



## **ECONADAPT Web-Toolbox**

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To find out more about the ECONADAPT project, please visit the website:

[www.econadapt.eu](http://www.econadapt.eu)

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# Executive Summary

In the ECONADAPT project it was the aim of WP10 (according to the DoW) to develop a methodological toolbox that provides guidance from the methodological tasks and the case studies to help inform the wider application of the economic assessment of adaptation. During the duration of the project, it was decided to prepare a web-based-version of the toolbox. From all of the WP10 products, the ECONADAPT Web-Toolbox (<http://econadapt-toolbox.eu>) is the most comprehensive product. This deliverable explains the approach, the structure and the feedback process for the preparation of the ECONADAPT Web-Toolbox.

The deliverable summarizes the aim and the target group for the whole ECONADAPT Toolbox. It explains the structure of the web-based version of the ECONADAPT Toolbox. The structure consists of an entry page with four guiding questions which lead the different user groups to the relevant information: focusing on policy challenges in different adaptation situations, background information on different methods suitable for economic assessment of adaptation, detailed information on the case studies/ examples and concrete cost and benefit estimates for adaptation.

For further user guidance an “Easy Access Guide” was developed which filters the available information according to six context criteria, which can be selected by the visitor. Feedback from stakeholders was included at different stages in the development of the ECONADAPT Web-Toolbox. There were specific workshops to discuss the targets and structure of the Toolbox in the project team as well as with decision makers. Other workshops and telephone conferences were organized to receive feedback from national, regional and local stakeholders.

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# 1 Introduction

In the ECONADAPT project it was the aim of WP10 (according to the Description of Work (DoW)) to develop a methodological toolbox that provides guidance from the methodological tasks and the case studies to help inform the wider application of the economic assessment of adaptation. During the duration of the project, it was decided to prepare a web-based-version of the toolbox. From all of the WP10 products, the ECONADAPT Web-Toolbox (<http://econadapt-toolbox.eu>) is the most comprehensive product. This deliverable explains the approach, the structure and the feedback process for the preparation of the ECONADAPT Web-Toolbox.

The report summarizes the aim and the target group for the whole ECONADAPT Toolbox. It explains the structure of the web-based version of the ECONADAPT Toolbox. Furthermore, it summarizes the feedback process with internal project members and external stakeholders to gather needs, expectations and comments.

## 2 Objectives and Target group of the ECONADAPT Toolbox

To guide the development of the ECONADAPT toolbox, we focused on three key questions:

- **What** is the aim of ECONADAPT Toolbox?
- **Who** are the target audience and users of ECONADAPT results?
- **How** to reach our intended audience?

### What is the aim of the ECONADAPT Toolbox (WP10)?

As explained in the DoW, the key objectives of WP10 are to develop a methodological toolbox that provides guidance from the methodological tasks and the case studies of ECONADAPT to help inform the wider application of the economic assessment of adaptation. Furthermore, the aim is to prepare a data-repository that includes cost and benefit estimates, especially from the case studies in WP5-9. For these activities we used a policy-centred approach focusing on user needs that incorporates stakeholder involvement.

More concretely, the objectives were:

- To describe methodological approaches, methods and results from Econadapt case studies, so that information can easily be picked up by users
- To deliver (used and developed) cost and benefit estimates, especially from WP5-9, explain their usage and interlink them with the original use in the project documents
- To include stakeholder input and feedback in the process

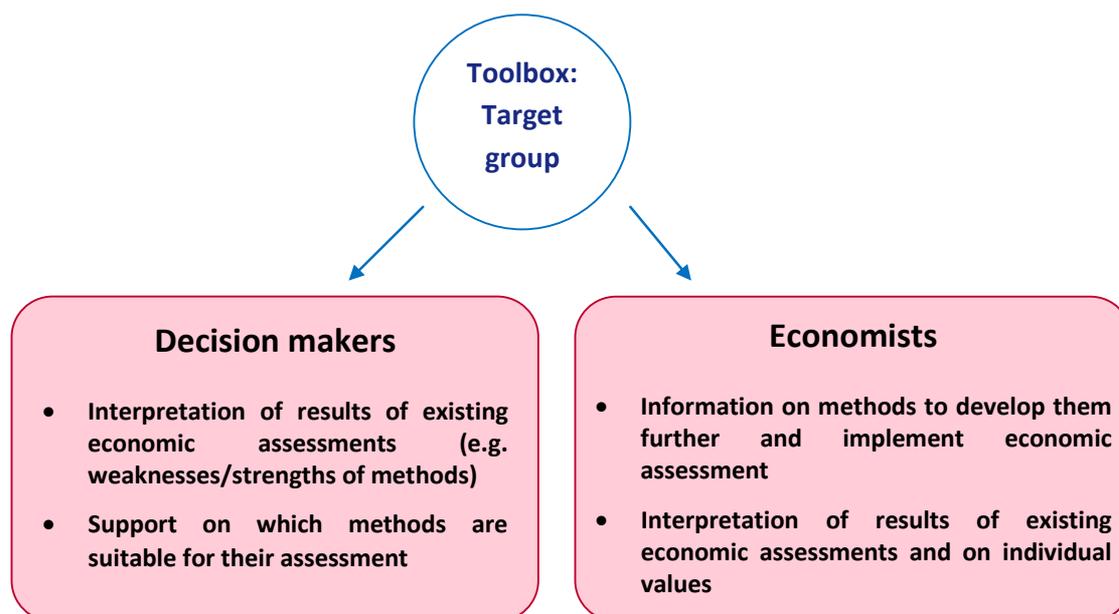
### Who are the target audience and users of ECONADAPT results?

In the DoW the toolbox target group is indicated as the two overall target groups of ECONADAPT: economists and decision-makers.

Economists can be divided into two general groups, one group which will use the method or develop it further and a group which will gather information on how to interpret results or methodological approaches (e.g. main characteristics, strengths, weaknesses, potential, uncertainties), but are not involved in the assessment themselves.

Decision-makers are a target group on European and national, regional and local level in EU Member States, but also decision-makers in international institutions, (e.g. UN, OECD), national level decision-makers outside of the EU (e.g. USA, South-Asian countries) are a target audience as well. In principle, decision-makers are interested in a quick overview to the methods and results and need an easy access to the information with good summaries and graphical representation.

**Figure 1: Target groups**



## How to reach our intended audience?

We developed three different types of products with different characteristics:

- Web-based information:
  - o Web-Toolbox <http://econadapt-toolbox.eu/>, presented in DL10.1;
  - o Data-repository <http://econadapt-toolbox.eu/data-sources>, presented in DL10.5
- Guidance documents (40 pages):
  - o The economics of climate change adaptation: Insights into economic assessment methods. (Tröltzsch et al 2016<sup>1</sup>, DL 10.2)
  - o The economic analysis of climate change adaptation: Insights for policy-makers. (Rouillard et al 2016<sup>2</sup>, DL10.3)
- Summary document (D10.4)

The different products show certain pros and cons. A website has the advantage that it is easy to reach for a broader audience, interlinkages between different information are easy to establish, links to further detailed information can be easily embedded. Cons are that the user attention is limited at a webpage, which has to be taken into account for their structure and design. Documents, e.g. in pdf-format, are delivering summarized and compact information. The single-standing documents can be reached offline. Documents have a limited ability to add or establish interlinkages to additional material or further documents. Short documents are an easy access information for busy readers and can easily be used for dissemination of project's results.

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<sup>1</sup> Tröltzsch, J., Rouillard, J., Tarpey, J., Lago, M., Watkiss, P., Hunt, A. (2016). The economics of climate change adaptation: Insights into economic assessment methods. ECONADAPT deliverable 10.2.

<sup>2</sup> Rouillard, J., Tröltzsch, J., Tarpey, J., Lago, M., Watkiss, P., Hunt, A. Bosello, F., Ermolieva, T., Goodess, C., Mechler, R., Parrado, R., Sainz de Murieta, E., Scussolini, P. (2016). The economic analysis of climate change adaptation: Insights for policy-makers. ECONADAPT deliverable 10.3.

# 3 Structure of the ECONADAPT Web-Toolbox

## General structure and entry points

The ECONADAPT Web-Toolbox (<http://econadapt-toolbox.eu>) was developed together with the Project's consortium and several decision makers were included in the design of the toolbox at different stages of their development (see chapter 3). Furthermore, the Web-Toolbox was developed based on a review of existing websites and toolboxes including information on economics of climate adaptation.

The Web-Toolbox contains the projects results in a user-friendly, easy understandable language, it is a gateway to the detailed information in the deliverables or published journal articles, it interlinks to the ECONADAPT library (with about 700 literature documents on the economics of adaptation) and the ECONADAPT data repository (with cost and benefit estimates). It interlinks and relates the two foci of the project: improved methods and different policy challenges including case studies.

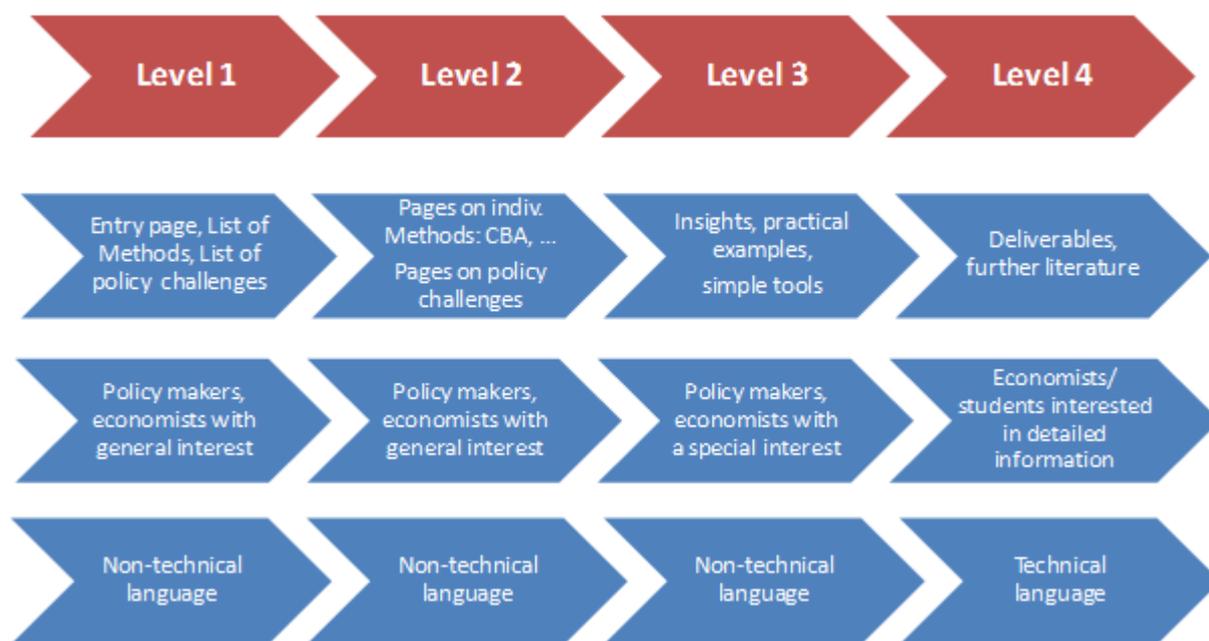
A review of existing websites showed that a "user-centered" page with a clear structure and a clean design is essential to guide users. The ECONADAPT Web-Toolbox had the aim to avoid too many layers and to focus on the relevant target group beginning at the entry page. Therefore, the entry page identifies the users and their interest based on following questions:

- *Are you interested in implementing or evaluating **a specific policy or project**?*
- *Are you interested in a **specific economic method** to evaluate your adaptation activity?*
- *Are you interested in **practical examples** and **methodological developments**?*
- *Are you interested in concrete **cost and benefit estimates**?*

Additionally, users have via the "Easy Access Guide" (<http://econadapt-toolbox.eu/easy-access-guide>) the possibility to filter web-pages along six context criteria: policy challenge, policy area, relevance of uncertainty, data availability, available budget and geographical scale. The "Easy Access Guide" filters the available information according to questions formulated based on the context criteria. To reach filtering results a flexible number of questions can be answered (one to six).

The following figure shows the general structure of the website:

**Figure 2: General structure of web-toolbox**



## Content pages at the Web-Toolbox: Policy challenges, Economic methods and Insights

Following the guiding questions at the entry page of the web-toolbox, the users will be led to sections centered around:

- **policy challenges** which are characterizing different adaptation decision situation;
- **economic assessment methods** for climate adaptation;
- widespread **detailed information** produced by the project (Insights);
- **cost and benefit estimates** (Data repository, see ECONADAPT D10.5).

### Policy challenges

In the policy challenges section, the visitor will be introduced to a **general framework** for economic analysis of climate adaptation and **several examples** on the application of the framework.

The **general framework** includes information on following seven steps relevant for an economic assessment of climate adaptation actions:

- Defining the adaptation problem
- Identify entry points and stakeholders
- Assessing the context and materiality
- Climate and risk information
- Option identification, sequencing and prioritisation
- Financing, programming and implementation
- Continuous / ex post evaluation

Additional to the general explanation of the framework, the users can reach **examples** for different adaptation decision making situations described along different steps of the framework:

**Table 1: Examples for the assessment of different policy challenges**

<i>Example from the ECONADAPT Project</i>	<i>What is it relevant for?</i>
<b>Appraising projects - An application to inland and coastal flood risk management</b>	The appraisal of infrastructure and projects considering long term climate risks
<b>Appraising policies and programmes - An application to European agricultural policy</b>	The justification of the use of large funds for climate resilience
<b>International development projects - An application to coffee production and tea plantation in Rwanda</b>	The adaptation to climate risks in developing countries
<b>Disaster risk management - An application to Austria and the EU</b>	The adaptation to extreme weather events with high short term impact
<b>Macroeconomic Assessment</b>	The analysis of climate change risks and adaptation strategies at Member State and EU level

## Economic methods

In the economic methods section of the toolbox, the following economic assessment methods are explained in more detail:

- Cost-Benefit Analysis
- Cost-Effectiveness Analysis
- Multi-Criteria Analysis
- Real Options Analysis
- Robust Decision Making
- Iterative Risk Management / Adaptive Management
- Portfolio Analysis

At first the main characteristics of different economic assessment methods applicable to climate adaptation are presented to the users (explaining for what each method is well suited, commonly used and how can be dealt with uncertainties). This overview will help users to find a suitable assessment method for their context.

Additionally, to deliver more background knowledge for each method to the user following detailed information is summarized:

**Table 2: Detailed information for each method**

<b>Headings</b>	<b>Explanation</b>
<b>Summary</b>	Key messages
<b>What does the “method” do?</b>	Short explanation on the aims of the method
<b>When should I use the “method”?</b>	Short explanation on the use of the method
<b>What are the key strengths and limitations of the “method”?</b>	Main strengths and limitations, including if and how it takes uncertainties into considerations
<b>How can you implement the “method”?</b>	Some paragraphs, including the main methodological steps when applying the method
<b>Case Study Example(s)</b>	Concrete example(s) of the use of the method (based on ECONADAPT results or literature)
<b>Simple Tool</b>	Simple excel spreadsheet-based tools which allow the use of the described methods. They are adjustable by the users to their needs.
<b>Links to ECONADAPT Insights</b>	

## Insights

The Insights include more detailed information on the results of the ECONADAPT project’s work packages. The Insights are prepared in an easy readable language so that users can easily get an impression which results are useful for their work. Furthermore, the users can reach the Insights via the relevant interlinked Policy challenges- and Economic methods- pages.

The Insights have the following structure:

**Table 3: Structure of Insights**

<b>Headings</b>	<b>Explanation</b>
<b>Key Messages</b>	Main points of the Insight on i) context, ii) policy and methodological developments, iii) main implications and recommendations
<b>Context</b>	Short explanation of the particular policy or methodological challenge discussed within the Insight
<b>Policy and methodological developments</b>	Short explanation how the particular problem/issue was dealt with, can be a description of the method or description of main results

<b>Main implications and recommendations</b>	Short explanation on the implications for adaptation decision-making
<b>Bibliography</b>	Literature sources
<b>Further Information</b>	Links to project deliverable and important literature
<b>Contact</b>	Contact details of the main author of the deliverable from which the Insight is developed
<b>Partner</b>	Names all relevant partner organizations which were part of the deliverable work (including links to organizations' websites)

The following information is available:

### **Framing of adaptation economics**

<a href="#">Framing adaptation economics in decision-making: a policy-led framework</a>
<a href="#">Sourcing and using climate information for economic assessments of adaptation</a>
<a href="#">Agriculture: Cost &amp; benefits of adaptation</a>
<a href="#">Biodiversity and ecosystem services: cost &amp; benefits of adaptation</a>
<a href="#">Coastal zones: cost &amp; benefits of adaptation</a>
<a href="#">Energy: Cost &amp; benefits of adaptation</a>
<a href="#">Health: Cost &amp; benefits of adaptation</a>
<a href="#">Infrastructure: cost &amp; benefits of adaptation</a>
<a href="#">Water and flood management: cost &amp; benefits of adaptation</a>

### **Micro-economic foundations**

<a href="#">Framework for evaluating system-wide adaptation</a>
<a href="#">Accounting for uncertainties for spatial development and adaptation to climate change</a>
<a href="#">Evaluating adaptation options through the elicitation of preferences</a>
<a href="#">Use of discounting in adaptation</a>
<a href="#">Dealing with changing preferences over time</a>
<a href="#">Treatment of future learning: Acceptable Risks Analysis</a>
<a href="#">Treatment of future learning: Real Options Analysis</a>

### **Scaling, aggregation and transfer**

<a href="#">Private adaptation of adaptation goods: potential and policy instruments</a>
<a href="#">Integrating distributional objectives in the cost-benefit analysis of adaptation options</a>
<a href="#">The Use of Non-Monetary Metrics to Assess Adaptation Actions: Multi-Criteria Analysis</a>
<a href="#">The Use of Non-Monetary Metrics to Assess Adaptation Actions: Cost-Effectiveness Analysis</a>
<a href="#">Transferring values between locations in climate change adaptation</a>
<a href="#">Applying alternative discounting rules: the Equivalency Principle</a>

## Treatment of uncertainty and risks

[Uncertainties and causes of uncertainties in climate change adaptation](#)  
[Uncertainties and risk analysis in climate change adaptation](#)  
[Integrated uncertainties and risk management for robust decision making](#)  
[Methods for expressing risk and ambiguity in economic analysis](#)  
[Assessing systemic risks in adaptation](#)

## Economic project appraisal

[Appraisal of adaptation to river flood at the Vltava river, Prague](#)  
[Appraisal of adaptation to river and coastal flood in Bilbao](#)

## Policy Impact Assessment

[Adaptive management of rural land use systems: the Common Agricultural Policy](#)  
[Risk attitudes and preferences for adaptation in agriculture](#)  
[Stochastic modelling for robust decision making: the Common Agricultural Policy](#)

## International development support

[Prioritisation of adaptation in the development context: Rwanda](#)  
[Prioritisation of adaptation in the development context: Zanzibar](#)

## Disaster risk management

[Assessing flood risk management: The Netherlands](#)  
[Assessing flood risk management: Czech Republic](#)  
[Assessing flood risk management: Austria](#)  
[Assessing flood risk management: United Kingdom](#)  
[Fiscal consequences of extreme weather risks in Europe](#)

## Macro-economic effects of adaptation

[The role of autonomous adaptation in global assessments at global level](#)  
[Economy-wide implications of planned adaptation: the case of sea level rise](#)  
[Economy-wide implications of planned adaptation: the case of agriculture](#)

## 4 Feedback process

One aim of the WP was the integration of stakeholder input and feedback in the development of the WP10-material. Following steps for the feedback process have been implemented:

**Table 4: Steps for feedback process**

Activity	Target group	Involved persons	Based on which material	Timeframe
<b>Meeting with EEA</b>	Economists	EEA	Outline, Structure of Insights	11 Febr 2016
<b>Oxford-Consortium Meeting</b>	Economists	All project partners	Outline, Structure and List of Insights, Example Insights	9/10 March 2016
<b>Written Feedback to outline and list of insights</b>	Economists	All project partners	Outline, Structure and List of Insights, Example Insights	Mid-March 2016
<b>Adaptation Futures Conference (Toolshed presentation)</b>	Decision makers, economists	Adaptation Futures participants (researchers, international, national authorities)	Outline, Structure of website, Structure of Insights	12 May 2016
<b>Discussion at the General Meeting in Athens</b>	Economists	All project partners	Draft version of different products	May 2016
<b>Feedback Workshop (Berlin)</b>	Decision makers	Local, regional and national decision makers	Test of Proto-Type of Website	21 July 2016
<b>Review by responsible partners (WP/task leads)</b>	Economists	All WP/task leaders	Draft versions of Insights, Methods-, Policy challenges Pages	May-Sept 2016
<b>Online-Feedback and Feedback Telephone Conferences</b>	Decision makers	Local, regional and national decision makers (mainly participants of Feedback workshops)	Feedback to revised Website	Mid-Sept 2016
<b>Discussion at the General Meeting in Prague</b>	Economists	All project partners	Revised/draft versions of different products	Sept 2016

The Feedback Workshop had participants from two national environmental agencies, regional governments and agencies. The Workshop included presentations of first ECONADAPT-results (literature database, case studies). It was followed by a discussion on general expectations of a web-toolbox and guidance on economics of adaptation. A user-testing of the Demo version of the web-toolbox was implemented based on developed test-profiles. Participants navigated through the toolbox and filled an online-feedback questionnaire.

A summary of the workshop feedback and the taken actions are shown in the following two tables:

**Table 5: Positive Feedback**

<b>Positive Feedback</b>
<b>Very good overview on methods/tools</b>
<b>Good “neutral” description of advantages/disadvantages of methods/tools</b>
<b>Nice rational and informative style</b>
<b>Nice clean design</b>
<b>Step-by-step Guidance was used and was indicated as helpful for search</b>
<b>Overview pages on methods – very helpful</b>
<b>Web-toolbox could serve well for staff at public authorities who would like to get an overview.</b>

**Table 6: Critical Feedback**

<b>Critical Feedback</b>	<b>Taken actions</b>
<b>A bit unclear entry page - which information is provided by the toolbox?</b>	Re-design of landing page, including short questions to guide and differentiate the users
<b>Practical examples for methods missing</b>	Prepared examples/case studies for each method
<b>Name: „Step-by-step Guide“ confusing because there are no steps</b>	Changed name to Easy-access Guide
<b>Guide: Unclarity of some questions, results of filtering more structured</b>	Changed questions slightly, added explanation for each questions (via ?-icon) , Re-structured filtering results according to method, policy challenge, insights
<b>Data repository: Values per adaptation option would be interesting</b>	Include examples for values for each adaptation option
<b>Highlighted that local language versions would be welcomed (e.g. for more general levels)</b>	-

## 5 Links to online-products

Link to the ECONADAPT Web-Toolbox

<http://econadapt-toolbox.eu/>

Sources for data on costs and benefits of adaptation

<http://econadapt-toolbox.eu/data-repository>

Library of publications related to adaptation economics

<http://econadapt-library.eu/>

Further policy briefs; video summaries and Deliverables of the project

<http://econadapt.eu/>

Insights into the economics of adaptation

Detailed information is available [here](#).