



# The **CLIMSAVE** Project

## Climate Change Integrated Assessment Methodology for Cross-Sectoral Adaptation and Vulnerability in Europe

### Summary of the report describing the methodology for scenario development and analysis

Kasper Kok, Marc Gramberger, Karl-Heinz Simon, Jill Jäger, Ines Omann

Contact: [kasper.kok@wur.nl](mailto:kasper.kok@wur.nl)

#### **Introduction**

This summary is intended to provide a short overview of the concepts that underlie the scenario development methods as applied in the CLIMSAVE project. The methods were applied at two scales, Europe and Scotland. Detailed description of the methods can be found in the full report. All elements of the overall concept are presented, but with an emphasis on the participatory aspects. The concept and main elements of the scenario development process are visualised in Figure 1. The 'corners' of the triangle depict elements; the arrows represent the main methods employed.

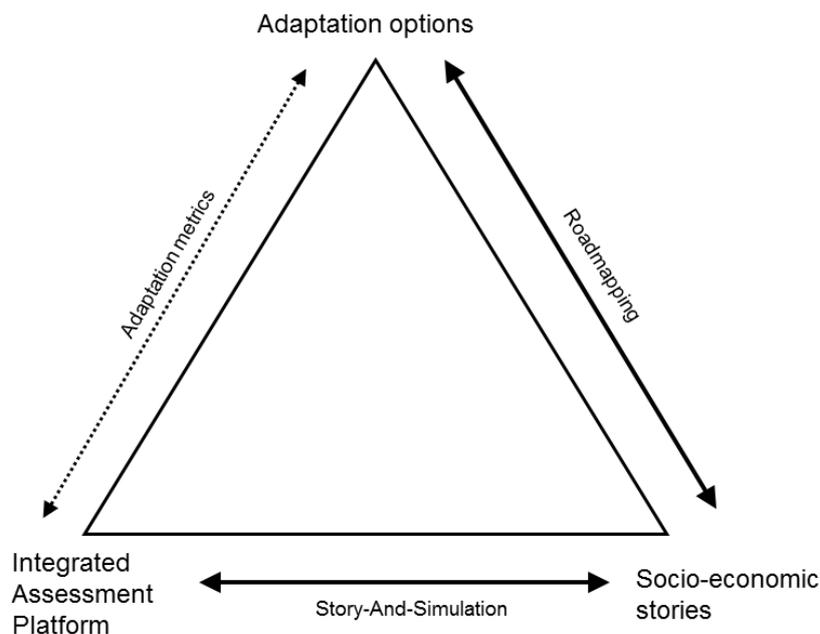


Figure 1: Main elements of scenario development in CLIMSAVE.

## **Elements**

### *Integrated Assessment Platform (IAP)*

The online IAP is a collection of mathematical models that together provide quantitative data (maps and graphs) of climate scenarios, socio-economic scenarios, and a range of impacts. Additionally, the effect of a range of adaptation options on reducing impacts and vulnerability can be simulated, as well as estimates of their cost-effectiveness.

### *Socio-economic stories*

A set of four qualitative socio-economic scenarios is developed using participatory methods. A broad set of stakeholders is selected that participate in the development of the socio-economic stories. The aim is to bring together scientific methods and stakeholder knowledge. Stories cover a range of aspects including social and economic developments, but also cultural, institutional, and political aspects in a set of integrated future outlooks. Stories are developed during a set of three stakeholder workshops. Additional to the stories, flow-charts, graphs depicting temporal developments, and quantitative estimates of a number of main drivers (e.g. population and GDP) are produced. Together, these stakeholder-determined products depict a complete picture of possible futures.

### *Adaptation options*

Lists of adaptation options are generated and discussed by stakeholders in the context of the set of socio-economic scenarios and by CLIMSAVE experts, based on an extensive literature review. A selection of these options, partly based on stakeholder opinions, is incorporated in the IAP.

## **Methods**

### *Story-And-Simulation approach*

An essential part of the scenario development method, is the so-called Story-And-Simulation approach in which qualitative stories are developed by stakeholders and linked to quantitative models in an iterative procedure (see Figure 2). Crucial to the method is the notion that the final set of integrated scenarios is co-produced by scientific experts and stakeholder views. The method consists of ten steps that clearly define the role of stakeholders and modelling experts in the process. In practice, the Story-And-Simulation approach translated into a set of three workshops of 2-3 days during which around 20 stakeholders developed stakeholder-determined scenarios using expert-determined methods and guided by professional facilitators.

### *Roadmapping*

The socio-economic stories address the question “what can happen?”, while the adaptation options provide an answer to the question “what can we do about it?” Roadmapping is a method to link these normative options and the explorative stories. First, the adaptation options are related to each other, forming broader strategies. The effectiveness of these

strategies in the four different socio-economic futures can subsequently be evaluated. In this way, adaptation options can be identified that would work in all of the socio-economic futures.

*Adaptation metrics*

This method quantifies the list of adaptation options as discussed by stakeholders, in order to incorporate them in the IAP, and to enable a quantitative evaluation of how they can reduce impacts and vulnerability. These metrics are not discussed with stakeholders.

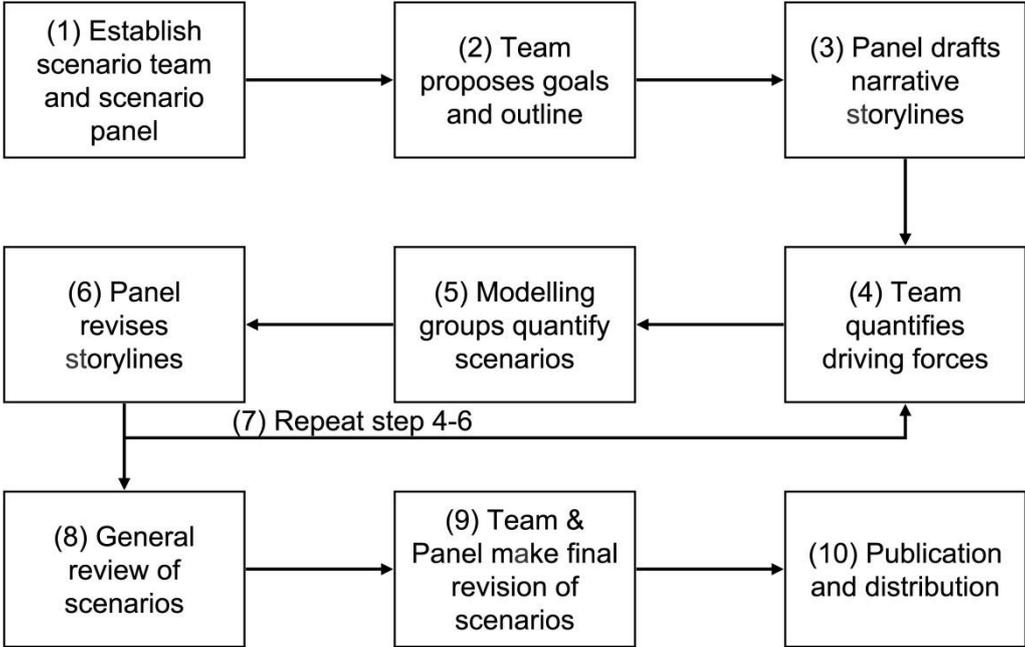


Figure 2: The Story-And-Simulation approach.