the different risk levels, indicators and respective thresholds based on the knowledge of local stakeholders of their territory and presented scientific data on climate impacts.
- During Session 3 we will explore the vision and adaptation pathways for the region, the different solutions and the way forward.
- The goal is to develop a vision for the desired future and align adaptation response measures with this vision.
- The participants should be given an overview of the concepts of transformative adaptation, to understand the framework which will enable them to complete the exercises and transform their practices, instead of finding coping solutions.
- Once the vision is defined, the adaptive measures can be chosen from the different solution catalogue (policy changes, awareness campaigns, engineered / technological solutions, nature-based solutions, etc.) so we can emphasize and valorise the deliverable.
- The goal is to develop an adaptation pathways map **specific for a sector**, laying out solutions to address the most prominent risk.

#### GUIDELINES

- Based on the agenda / order of the day you can determine the different topics to work on in session 3.
- Present the results of session 2 to get the participants back on topic.
- Inform participants on the principles and interest of developing adaptation pathways.
- Given that the 3rd session is very strategic and vision driven you need to inspire the participants to think outside the box.
- To be well prepared for the 3rd session, it is important to present some solutions and ways forward to trigger the discussion
- To select corresponding solutions or measures, you may access the catalogue of solutions prepared by ACTERRA to be found in the TransformAr website.
- Solutions should be laid out based on priorities, risk levels, durability and feasibility of the solutions. When laying out the solutions, please consider critical thresholds.

#### PROPOSED AGENDA



## 4.4.1. ADAPTATION PATHWAYS EXPLAINED

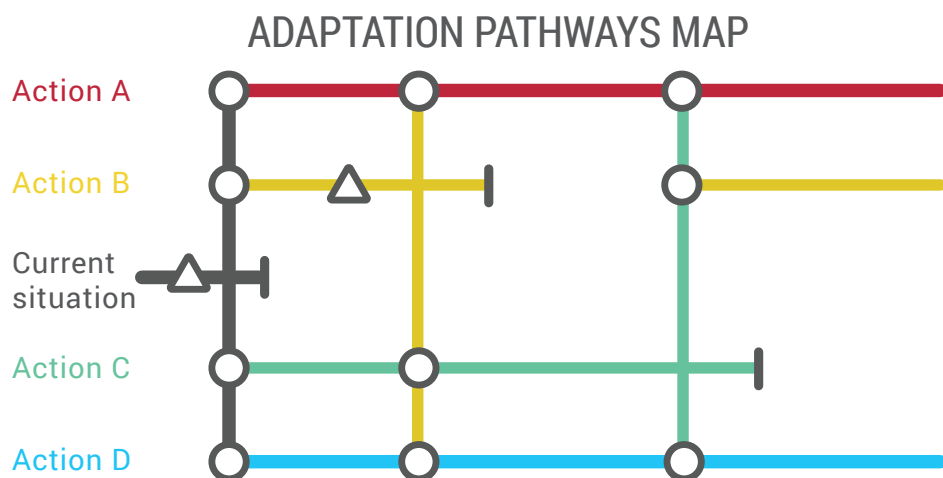
It is important to prepare some slides on adaptation pathways and perhaps some real life examples or analogous visual aids. It will help the participants grasp the concepts before moving onto the exercise.

### CORE CONCEPTS

- Adaptation Pathways are an emerging concept.
- They are sequences of actions, which can be implemented progressively **depending on future dynamics**.
- It addresses one of the major issues faced by decision-makers → Climate Change Uncertainty.
- There is no clear/common approach to the development of pathways. → It is a **context and stakeholder driven approach**

### KEY INGREDIENTS

- **To plan ahead:** assessment of options based on feasibility & availability of resources.
- **To identify adaptation tipping points:** An adaptation tipping point is reached when the magnitude of external change is such that a policy response no longer meets its objectives.
- **To monitor critical developments:** start from the premise that policy responses have an expiration date.



**Action A&D:** Robust action but require large capital or would have ramifications on social/economic systems. (e.g. elevating roads/houses).

**Action B:** Short term action - easily implemented/allow to buy us time but do not have a long shelf life. (e.g. installation of booster pumps to improve drainage capacity).

**Action C:** Medium term action

- Policy action effective
- Transfer station to new policy action
- | Adaption tipping point of a policy action (terminal)
- △ Decision node

Figure 8 - Adaptation Pathways Map

Ref: Zandvoort et al. (2017): Adaptation pathways in planning for uncertain climate change: Applications in Portugal, the Czech Republic and the Netherlands. Environmental Science and Policy 78 (2017) 18–26.



## DEVELOPING A VISION (POLL)

Many examples could be considered for creating a vision (e.g. polls, moodboards, word storms, games, etc.). Shown below is the example of a poll. In order to get a first indication of the group's priorities, a poll can be prepared with a few questions that will

aim to identify the overall direction envisioned by the participants. This can also serve as a first moment of discussion before proceeding to the exercises.

1

**What do you think your region or sector will look like in 50 years, in light of climate change, if we consider a business-as-usual scenario?**

*Open answer*

2

**What visions do you have of what would be desirable in the possible evolutions of this region or sector in the coming decades?**

*Open answer*

3

**Select 2 visions that you think should be prioritised for the sector in your region.**

*Multiple choice to be set up by organizer*

4

**What are the transformations needed to move towards your desirable vision, or avoid what you consider unacceptable in the long term?**

*Prepare a list to classify from most preferred to least preferred option (e.g. Societal, Political, Legal transformations, etc.)*

### Example of transformations:

- **Societal Transformations:** *Changing cultures, opinions and attitudes*
- **Political Transformations:** *Political reforms/policy changes*
- **Legal Transformations:** *Environmental regulations, laws and regulatory bodies*
- **Technological Transformations:** *Research and development, IT, Technological development, automation, etc.*
- **Economic Transformations:** *Moving labor and other resources from lower- to higher-productivity sectors/Changing economic growth patterns*
- **Environmental Transformations:** *Environmental management, Nature protection, etc.*

***"We can't solve problems by using the same kind of thinking we used when we created them."***

*- Albert Einstein*

## 4.4.2. SESSION III GROUP EXERCISE

### Determining objectives and prioritizing solutions

Session 3 will use collected information from the previous sessions to select a number of promising climate adaptation solutions. The most prominent risk identified in Session 2 for a specific sector (such as soil degradation impact on agriculture, etc.) will be matched with a defined objective (desired outcome) for that impact level. A range of solutions, identified from the catalogue of solutions, will be classified by participants as “Great”, “Okay” or “inappropriate” measures. This classification permits to determine

their preferences and their acceptability of the measures. In this context it is important to underline that some adaptation solutions work in a territory, but not in another one. Thus the importance of developing and implementing tailor-made solutions. Once the solutions are classified, the “good” climate adaptation solutions will be considered for the development of adaptation pathways. The solutions need to match the desired outcome, and should be placed in respect with determined risk levels.

## 5 ENVISIONING

### Moodboards (Vision)

If working online, this section can be filled with images depicting a Utopian or Dystopian future related to the climate risk identified. This can spark a discussion or help visualize the issue at hand. If in person, photos can be distributed to participants and they can classify them as “utopia (desired vision) or dystopia (undesirable vision)

### Climate Risk Levels

Risk levels are to be presented as defined in Session II.

### Climate Desired Outcomes

The participants will define objectives and desired outcomes that align with their long-term vision for a better future.



Figure 9 - Example of a moodboard

## 6 MEASURES

### Classification of solutions

The organizer will pre-populate this with measures taken either from the catalogue of solutions or will allow the participants to propose their own. These will then be classified by color (Green/Blue/Red) into better or worse measures. If working online this can be done by changing the color of the sticky note in the chosen application, if working physically a colored marker can be used.

- Good (Green): This measure has the potential to transform the sector.
- OK (Blue): This measure could be implemented when necessary.
- Inappropriate (Red): Does not correspond to the challenges of the territory.

### Durability/viability of climate adaptation solutions

Place the measures identified in the catalogue section into the appropriate column so that it aligns with the desired outcome and corresponding risk level. By mapping different measures across the risk level impacts, we can start building the first steps towards an adaptation pathway for that particular risk.

### Indicators

Indicators are determined through discussions between scientists and local stakeholders. For instance, if local stakeholders believe that soil erosion in light of climate change is a critical concern, it is important to understand what this risk leads to, to determine the right indicator. Concretely, if soil erosion impacts crop productivity, the latter could be a good indicator. Yet, it is essential to ask questions like: *how do we monitor? Do we have the data? Do we consider annual crop-based income as an indicator for crop productivity?* Other indicators could also be considered (e.g., soil nutrients content, water storage capacity, etc.)

### 4.4.3. MALADAPTATION

*During the stage of identifying adaptation measures, developing adaptation pathways, and selecting a preferred adaptation pathway, it is important to ensure that the actions retained do not present maladaptation characteristics. It is crucial to carefully evaluate*

*adaptation measures, considering their context-specific implications, potential trade-offs, and long-term sustainability to avoid unintended consequences and ensure effective and resilient responses to climate change.*

#### What is maladaptation?

Maladaptation to climate change refers to the implementation of measures or strategies intended to address the impacts or risks associated with climate change that ultimately lead to negative or unintended consequences. It occurs when adaptation efforts, instead of effectively reducing vulnerability and increasing resilience, inadvertently exacerbate existing problems or create new ones in the same or other regions, systems, sectors, or social groups than those targeted by the adaptation action.

#### Examples of maladaptation

Here are some examples of maladaptation actions:

- Investing heavily in energy-intensive air conditioning systems to cope with rising temperatures without simultaneously implementing energy efficiency measures or promoting sustainable alternatives will exacerbate greenhouse gas emissions and contribute to further climate change and the urban heat island effect.
- Using of tree species with high water requirements as a solution to cool the city in water stressed region.
- Expansion of water-intensive agriculture to cope to climate change in water-stressed regions.
- The use of snow cannons by ski resort to cope with reduced snow cover that requires large quantities of water and can therefore jeopardize local water resources.

- Development of irrigation using water from a river upstream to cope with water shortages due to climate change, leaving less water available for other inhabitants downstream.
- Relocation of a village without taking social and cultural aspects into account in order to avoid exposure to potential disasters caused by extreme climatic events linked to climate change.
- Construction of seawalls without considering coastal ecosystems.
- Intensive use of pesticides to protect crops from pests linked to climate change that can have harmful effects on human health and biodiversity.

#### How to avoid maladaptation actions?

The Playbook does not develop a specific method to address maladaptation, but you can refer to existing methods, approaches, and tools to help you.

[The REGILIENCE self-assessment tool](#) to spot risks of maladaptation is one of them.



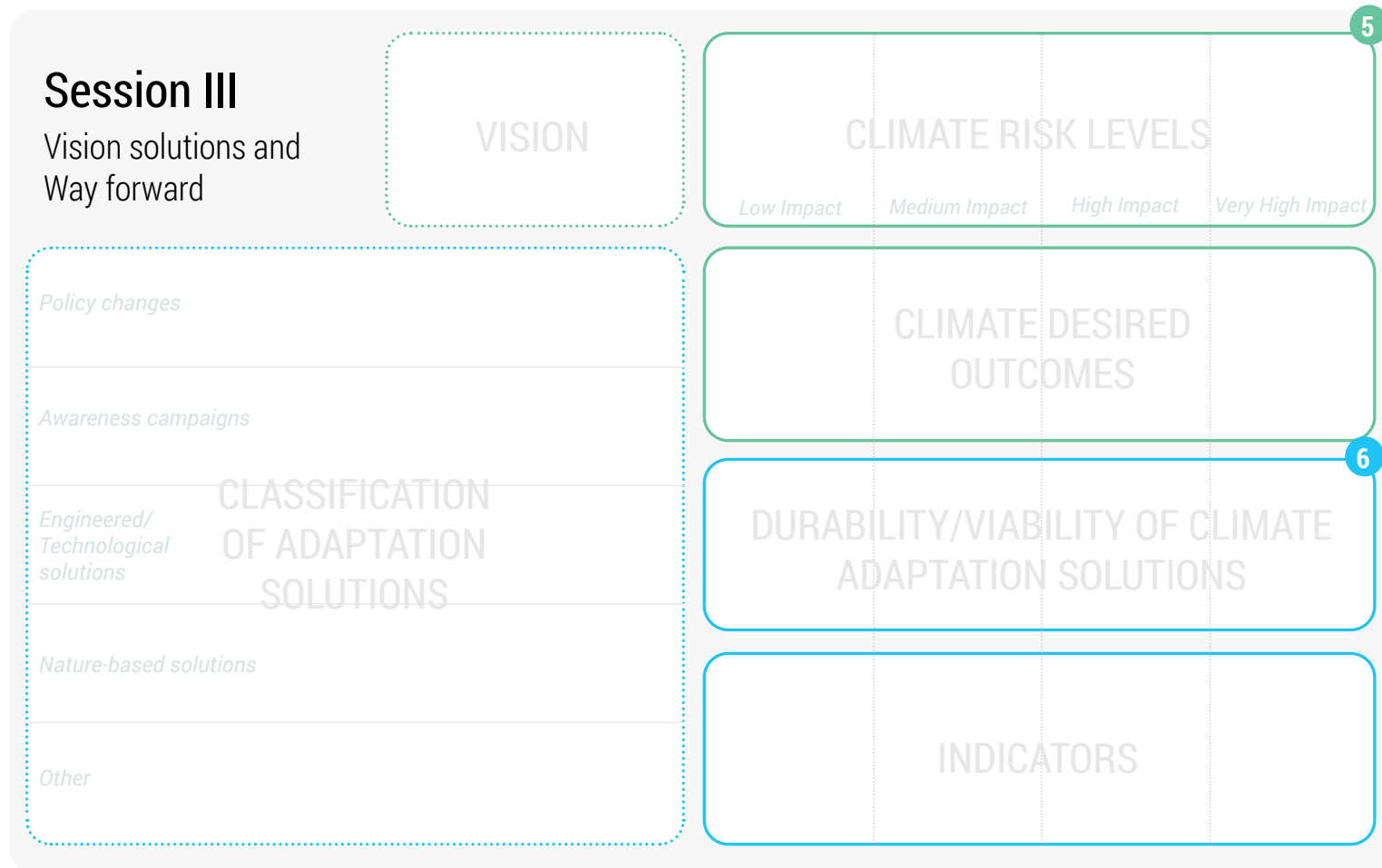


## SESSION III - MAIN CANVAS

The workshop canvases as presented in the playbook can be recreated and duplicated for every session in whatever size or configuration necessary. You can work with print-outs and physical post-its if hosting a real life meeting. Alternatively, a collaborative online tool such as Mural, Klaxoon, Deskle, Miro etc. can be used which serves as a virtual whiteboard. You can then enlarge several blocks on these canvases to accommodate more virtual post-its, for instance. The canvases as presented here give a model of how the input can be collected.



The goal will be to use a complete canvas per identified sector (e.g. Water, Agriculture, Biodiversity, Tourism, etc.). The different sessions could be organized by sector. This would allow different stakeholders to discuss together. For example in the agricultural sector: workshop could bring together researchers or universities, farmers or other workers in the agricultural field, governors, dairy producers, investors, other actors in a larger supply chain or interested parties could be considered/invited to the workshop.





## 4.4.4. EXPLANATION OF TOURISM EXAMPLE

### Moodboards (vision)

If being conducted online, images of tourist destinations under water or destroyed infrastructure can be copied here to elicit a response or discussion. If conducted in person, images can be printed out and participants can be asked to place pictures on 2 boards “desired vision” or “undesired vision”.

### Climate Risk Levels

In the case of our tourism example, we reuse the output from Session 2 where we had identified risk levels and some of the consequences they lead to.

### Climate Desired Outcomes

The participants will define objectives based on the risks mentioned right above. If we look at the High Impact of floods leading to the health of tourists being at severe risk, a simple desired outcome or objective aligned with this would be to take measures to “prevent any loss of life”.

### Classification of Adaptation Solutions

The solutions listed here can be edited or added upon by the participants. As stated above the goal will be to first classify these as useful solutions or not. In our tourism example we can see that one measure has been listed as Red: “Move hotels and recreational tourism parks outside of floodable areas”. This means that the participants found this measure to be economically unfeasible, too difficult to implement, or not relevant for the region. However this could be a good transformative action even if dismissed by participants. Stakeholders sometimes select “safe” measures that are easy to implement which are not necessarily the ones most interesting for the development of transformational adaptation pathways. But the classification permits to identify

social acceptability nonetheless. On the other hand, the measure “Expand flood basins in popular tourism destinations” has been listed as good in green. This probably means that the participants believe too little investment in flood basins has already been conducted in their region, at that these infrastructure actions could alleviate some of the long term flooding issues in their specific region.

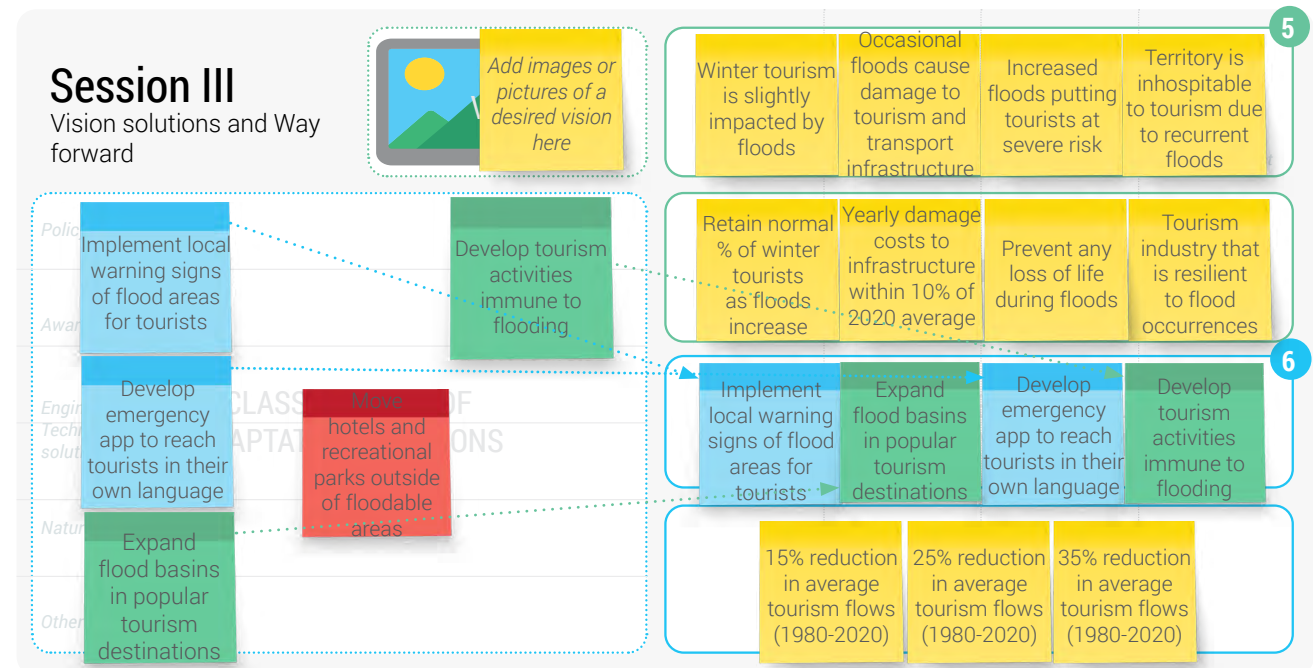
### Durability/viability of Climate Adaptation Solutions

Next up is to place the coloured measures from the catalogue to the actual column where it fits best as a solution. In our tourism example, that saw a “severe risk for tourists”, with a desired outcome to “prevent

any loss of life”, the measure “Develop emergency app to reach tourists in their own language” has been placed. This creates a direct link between identified, risk, desired outcome, and actionable solution.

### Indicators

The threshold values here for our tourism example come from the previous session, where we had indicated a “% reduction in average flow from tourists” as the indicator that marks the tipping points between the different risk levels. Alternative indicators can also be proposed, such as “number of severe floods per year”, or “Total amount of economic damage incurred by floods per year”.

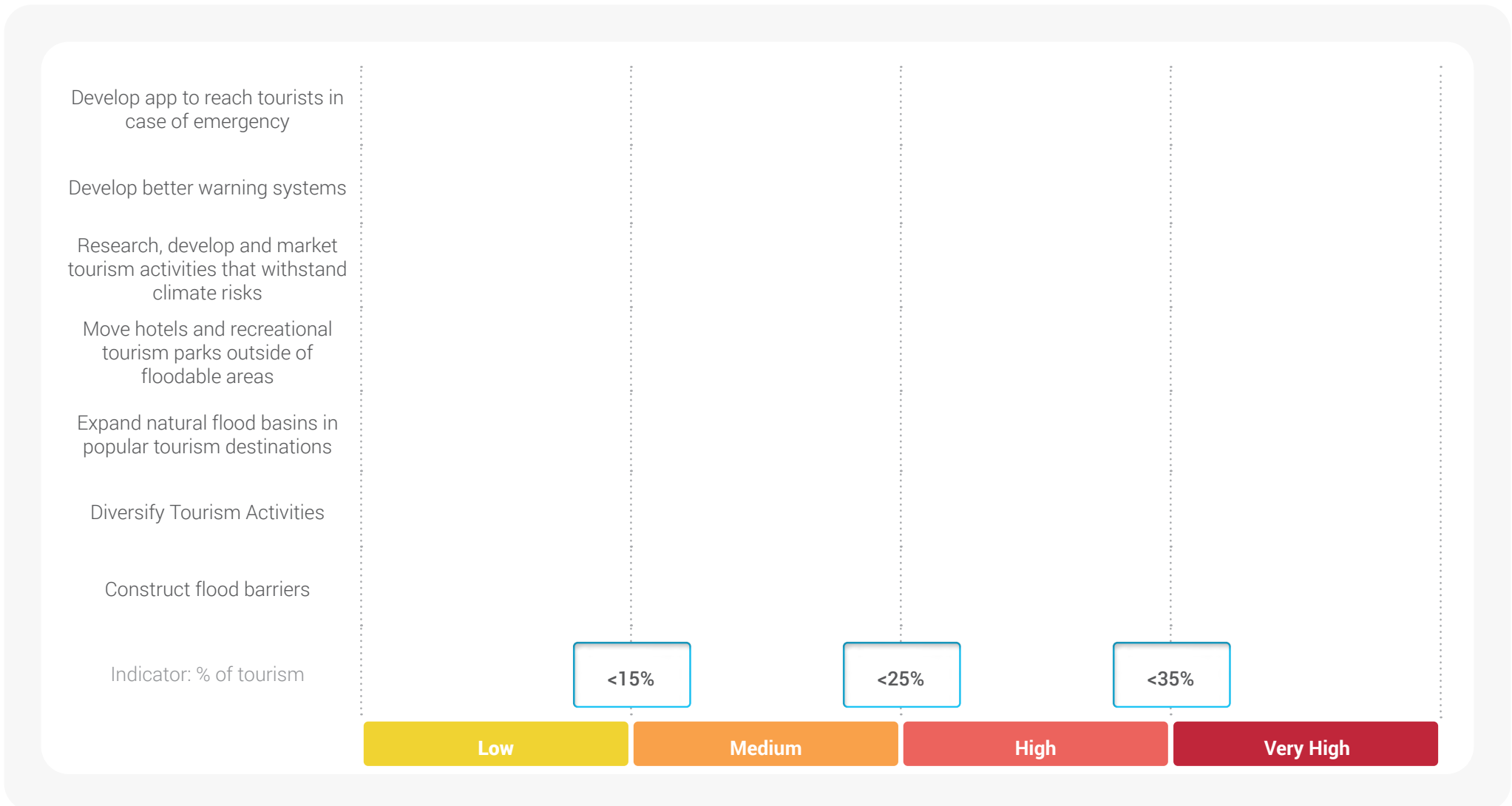




## SESSION III - CONCLUSION CANVAS EXAMPLE (1/6)

Based on the results of the workshops, adaptation pathways could be graphically presented as shown on the following pages.

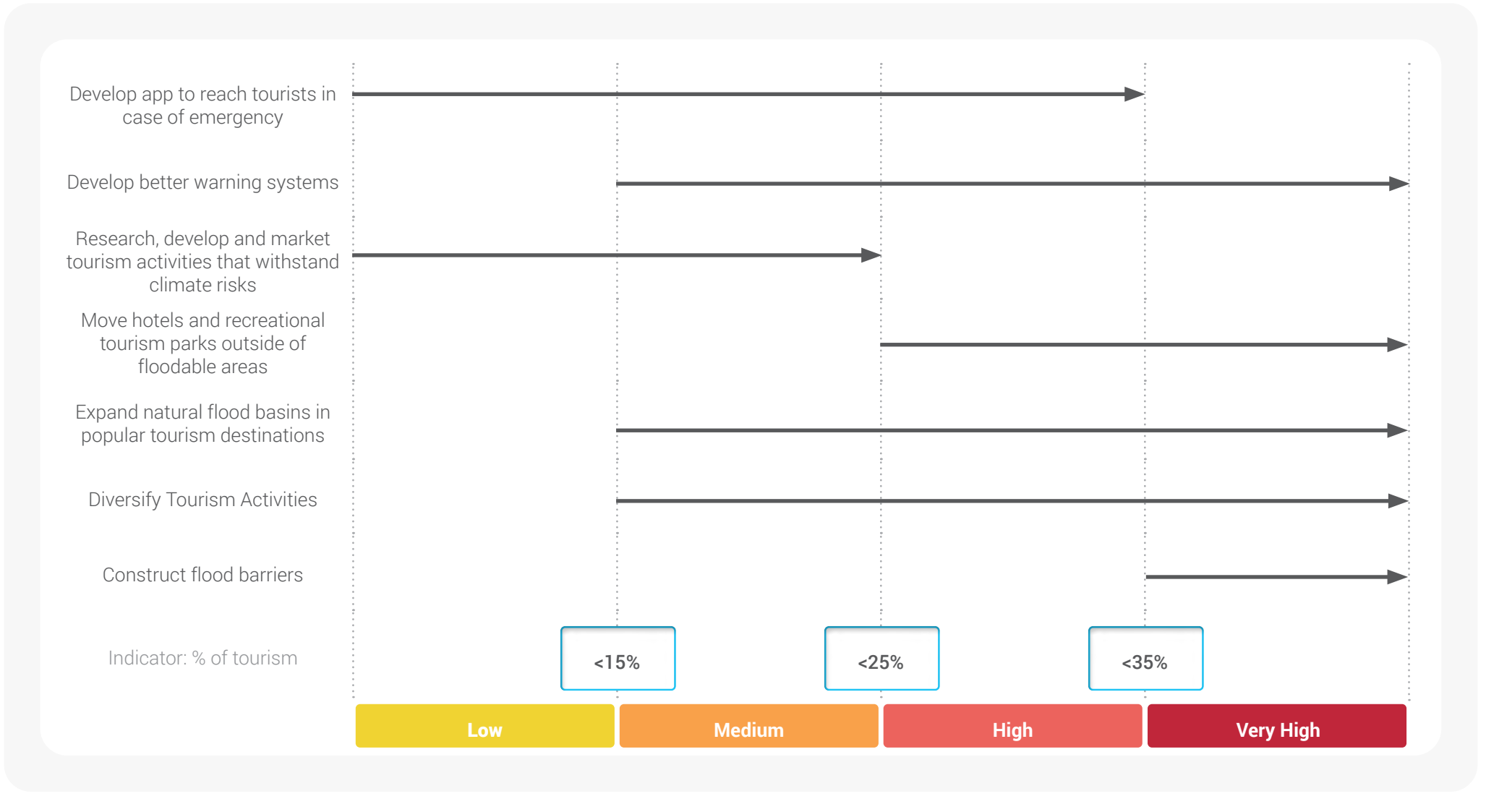
**Step 1:** Lay out adaptation risk and corresponding indicator on the X axis and the different adaptation solutions on the Y axis.





## SESSION III - CONCLUSION CANVAS EXAMPLE (2/6)

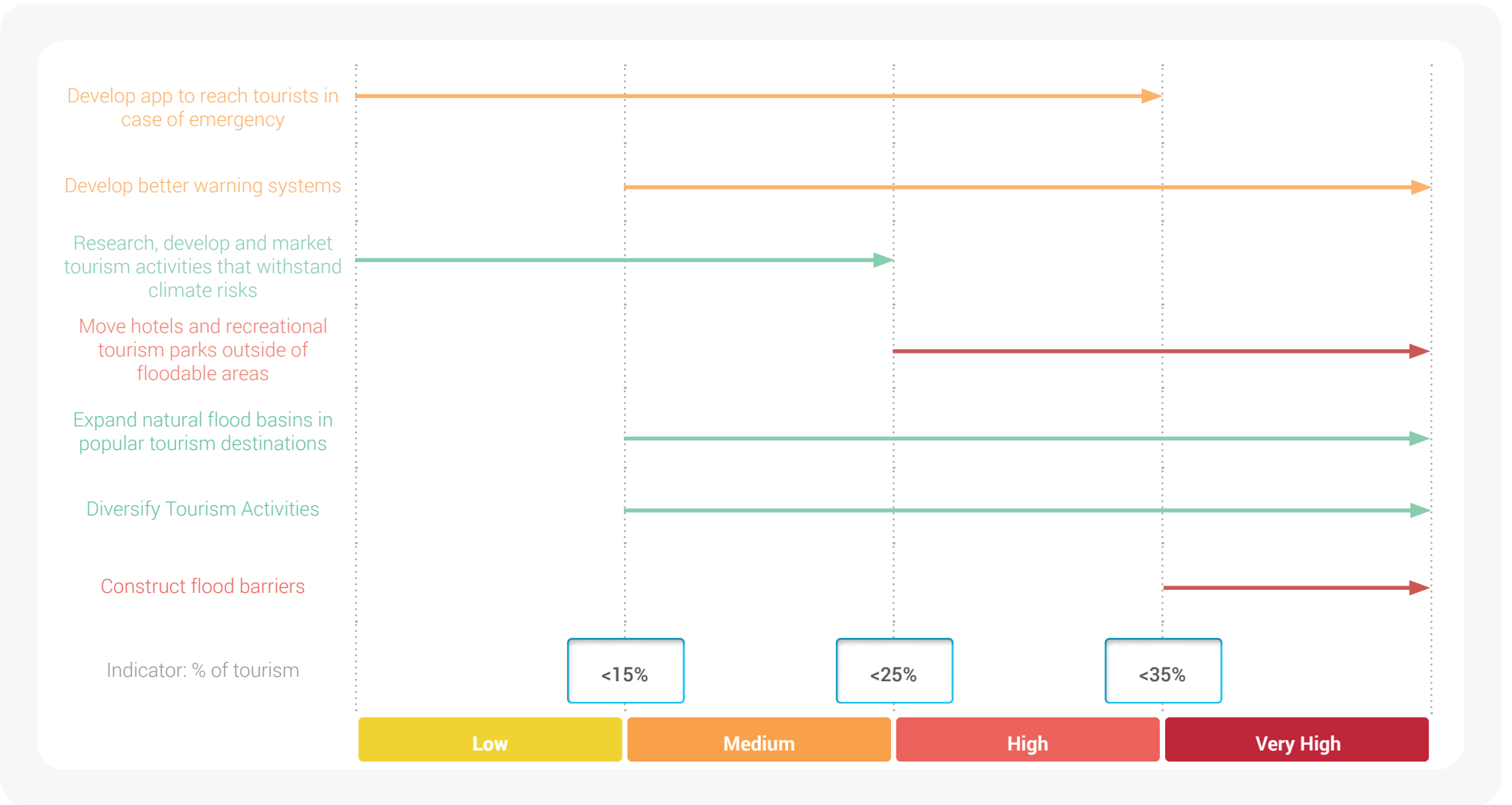
**Step 2:** Determine the start date and expiry date of an action (Viability of solutions) in respect to risk levels and key objectives (based on the expertise of scientists and the participation of stakeholders in the workshops).





## SESSION III - CONCLUSION CANVAS EXAMPLE (3/6)

**Step 3:** Mark in colors solutions considering their feasibility, social acceptability, flexibility, efficiency and environmental co-benefits. Feasible, socially acceptable but not so efficient/only allowing for coping → Orange. Efficient, costly and not accepted → Red. E.g. Feasible, efficient and socially acceptable → Green.





# SESSION III - CONCLUSION CANVAS EXAMPLE (4/6)

**Step 4:** Develop various pathways considering a combination of different adaptation solutions implementation options: A - Feasible but costly/not socially accepted/not transformative; B - Efficient and transformative; C - Focus on nature-

based solutions; D - Focus on engineered solutions; E - Focus on nature-based solutions; etc.

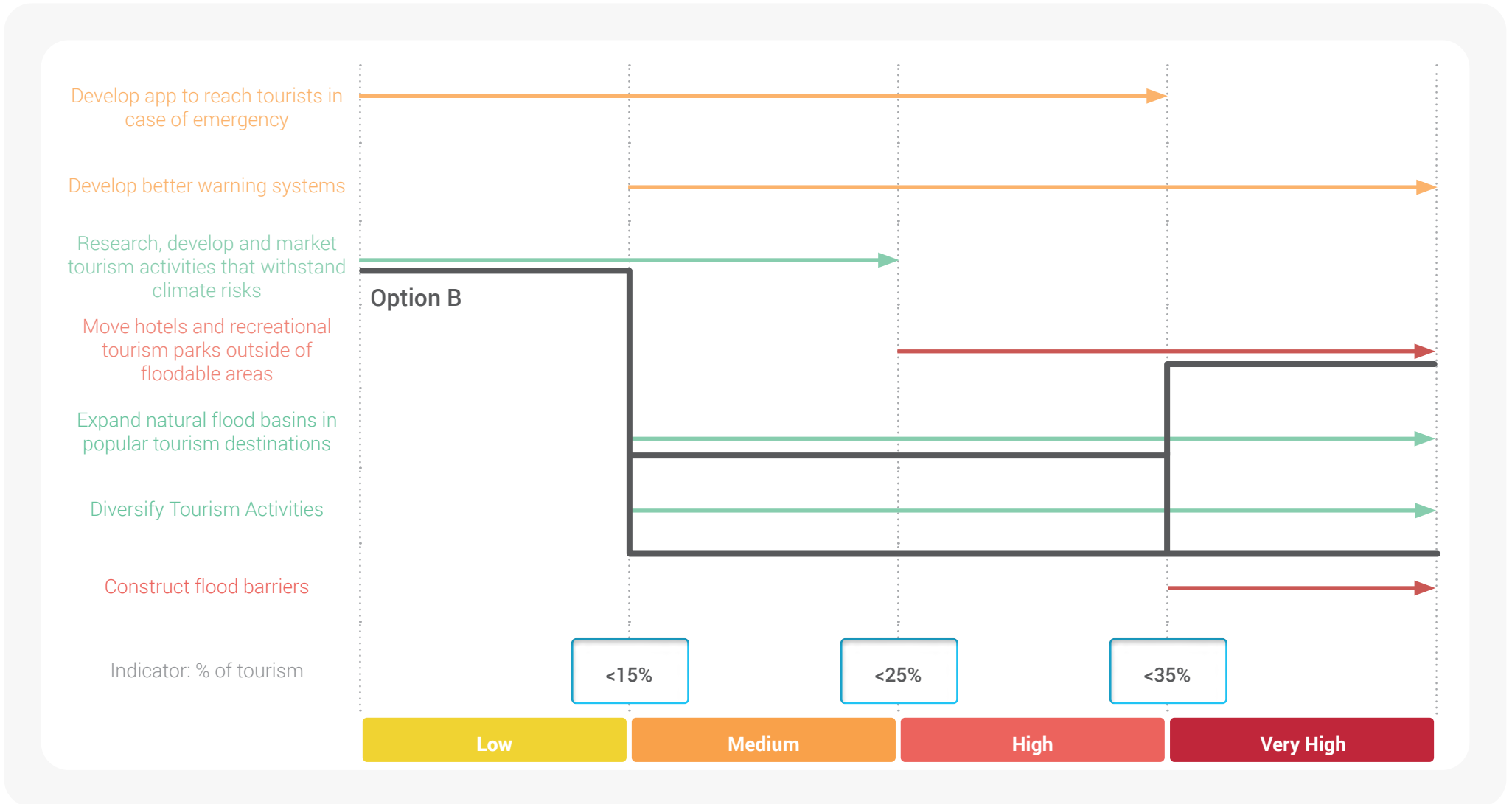




## SESSION III - CONCLUSION CANVAS EXAMPLE (5/6)

**Step 4:** Develop various pathways considering a combination of different adaptation solutions implementation options: A - Feasible but costly/not socially accepted/not transformative; B - Efficient and transformative; C - Focus on nature-

based solutions; D - Focus on engineered solutions; E - Focus on nature-based solutions; etc.

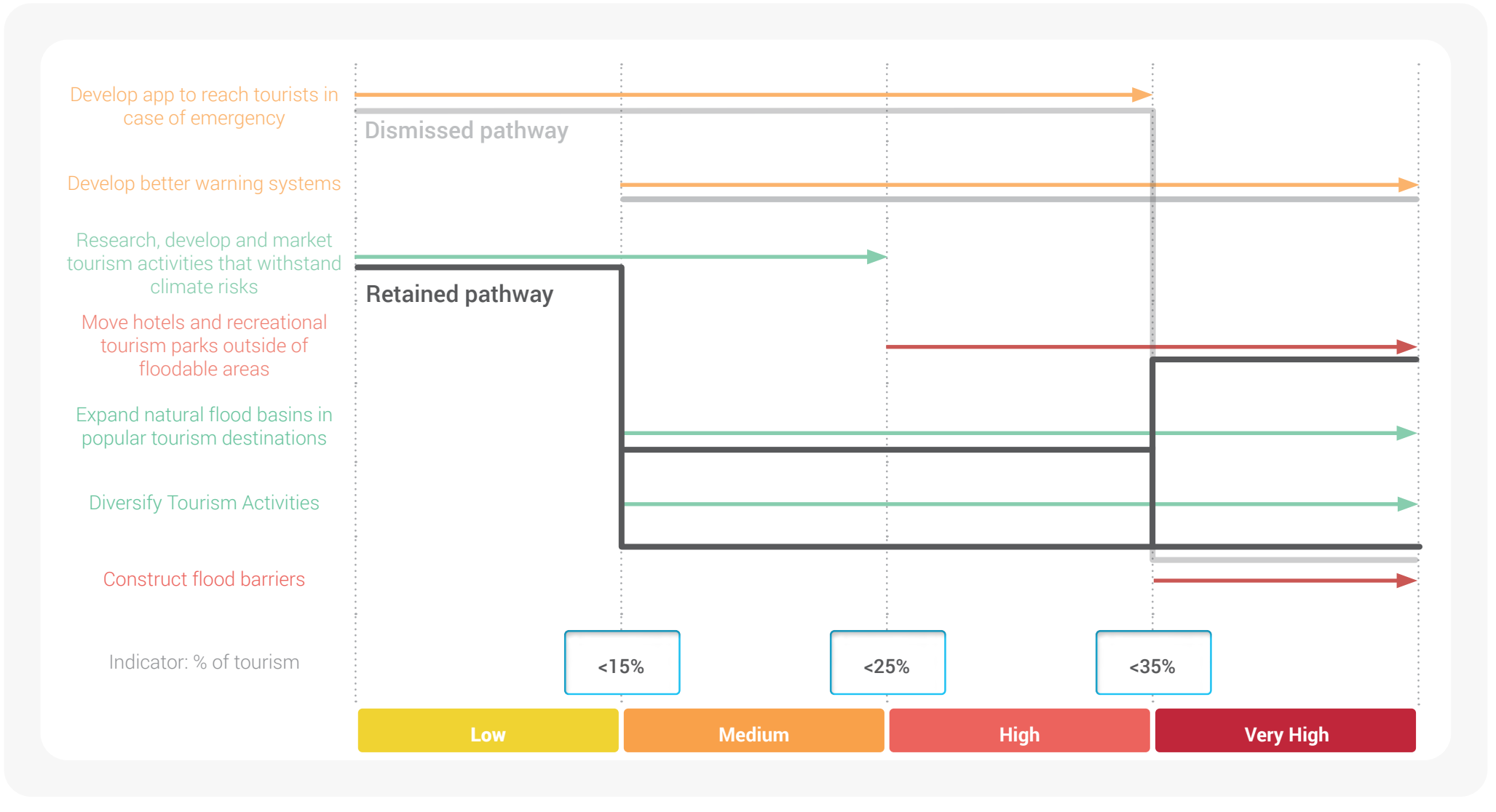




# SESSION III - CONCLUSION CANVAS EXAMPLE (6/6)

**Step 5:** The selection of a pathway (based on preferences, feasibility, acceptance, availability of resources, etc.) is mainly a political choice, it allows for planning in light of uncertainty

Below is the finished example of the conclusion canvas from session 3.



# 4.5 FULL EXAMPLE

This entire canvas will be explained in detail throughout the chapter.



**Risk Factors**  
 • Hazards  
 • Exposure  
 • Vulnerability



**Challenges**  
 • Intermediate impact  
 • Perceived risks  
 • Socio-economic impact  
 • Existing solutions



**Risk prioritisation**  
 • Most prominent risks  
 • Risk levels



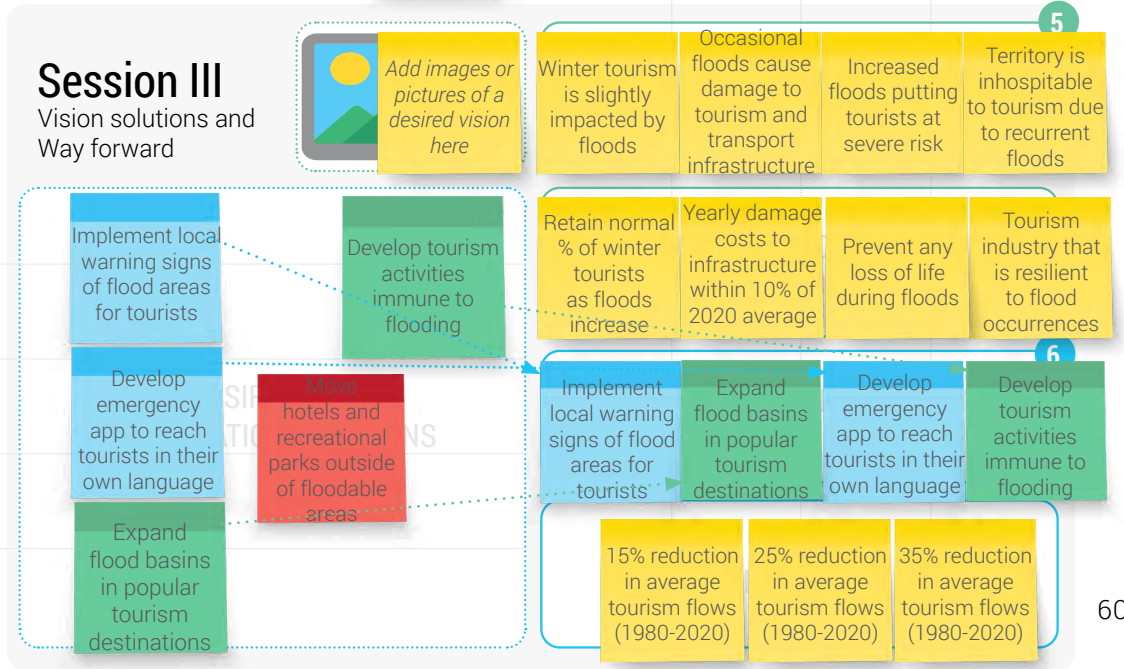
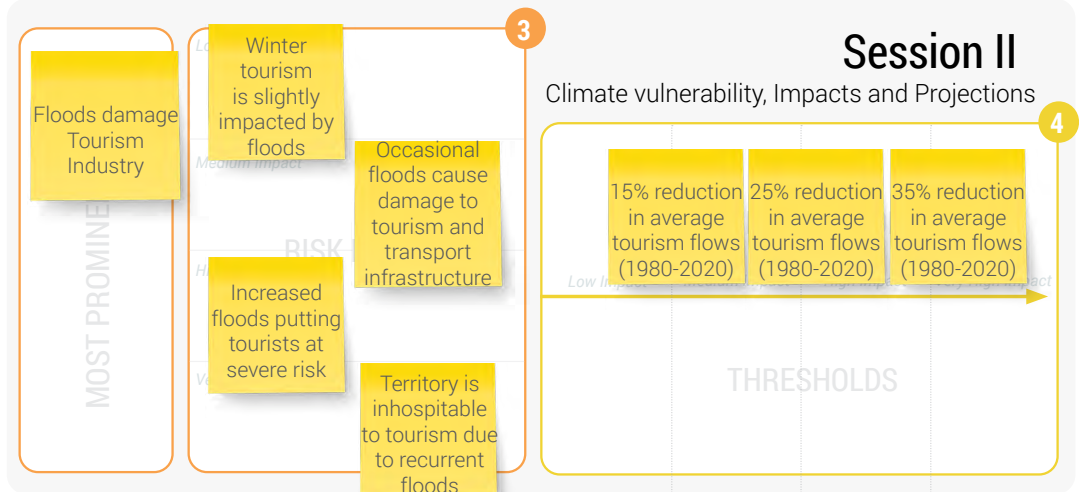
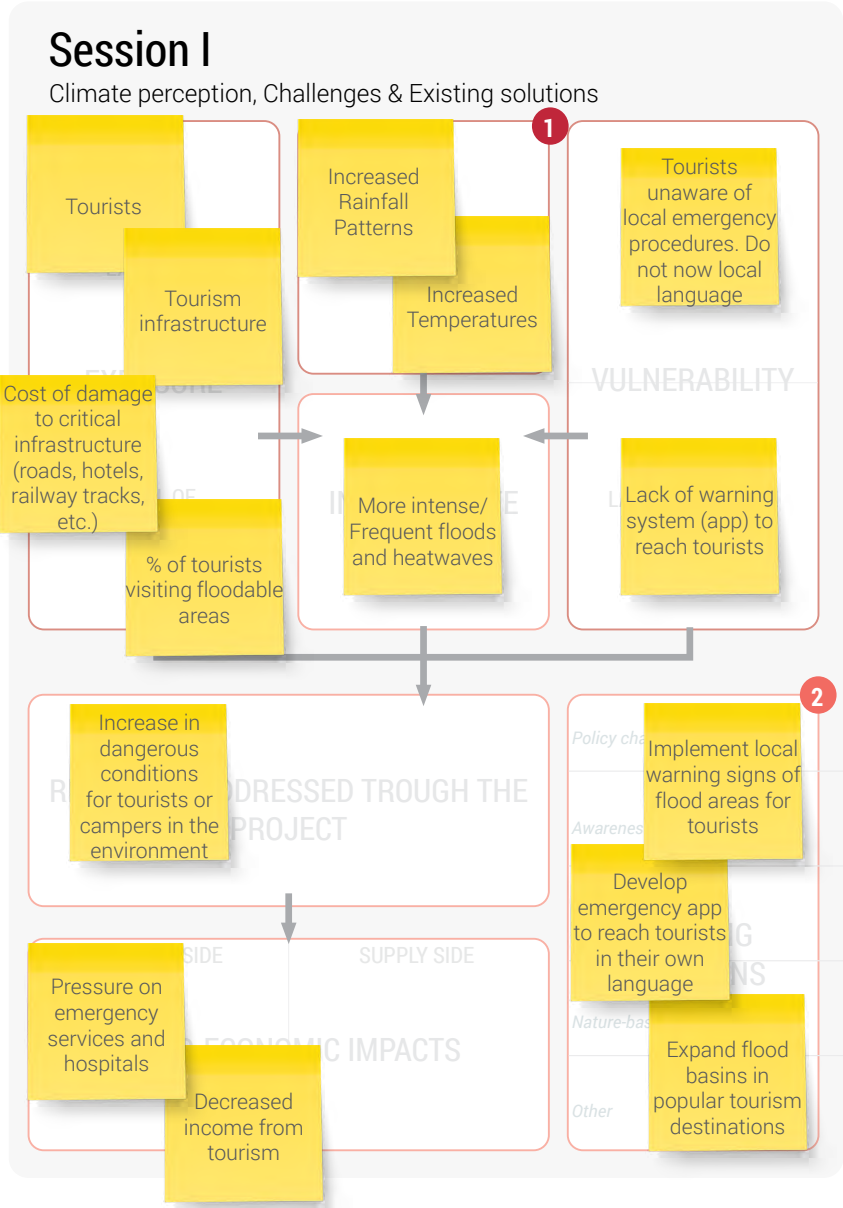
**Impact assessment**  
 • Risk impact  
 • Thresholds



**Envisioning**  
 Target goals and desired future for the defined thresholds



**Measures**  
 Combination of Climate Adaptation Measures





# 05

## INSPIRING CONTENT

5.1. Inspiration Stories

5.2. Future Success Stories

1 Introduction

2 Engaging Stakeholders

3 Planning a workshop

4 Driving Transformational Adaptation

**5 Inspiring Content**

6 Annex: Tips and canvases

## 5.1 INSPIRATION STORIES

This chapter will offer an overview of interesting case studies and success stories related to transformational adaptation. Fueled by the catalogue of solutions as devised by the TransformAr consortium, as well as by experiences gathered from our stakeholders while engaging in the sessions planned for 2022.

As mentioned before, this Playbook is a living document, where new stories and insights will be featured as they develop. These stories can then also be used during the planning and execution of sessions to inspire or offer tangible examples of transformational adaptation practices.

Do you have a great success case that you think would fit within this playbook? Feel free to get in touch at [verhaert.com](https://www.verhaert.com).



## 5.1.1. LEUVEN 2030



### The Challenge:

Equipping Leuven to cope with the effects of climate change when they hit, while strengthening the knowledge economy, spurring technological innovation, creating jobs, improving public health, expanding green spaces, increasing our energy and materials independence, and inspiring other cities to follow our lead.

### Approach:

Reduce carbon emissions in a targeted and result-driven manner. We do this by combining science (scientific framework), social power (bringing people together around projects) and storytelling (inspiring stories about the steps taken).



### L.E.U.V.E.N. (Lower Energy Use Via an Extraordinary Network)

*Under the name L.E.U.V.E.N., 23 large and small partners collaborate to make their large buildings more sustainable. These are offices, schools, retirement homes, cultural centers, etc. Together, the partners invest around 50 million euros in energy-saving measures and share their knowledge and experience.*




### LEUVEN FOOD STRATEGY

*A strategy was designed for a more sustainable agricultural and food system in Leuven. The food strategy focuses on all aspects of the food chain, such as production, consumption, processing and distribution.*




### STRATEN VOL LEUVEN

*Within the project 'Leuven Food Strategy' a strategy was designed for a more sustainable agricultural and food system in Leuven. The food strategy focuses on all aspects of the food chain, such as production, consumption, processing and distribution.*



*Together with their members and their dedicated network, Leuven 2030 is working towards a shared and ambitious goal: a healthy, livable and climate-neutral Leuven by 2050.*

*In doing so, they take into account the diversity in our society and strive to achieve this change in a socially just way*

## 5.2 FUTURE SUCCESS STORIES



DEMONSTRATOR 1

City of Lappeenranta, Finland



DEMONSTRATOR 2

West Country region, UK



DEMONSTRATOR 3

Guadeloupe Archipelago, France



DEMONSTRATOR 4

Oristano, Italy



DEMONSTRATOR 5

Galicia region, Spain



DEMONSTRATOR 6

City of Egaleo, Greece

# 06

## ANNEX: TIPS AND CANVASES

- 6.1. Best Practices and Tips
- 6.2. Contact Page
- 6.3. Canvases and Tools

1 Introduction

2 Engaging Stakeholders

3 Planning a workshop

4 Driving Transformational Adaptation

5 Inspiring Content

**6 Annex: Tips and canvases**

## 6.1 BEST PRACTICES AND TIPS

### INTRODUCTION

This section will be updated and expanded periodically through the online version of this PDF Playbook as more workshops based on the methodology are conducted. In the future, we will also share best practices here and feedback from the participants and partners. The goal will be to learn from additional workshops and refine the methodology and techniques used with the participants and stakeholders. A framework has been put in place across all 3 sessions to help collect and register the necessary components to begin driving transformation adaptation.

### LESSONS LEARNED FROM ACHIEVED WORKSHOPS

The Playbook has been tested in the 6 demonstrators' territories (City of Lappeenranta (FI), West Country region (UK), Guadeloupe Archipelago (FR), Oristano (IT), Galicia region (ES), City of Egaleo (GR)) and the following territory of the TransformAr project (Municipality of Gjovik (NOR)). The "[Set of adaptation transformation pathways per demonstrator](#)" (deliverable D3.3) that can be downloaded in the Knowledge center of TransformAr website presents the results of the testing phase.

This section presents the lessons learnt from the experimentation in a Q&A format. If you have lessons learnt with the exploitation of Playbook methodology that you would like to share, feel free to reach [Verhaert](#) and [Acterra](#) teams.





## Is the playbook a rigid guide to co-construct adaptation pathways?

Having the Playbook as step-by-step methodology is very helpful to co-construct adaptation pathways, but it should be used as a general guide that workshop organizers could adapt. It is important to understand that each workshop is different for many reasons: context, stakeholders engaged, sectors to be addressed.... In the framework of the TransformAr project for example, each duo of partners per demonstrator organized workshops in different formats. The Playbook proposes 3 sessions to organize, but when TransformAr partners prepared their workshops, these sessions were organized differently due to various constraints. The 6 demonstrators organized the 3 sessions the following ways: 3 sessions in 3 separate half days, 3 sessions in 1 day, 3 sessions in a half day, 3 sessions condensed in 2 workshops or 4 sessions with different stakeholders' groups.... Involving stakeholders for 3-day workshops is quite difficult but organizing all sessions in 1 day raises constraints as well. A balance should therefore be found between those two possibilities. When organizing the workshops to set up the adaptation pathways, it is not mandatory to organize and to follow the proposed 3 sessions in the Playbook in 3 days. Rather than thinking about the number of sessions, workshop organizers have to be led by the question: "how can they reach the outcomes of each session involving the relevant stakeholders?".

## What is the best format to co-construct adaptation pathways: online, in-person or hybrid workshops?

The 3 workshop sessions of the Playbook could be implemented online, in-person or in a hybrid way. Each format has its strengths and weaknesses.

### Online workshops

Logistics related to an in-person workshops (time needed to travel for participants, room reservation, materials for participatory activities...) are avoided for this type of workshop. Nonetheless, online workshops had to be organized on a shorter time scale as one session should not exceed 2,5 hours to limit participant fatigue. For this, it is important to shorten some sections of the Playbook methodology. If

needed, it is recommended to shorten the Session I by preparing basic elements before the start of the workshop. For these kinds of workshops, the use of online survey tools is encouraged (like Klaxoon which was used by some TransformAr demonstrators) to interact with participants to allow them to be remotely involved and to gain confidence in the subject matter.

### In-person workshops

This kind of workshop permits more interaction in the implementation of the sessions (using of paper board, sticky-notes...). In-person workshops also allow for the development of professional networks between participants. Nonetheless, this type of workshop is organized, based on the availability of stakeholders to be involved which can complicate the workshop organization. For some contexts, territories, and sectors, it can be difficult to identify the right date to conduct workshops due to this availability constraint. Workshop organizers should be informed on events and calendars of each organization to be able to identify the right date to conduct workshops.

### Hybrid workshops

For a hybrid participation approach (some participants are online, and some are present in-person), it is quite difficult to organize and to facilitate the interaction between participants (issues related to microphones, internet connection, difficulties in organizing participatory activities with both online and offline participants at the same time, ...). As the Playbook methodology is based on a participatory approach, it is recommended to conduct workshops fully online or fully in-person if possible and avoid the hybrid approach.

## Who and how should the stakeholders be involved in the workshops?

The Playbook methodology is based on scientific and local expertise. It is crucial to identify the relevant actors to be involved in the process. The methodology of engaging relevant stakeholders is well described in the Chapter 2 of the Playbook. Depending on the purpose of the workshops, the workshop organizers should chose the approach to involve stakeholders. On one hand, to co-construct

adaptation pathways at territorial level, it is appropriate to involve all the actors from different sectors in the same workshops. Having all stakeholders in the same session can help to have a holistic view and a general understanding of the context of the territory (it is less relevant when discussion is focused on one sector). On the other hand, if the purpose of the workshops is to co-construct adaptation pathways for specific sector, it is relevant, in this case to involve the actors from the concerned sector in the workshops. While organizing Playbook based workshops, it is interesting to conduct the first session related to the perception of climate change with all stakeholders from all sectors and it is more interesting to have actors related to one sector when participants are discussing definition of impact levels, critical thresholds, adaptation outcomes for specific sector.

Informal meetings and bilateral meetings with key stakeholders before conducting the workshops could be very useful in some circumstances to understand the sector, to be more confident in participants and to encourage involvement in the discussions. It is also important to be aware of the nature of the relationships between organizations and participants so organizers can adapt the involvement of each type of actors and moderate the sessions.

### When and where should we organize workshops for co-construction of adaptation pathways?

The choice of the time and season to conduct workshops is important. Workshop organizers should take into consideration the different organizational and seasonal constraints to be sure that key actors could attend the workshops. The choice of the place of the workshops is important as well. Workshop organizers should book a room that can allow the interactive approach promoted in the Playbook.

While implementing the Playbook method, it is important to include breaks between sessions to have time to work on the past sessions, to draw conclusions to present to participants in the next sessions. This time is also needed by participants to allow them to better understand the approach and methodology. It is also relevant to evaluate past sessions and identify necessary deviation for future workshops' organization and approach (identification of missing actors, adaptation of participatory approach, agenda rearrangement...). It is recommended to have a break (1 or 2 days) between Session II and Session III.

### What language should we use while conducting Adaptation pathways co-construction workshops?

It is important to underline that the use of the native language is very important when interacting with local actors during workshops. It enables fluent exchange between participants, even though this raises challenges for organizers. As the Playbook was developed in English, some definitions of concepts can be difficult to translate into some languages. Explaining concepts and differences between them (e.g., risk, hazard, impact) to workshop participants who are not familiar to climate change field can be difficult as well. Workshop organizers and facilitators should be aware of the background of each participant and should adapt the workshop accordingly. They are also encouraged to prepare definitions of key concepts in their local language before conducting workshops. Time for Q&A are to be anticipated during the workshop sessions to allow participants understand the concepts and the approach taken.

### How can we correctly reach the outcomes of each Session?

#### Risk chain: main outcome of the Session I

The main challenge to reach this outcome is the capacity and the time needed by participants to understand the definition and the difference between risk chain components (exposure, hazards, vulnerability, intermediate impacts, risk, socio-economic impacts). This is why it is important to prepare before the workshop the definition of each concept in simple words and with concrete examples. The risk chain can be developed at sectoral or territorial scale. Choosing to develop risk chain at territorial level is interesting for having a holistic view of the impact of climate change. Nonetheless, having risk chains at sectoral level is also interesting to have more precision on impacts of climate change on the addressed sectors. Workshop organisers can choose one approach or can choose to develop both. It is important to identify the relevant stakeholders to involve for each approach chosen. The main purpose of the exercise is to enable participants to have a global understanding of the main causes and consequences of climate change in their territory or sector. This exercise is quite easy to understand and to implement if preparation work is done correctly. Workshop participants may not be able to distinguish climate-related hazards from other type of hazards (environmental hazards, geophysical hazards, man-made hazards...). In this context, what can be



done is to reframe the discussions, keeping the non-climatic hazards identified in one category as they may help in other steps of the work, to understand the global context. Similarly, it may be difficult for participants to distinguish intermediate impacts from risks to be addressed. The solution of giving examples is still valid in this context in order to facilitate everyone's understanding.

**Risk evolution, indicators, and critical thresholds definition: main outcomes of Session II**

The exercises of defining impact/risk evolution may be quite difficult as well as the identification and the quantification of indicators and critical thresholds. To address this issue, workshop organizers could prepare examples for each element (impact/risk evolution, identification and quantification of indicators and critical thresholds) to inspire participants. They can be prepared, printed and presented to participants.

The concept of critical thresholds can be well understood by workshop organizers and participants but the quantification work of them (if quantitative parameters were chosen) can be particularly challenging. It is important to note that critical thresholds could take different formats: quantitative measurement of a social, an economic or a biophysical parameter, qualitative description of a specific social situation, frequency, or intensity of a specific climate event, .... One approach is not more relevant than the other. The most important is that the actors come to understand the logic and identify for themselves what indicator is relevant to assess and what are the critical thresholds according to them. Participants may also choose to assess one or more indicators and characterize one or more critical thresholds as they consider it relevant. Workshop organizers are encouraged to prepare examples of each type of "indicator" and "critical threshold" to present to participants to allow them to understand the scope of the work. The best way to accomplish this task is to identify simple and logical indicators.

**Adaptation pathways: main outcomes of Session III**

The discussion on elaborating pathways needs time as it is preceded by identification of criteria and assessment of each proposed solutions regarding those criteria. After achieving the stage of identifying relevant actions per impact level(s), time is needed by the workshop team organizer an internal work on the results and to propose Adaptation Pathways that can be presented to workshop participants. Other challenges to develop adaptation pathways while applying the

Playbook methodology exist. One is related to the understanding of the concept of "adaptation pathways" and the concept of "transformative adaptation". Workshop organizers need to visualize the expected outcomes and should be the first to understand the concepts as this is an innovative approach to managing climate risks. Workshop facilitators are encouraged to prepare some questions to guide the discussion between participants for this task. The identification of relevant solutions per impact level can take time. To be more efficient, workshop facilitator can present the catalogue of solutions prepared in the framework of the deliverable D3.2 of the TransformAr project to inspire participants. It is important to guide the participants in the process of "thinking outside the box" while identifying the relevant solutions to address each impact level. This could be done by presenting examples of innovative solutions or by addressing some questions.

**What are the next steps after accomplishing adaptation pathways co-construction workshops?**

When you have finished organizing the workshops for adaptation pathways co-constructing, you are encouraged to return to the participants to present the results. The first purpose is to reward and recognize the collective effort made by presenting the results of the various sessions. The second purpose is to gather feedback and to validate the final results. It is also important to document the process and the results of the process in a report that can be stored, shared with relevant stakeholders, and reused in case of needs. The adaptation validated adaptation pathways constitute a roadmap for transformational adaptation in the concerned region. The next stage is to put in place the resources (human, financial, governance, etc.) to implement it and to set up a monitoring mechanism to assess the state of implementation. Resource planification and implementation monitoring are an important concerns that the Playbook does not cover at the moment.

## USING ONLINE CANVASES

Depending on whether you are conducting a physical or online session, the nature of the canvases could be modified. You can also expand the canvases as presented in the Playbook into virtual whiteboard blocks as seen on the next pages. This could allow for more room to add additional post-its. If you are using a whiteboard software such as Klaxoon, Mural or Deskle for a virtual session it is imperative to prepare your own canvas beforehand, pre-populate it where necessary with

the output from a previous session, and adapt it to your needs and audience. A few examples of canvas templates that have been used in the past sessions are demonstrated on the next pages. As you will see the components of the canvas remain the same, but the structure and blocks are sometimes organized in a different way (in order to allow more post-its to be shared).





# SESSION III - ONLINE WHITEBOARD ALTERNATIVE

3



Risk Prioritisation

4



Impact Assessment

## MOST PROMINENT RISKS

3

## RISK LEVELS

4

LOW IMPACT

MEDIUM IMPACT

HIGH IMPACT

VERY HIGH IMPACT

## RISK INDICATORS





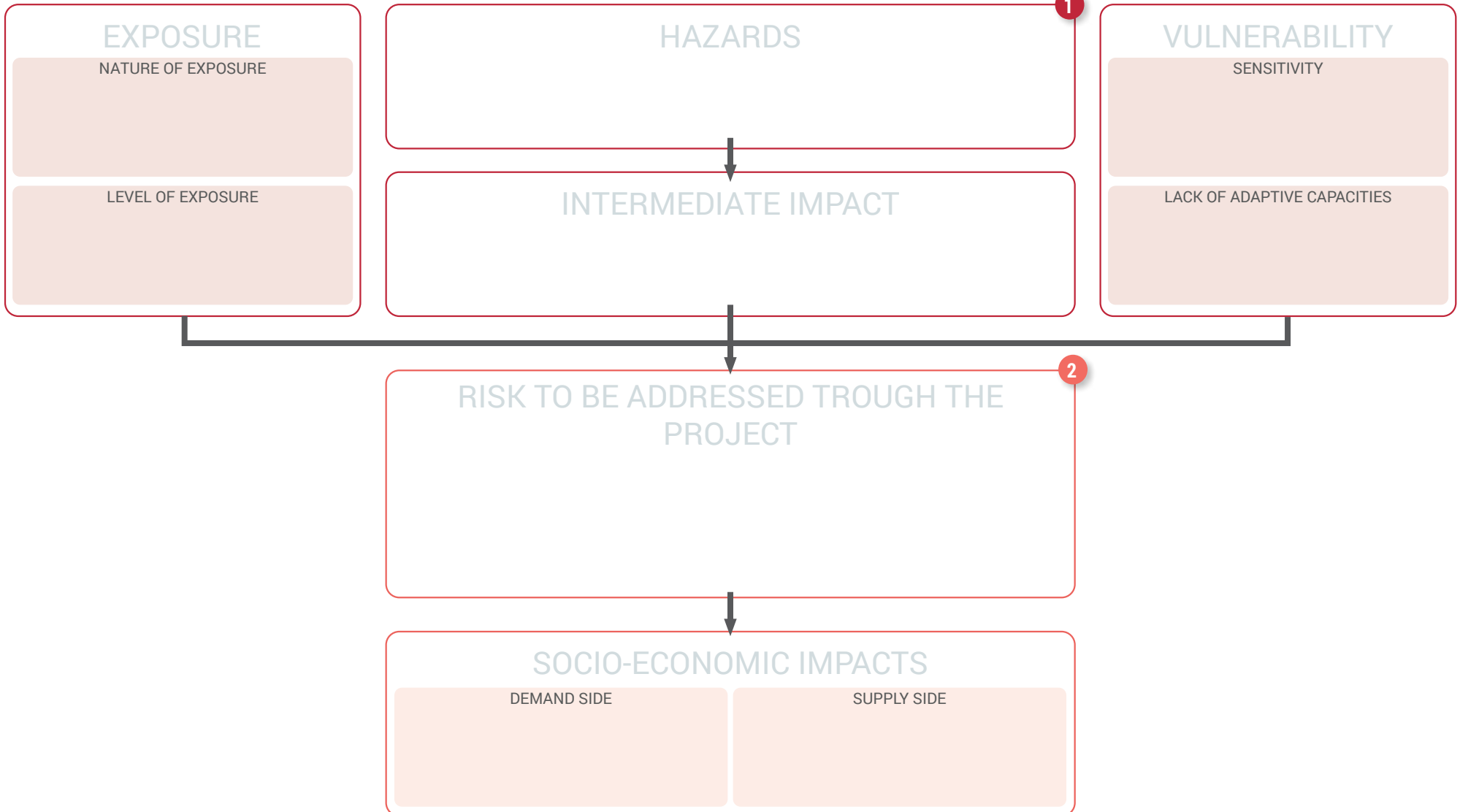
# SESSION I - ONLINE WHITEBOARD ALTERNATIVE



Risk Factors

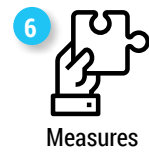


Challenges





# SESSION III - ONLINE WHITEBOARD ALTERNATIVE



## CLASSIFICATION OF ADAPTATION MEASURES

**Good measure:**  
This measure will transform this sector.

**OK measure:**  
We could implement when necessary

**Inappropriate measure:** Does not correspond to this territory

## CATALOGUE OF SOLUTIONS

## ADDRESSED CLIMATE-RELATED RISK:

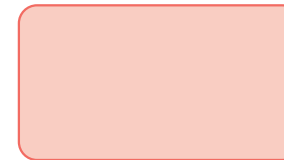
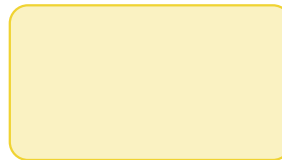
LOW IMPACT

MEDIUM IMPACT

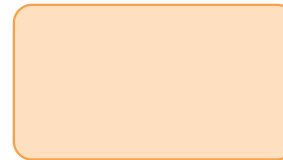
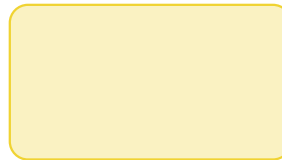
HIGH IMPACT

VERY HIGH IMPACT

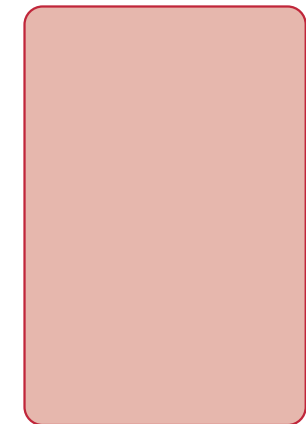
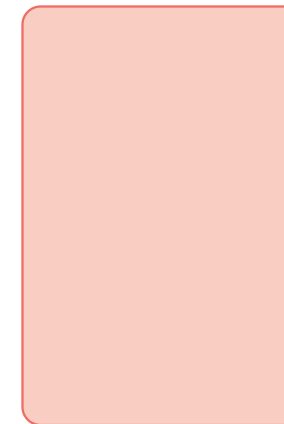
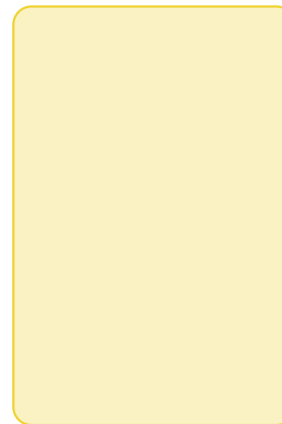
CLIMATE RISK LEVELS (OUTCOMES)



CLIMATE ADAPTION OBJECTIVES (DESIRED OUTCOMES)



CLIMATE-CHANGE ADAPTATION SOLUTIONS



INDICATOR

INDICATOR

INDICATOR

## 6.2 CONTACT PAGE

### RELEVANT CONTACT INFORMATION

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## 6.3 CANVASES AND TOOLS

Within this section you will find printable pages of all the session canvases. When printed in A2 these will serve as a useful tool to conduct the workshops. You can then use post-its which can be placed on to the different components of the canvases.





# SESSION I - MEET & GREET CARDS



**Meet & Greet**



Name/Family Name



Function/Organization



Describe the .....region in 1 word



**Meet & Greet**



Name/Family Name



Function/Organization



Describe the .....region in 1 word



**Meet & Greet**



Name/Family Name



Function/Organization



Describe the .....region in 1 word



**Meet & Greet**



Name/Family Name



Function/Organization



Describe the .....region in 1 word





# SESSION CANVASES

## COMPONENTS



**Risk Factors**

- Hazards
- Exposure
- Vulnerability



**Challenges**

- Intermediate impact
- Perceived risks
- Socio-economic impact
- Existing solutions



**Risk prioritisation**

- Most prominent risks
- Risk levels



**Impact assessment**

- Risk impact
- Thresholds



**Envisioning**

Target goals and desired future for the defined thresholds



**Measures**

Combination of Climate Adaptation Measures

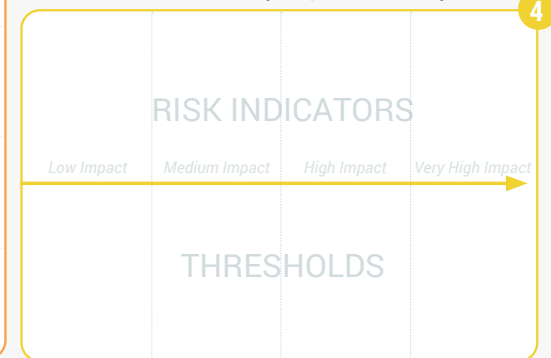
### Session I

Climate perception, Challenges & Existing solutions



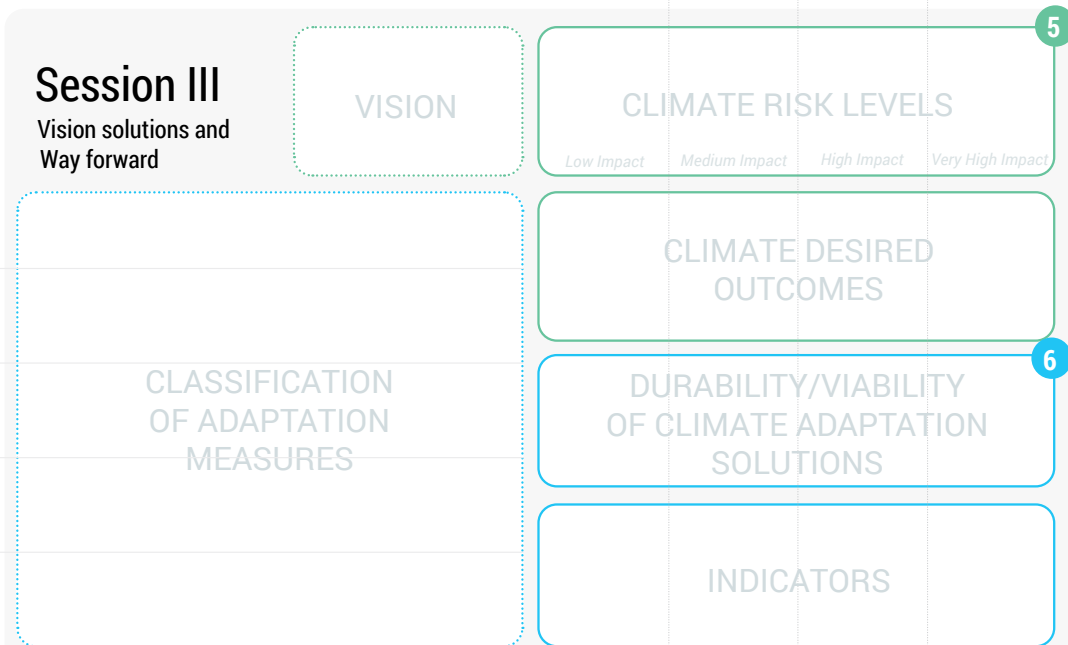
### Session II

Climate vulnerability, Impacts and Projections



### Session III

Vision solutions and Way forward





# SESSION I - MAIN CANVAS



Risk Factors



Challenges



## Session I

Climate perception, Challenges & Existing solutions





# SESSION I - CONCLUSION CANVAS



	Hazards/Climate Impacts	Exposure	Vulnerability	Risks	Socio Economic Impacts
SECTOR					



# SESSION II - MAIN CANVAS

3



Risk prioritisation

4



Impact assessment



## Session II

### Climate vulnerability, Impacts and Projections

3

LOW IMPACT

MEDIUM IMPACT

HIGH IMPACT

VERY HIGH IMPACT

MOST PROMINENT RISKS

RISK LEVELS

4

RISK INDICATORS

LOW IMPACT

MEDIUM IMPACT

HIGH IMPACT

VERY HIGH IMPACT

THRESHOLDS





# SESSION II - CONCLUSION CANVAS



Addressed climate-related risk:

SECTOR

INDICATOR

INDICATOR

INDICATOR

Low

Medium

High

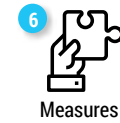
Very High

Risk outcome (evolutions)





# SESSION III - MAIN CANVAS



## Session III

Vision solutions and Way forward

VISION

*Policy changes*

*Awareness campaigns*

*Engineered/  
Technological  
solutions*

CLASSIFICATION  
OF ADAPTATION  
MEASURES

*Nature-based solutions*

*Other*

5

CLIMATE RISK LEVELS

*Low Impact*

*Medium Impact*

*High Impact*

*Very High Impact*

6

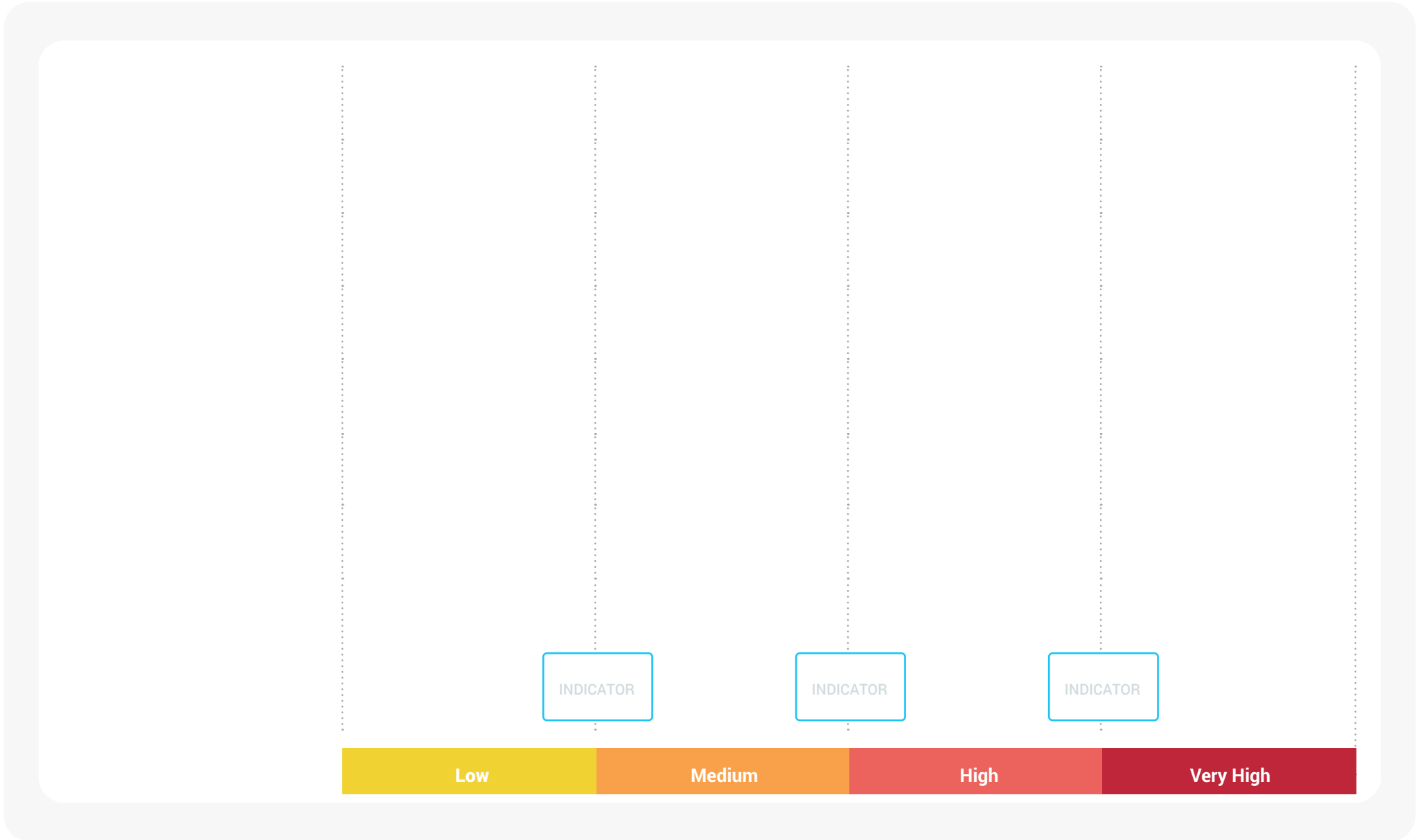
CLIMATE DESIRED OUTCOMES

DURABILITY/VIABILITY  
OF CLIMATE ADAPTATION  
SOLUTIONS

INDICATORS



# SESSION III - CONCLUSION CANVAS



Low

Medium

High

Very High

INDICATOR

INDICATOR

INDICATOR





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