

PUBLIZIERBARER ENDBERICHT

A) Projektdaten

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B) Projektübersicht

1 Kurzfassung

Die Auswirkungen des Klimawandels sind vor allem auf der regionalen und lokalen Ebene spürbar. Daher spielen sub-nationale Ebenen in der Anpassung an klimawandelbedingte Veränderungen eine wichtige Rolle. Bislang fehlte es politischen EntscheidungsträgerInnen in Österreich auf der lokalen, regionalen und Landesebene an konkreter Unterstützung bei der Entwicklung von Anpassungspolitiken für den Umgang mit Klimawandelfolgen. Wie die Recherche zu internationalen Anpassungsleitfäden zeigte, fokussieren diese vorderhand auf den Prozess auf nationaler Ebene. Außerdem fehlten Entscheidungsunterstützungen in der Anpassung, welche die Besonderheiten Österreichs in geographischer, politischer, institutioneller oder kultureller Hinsicht adressieren.

Vor diesem Hintergrund zielt das Projekt FAMOUS („Factory for Adaptation Measures Operated by Users at different Scales“) darauf ab, die Anpassung an den Klimawandel in den Bundesländern, in Regionen und Städten Österreichs zu unterstützen und zu fördern. Dies soll mit maßgeschneiderten Methoden und Werkzeugen erfolgen, die in einem Handbuch zusammengefasst werden.

Das Handbuch (Prutsch et al. 2014) teilt den Anpassungsprozess in drei Phasen ein: i) Basis für die Anpassung schaffen; ii) Risiken erkennen und Lösungen finden und iii) Aktionen setzen und begleiten. Für jede dieser Phasen steht dabei eine Sammlung von Methoden und Werkzeugen zur Verfügung, die einer Art „Werkzeugkasten“ entspricht: Die AnwenderInnen können und sollen jene auswählen, die für ihre jeweilige Fragestellung und dem jeweiligen Kontext am besten geeignet sind. Methoden und Werkzeuge die als besonders wesentlich eingestuft werden, sind mit einem Rufzeichen-Symbol gekennzeichnet.

Darüber hinaus zielt das Handbuch darauf ab, mögliche Herausforderungen im Anpassungsprozess proaktiv zu überwinden. Zusätzlich geht das Handbuch auf österreichische Besonderheiten hinsichtlich Kompetenzverteilung, institutionelle Strukturen, usw. ein. Dafür wurden im Rahmen des Projekts Analysen zu einem besseren Verständnis der Multi-Level Governance von Anpassung in Österreich durchgeführt (Clar & Steurer 2014).

Das Handbuch baut auf einer Synthese von bestehenden Leitfäden für die Anpassung an den Klimawandel auf (Clar et al. 2013). Über 30 Leitfäden wurden analysiert und hinsichtlich der Übertragbarkeit auf österreichische Gegebenheiten untersucht. Die zweite wesentliche Komponente in der Entwicklung des Handbuchs war die Zusammenarbeit mit AkteurInnen der Zielgruppe. Im Rahmen von sechs Workshops wurden die Anforderungen der Bundesländer, Regionen und Städten Österreichs erhoben und in konkrete Entwürfe des Handbuchs eingearbeitet. Dies garantiert, dass die Methoden und Werkzeuge praktisch anwendbar sind und die Zielgruppe in ihrem Arbeitsalltag unterstützen. Im dritten Schritt wurden die Methoden und Werkzeuge in zwei Testregionen (Land Oberösterreich und Region Waldviertel) gemeinsam mit AkteurInnen vor Ort erprobt und evaluiert. Das Feedback aus diesen Prozessen wurde für eine Überarbeitung des Handbuchs herangezogen. Durch diesen „Praxistest“ können die Methoden und Werkzeuge noch besser auf die Erfordernisse der NutzerInnen abgestimmt werden.

Das finale Handbuch mit dem Titel „Methoden und Werkzeuge zur Anpassung an den Klimawandel. Ein Handbuch für Bundesländer, Regionen und Städte“ steht als Download in deutscher und englischer Sprache zur Verfügung¹.

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http://www.klimawandelanpassung.at/ms/klimawandelanpassung/de/anpassungandenklimawandel/kwa_tools/kwa_leitfaden/kw_lffamous/

2 Executive Summary

Adaptation to climate change is a key challenge at the provincial, regional and local levels due to the fact that climate change impacts materialise here in manifold ways. In Austria, most provinces, regions and cities have not yet started with a deliberate and coordinated process of climate change adaptation within their responsibilities as support is missing. Some complex guidelines for adaptation planning, mostly on national level and for certain sectors, are available and could give some direction. However, they do not address Austrian particularities regarding the diverse geographical setting, the federal political system and respective multi-level governance considerations, and the political culture.

To draw attention to the specific conditions of adaptation at provincial, regional and local levels – the levels of government where concrete adaptation actions are most urgent – some “translation” work is needed and new tailor-made tools for adaptation are required. Developing, applying, refining and disseminating adaptation-toolkits which help to tackle the challenges of adaptation in Austria is at the core of FAMOUS, the “Factory for Adaptation Measures Operated by Users at different Scales”. Thus, a toolbox for adaptation to climate change (in the format of a handbook) has been developed in transdisciplinary cooperation with foreseen users, comprising tailor-made methods and tools for policy and decision makers.

Based on stock taking results (e.g. on existing work done in the field of adaptation support and advice; barriers in adaptation, etc.), results from the multi-level-analysis and stakeholder needs and experiences, the following three toolkits have been developed to be presented in a handbook (Prutsch et al. 2014). They address the main steps of the policy cycle:

- 1 The “Creating a foundation for adaptation” toolkit aims to support the agenda setting stage of policy making (e.g. by providing information material and references).
- 2 The “Identifying risks and finding solutions” toolkit is concerned with facilitating decision-making (e.g. prioritisation of main impacts, by providing checklists for mainstreaming adaptation and concrete adaptation measures).
- 3 The “Implementing and monitoring actions” toolkit aims to foster the implementation and evaluation (e.g. evaluation approach).

In more details, the handbook aims to address barriers which might hinder the adaptation policy process proactively (Clar et al. 2013) as well as Austrian particularities regarding the political system and respective multi-level governance considerations (Clar & Steuerer 2014). The conclusions drawn from this analysis guaranteed that the toolkits address key issues of adaptation adequately.

The development process was carried out in close cooperation with stakeholders which are also potential users of the handbook. Within six workshops we have discussed draft versions of the handbook. The results of the workshops were included in the handbook. In a next step, the methods and tools of the handbook were practically tested in two case study areas (Lower Austria, Waldviertel region). The handbook was adjusted accordingly to the outputs from evaluating the performance of the implementation process.

The final handbook with the title "Methods and Tools for Adaptation to Climate Change. A HANDBOOK FOR PROVINCES, REGIONS AND CITIES" is made available for download from the platform www.klimawandelanpassung.at² in German and English.

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http://www.klimawandelanpassung.at/ms/klimawandelanpassung/de/anpassungandenklimawandel/kwa_tools/kwa_leitfaden/kw_lffamous/

3 Background and objectives

Background / motivation for the project

Indeed, adaptation to a changing climate is not new: humans have a long record of adapting to climate variability and thus have developed certain practices and tools, e.g. in coastal defence or disaster risk management (Füssel, 2007). Nonetheless, adaptation to the expected rapid future climate change poses various new challenges for planners and decision makers. Adaptation to climate change is a complex task because it involves uncertainties regarding future climate change and its regional impacts; it affects most societal sectors as well as all levels of decision-making (Prutsch et al. 2014). Addressing all challenges from a broad perspective is crucial to understand how adaptation actions will actually meet their purpose of reducing the vulnerability and/or building resilience to climate change.

Since several years, the EU and its Member States have undertaken proactive adaptation actions in the sense that they are developing strategies based on future climate change projections (EC 2013, EEA 2013). In general, these national adaptation strategies aim to address the challenges of adaptation at the national level and provide a frame for adaptation action to be taken at the provincial, regional and local levels of government (Swart et al. 2009, EEA 2013). Adaptation to climate change is a key challenge at the provincial, regional and local levels due to the fact that climate change impacts materialise here in manifold ways.

Some complex guidelines for adaptation planning, mostly on national level and for certain sectors, are available and could give some direction for adaptation at provincial, regional and local level (Willows & Connell 2003; Burton et al. 2004; Lim et al. 2004, Kropp & Scholze 2009; Ribeiro et al. 2009; ICLEI 2008; UNECE Water 2009, EC 2013). Several aspects of adaptation are commonly recognized as key success factors among practitioners and in the existing literature (Prutsch et al., 2010). However, they do not address Austrian particularities regarding the diverse geographical setting, the federal political system and respective multi-level governance considerations, and the political culture. To draw attention to the specific conditions of adaptation at provincial, regional and local levels – the levels of government where concrete adaptation actions are most urgent – some “translation” work is needed and new tailor-made tools for adaptation are required. Developing, applying, refining and disseminating adaptation-toolkits which help to tackle the challenges of adaptation in Austria is at the core of FAMOUS, the “Factory for Adaptation Measures Operated by Users at different Scales”.

Objectives of the project

When starting with the project FAMOUS, adaptation on the provincial, regional and city level in Austria was still a novelty and sufficient tools and methods for adequate adaptation planning which tackle the challenges of adaptation were largely lacking. Thus, the overriding objective of FAMOUS was to facilitate the adaptation to climate change in Austrian provinces, regions and cities by better understanding respective policies and by developing, applying, refining and disseminating new, tailor-made toolkits.

That strategic objective of FAMOUS can be dissolved to more operational goals, main strands of activities and allocated to work packages as follows:

- to review the challenges, barriers and success factors of adaptation that are identified in the literature (in particular with relevance for provincial, regional and local levels of policy-making) to make sure that FAMOUS toolkits addresses all key issues of adaptation;
- to analyse the multi-level governance of selected adaptation policies in Austria to guarantee that the toolkits address the key issues of adaptation adequately;
- to act as an interface between several projects at the European level on the one hand and to national adaptation efforts on the other;

- to establish an “adaptation factory” producing three toolkits (summarised in the format of a handbook), each of them providing a pool of methods and tools for all stages of the adaptation process at different levels of government. The toolkits/handbook shall be (a) practical and easy to use, also for non-experts, (b) modifiable to case specific conditions and (c) transferable to other provinces, regions and cities in Austria;
- to elaborate the toolkits transdisciplinarily with key stakeholders from the case study areas and potential users (e.g. policy makers in public authorities at provincial and city level, Austrian Association of Cities and Towns, regional actors), representing the three levels addressed by FAMOUS, i.e. (i) a province, (ii) a region and, (iii) a city;
- to secure that the FAMOUS toolkits best meet the demands and needs of the intended user groups by testing them in two case study areas: (i) in the province Upper Austria and (ii) in the region Waldviertel. Evaluation results will be used to refine and improve the toolkits.

4 Content and results

Figure 1 shows the work package (WP) structure and reflects the workflow within FAMOUS. Based on an extensive review and analysis (WP1) of project relevant literature (adaptation instruments, guidelines and tools, policies etc.) and on information related to the multi-level governance approach gathered in WP2 by literature review and expert interviews, the development phase of the three “How-To” Toolkits (WP3) has been carried out. The toolkits strongly incorporated practical knowledge from stakeholders who represent the intended user group. In addition, external experts from the FAMOUS advisory panel provided active input in the preparation and development of the toolkits. The toolkits presented in the format of a handbook been applied and tested in two case study areas. An evaluation scheme was set up (WP5) to be able to use the results from the implementation phase for refinement and improvement of the toolkits meaningfully. FAMOUS disseminated the project results twofold: to the scientific community and potential users of the toolkits (WP6a, done by the project team) and to the general public (WP6b, done by the key stakeholders from the case study areas). The project management (WP7) was responsible that all deliverables specified in the WPs are finalised timely and in high quality.

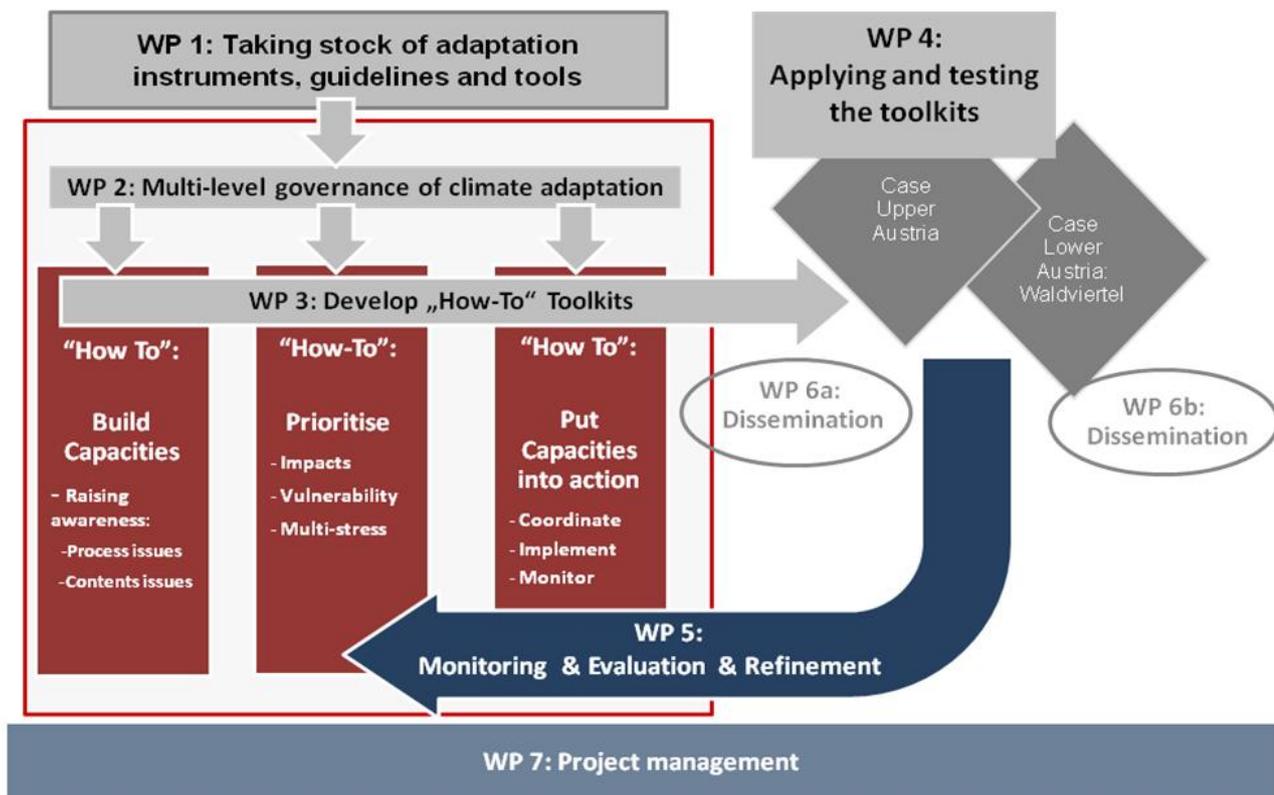


Figure 1: FAMOUS workflow divided by work packages (WPs)

Description of the results and project milestones

Taking stock of adaptation instruments, guidelines and tools (WP1):

While taking stock of existing and relevant work (e.g. guidelines, decision support tools, toolkits) carried out in Europe and elsewhere (e.g. Australia, Canada), we have gained insight into the nature of such instruments, their benefits as well as limitations. This rich knowledgebase built the basis for the development of FAMOUS handbook. In addition, we have analysed relevant research on barriers in adaptation policy and developed a classification to be used for the development of the FAMOUS handbook. This allowed us to create toolkits which address barriers proactively.

In detail, the objectives of WP1 were:

- to gain deeper insight into the challenges, barriers and success factors of adaptation policies, in particular at the provincial, regional and local levels of government;
- to analyse existing instruments, guidelines and tools in climate change adaptation and provide an extensive overview of what is available to overcome the challenges and how it can be applied to different levels of decision making and sectors;
- to capitalize on existing knowledge and research results (e.g. on climate modelling, vulnerability assessment) and refine it for Austrian decision makers in provinces, regions and cities.

Results:

As the literature on adaptation policies points out, numerous barriers impede their development and implementation. Among the barriers are e.g. the often complained lacks of awareness, certainty, resources and political commitment. Since these and several other barriers can be overcome (e.g. by raising awareness and by increasing resources), decision support frameworks (e.g. written guidelines) have been developed that aim to do exactly this: facilitate adaptation policy making, inter alia by highlighting barriers and by suggesting procedures and tools to overcome them. Surprisingly, most of the guidelines are hardly linked to the scientific literature on barriers, at least they do not provide respective references.

The scientific paper prepared within WP1 closes this gap by linking research on barriers and existing guidelines for adaptation policy making as follows: In a first step, it takes stock of the barriers addressed in the adaptation policy literature (review of 49 articles) and provides a structure following the policy cycle. In a second step, it briefly reviews the characteristics and the contents of 32 guidelines. In a third step, it analyses the contents of 12 guidelines thoroughly and compares it with the barriers identified earlier.

The analysis shows that barriers do play a key role in most of the guidelines analysed. Nevertheless, the consistency between the barriers identified in the literature and those addressed in the guidelines varies considerably from guideline to guideline and from barrier to barrier. Overall, the paper shows that the development of adaptation policy guidelines seems to be based more on practical experience than on a systematic review of existing knowledge.

Multi-level governance of climate change (WP2):

In order to gain a clear understanding of the multi-level governance framework of the case study areas, we carried out an analysis of the dispersion of responsibilities in the policy fields of flood water protection in Lower Austria's Waldviertel and tourism in Upper Austria. The analyses provided insights regarding possible gaps in the respective governance arrangements and obstacles which hinder the implementation of adaptation policies.

Since climate pressures and adaptation responses cut across different levels of government, from the EU via the national to the provincial and local levels of policy making (European Commission 2007; Klein et al. 2007), facilitating adaptation effectively (with toolkits) requires a clear understanding of the multi-level governance framework in place, and eventually of innovative governance approaches that help to bridge the gaps between different levels of governance.

With WP 2 we provided tailored input to the development of the three "How-To" Toolkits. The overall objectives were:

- to better understand the multi-level governance of selected adaptation issues (such as flood prevention in river valleys);
- to explore in how far the barriers and success factors of adaptation as identified in the literature apply to the multi-level governance of adaptation in Austria;

- to guide the development of the “How-To” Toolkits and assure that they address the key issues of adaptation at various sub-national levels.

Results:

The research conducted under WP2 focused on adaptation in the tourism sector in Upper Austria and on adaptation in flood water protection in the Waldviertel region of Lower Austria. Both case studies have been conducted in parallel over the summer 2011. They combined (a) a review of the multi-level governance literature with respect to climate change adaptation, (b) studies on key adaptation challenges in the respective case study areas, and (c) nine semi-structured interviews with policy makers responsible for the respective adaptation issues in the two regions. As planned, the following questions have been answered:

- How are the responsibilities on selected key issues of climate change adaptation in the case study areas dispersed across different levels of government? Who is responsible for what?
- To what extent and with what means do different actors coordinate their activities?
- What are the main challenges of adaptation at various levels of government and in how far do the challenges differ between the levels?

Answering these questions lead FAMOUS to a better understanding of the interests and resources of main state and non-state political actors as well as the societal stakeholders involved in the two case study areas, referring to the selected adaptation issues (tourism and flood water protection). Furthermore, WP2 identified gaps in the multi-level governance frameworks as well as other (political) shortcomings and obstacles that are likely to hinder the implementation of adaptation policies (both to be addressed by the three “How-To” Toolkits).

The results of the analyses are documented in two case study reports, and they have been published as a journal article in Österreichische Zeitschrift für Politikwissenschaft.

Develop “How-To” Toolkits (WP3):

Within WP3, three toolkits for the adaptation process (cf. Figure 2) have been developed transdisciplinary and are presented in the format of a handbook:

- 1 The “Creating a foundation for adaptation” toolkit aims to support the agenda setting stage of policy making (e.g. by providing information material and references).
- 2 The “Identifying risks and finding solutions” toolkit is concerned with facilitating decision-making (e.g. prioritisation of main impacts, by providing checklists for mainstreaming adaptation and concrete adaptation measures).
- 3 The “Implementing and monitoring actions” toolkit aims to foster the implementation and evaluation (e.g. evaluation approach).

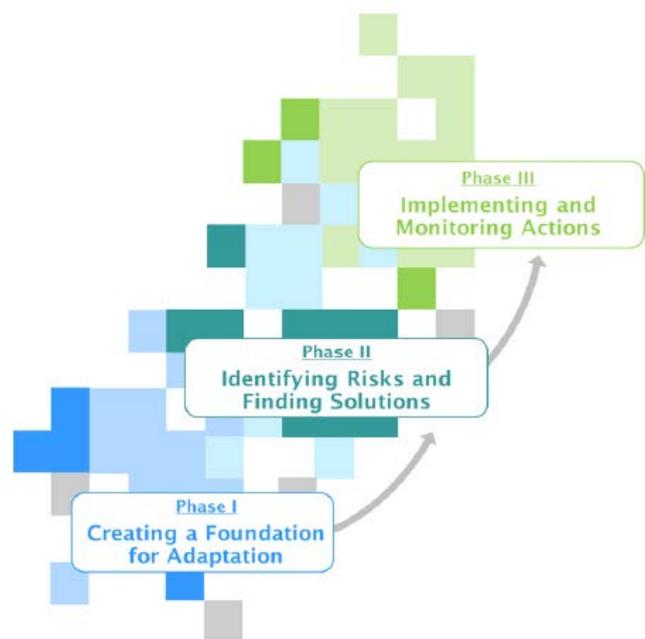


Figure 2: Three toolkits of the handbook

In detail, the *objectives* of WP3 were:

- to develop solutions for methodological and practical problems (identified in WP1 & WP2) of adaptation in provinces, regions and cities;
- to set up toolkits for building capacity, prioritisation and implementation of adaptation actions and help decision-makers to gain a deeper understanding of the character of the problem and the range of alternatives.

As mentioned before, the development process of the toolkits was carried out in close cooperation with approx. 10 stakeholders which are also potential users of the handbook. Within six one-day-workshops between April 2011 and September 2012, the stakeholders have activity provided input and feedback to draft versions of the handbook. The needs of key stakeholders were discussed at following meetings:

- Kick off workshop on the 28 April 2011 (from 10am-4pm): presentation of FAMOUS project (goals, structure, workflow, etc.); clarification of stakeholders' expectations and their needs, discussion on their possible cooperation, feedback and outlook.
- 1st workshop was held on the 7 December 2011 (from 10am-4pm): discussion on barriers and challenges of adaptation, input to the question on multi-level governance in adaptation, presentation of existing guidelines and handbooks, content discussion on first draft of toolkit 1: "Create the ground for adaptation".
- 2nd on the 15 March 2012 (from 10am-4pm): feedback to revised version of toolkit 1 "Creating a foundation for adaptation" (e.g. on language use, key issues to be included, structure), needs for additional adaptation methods and tools, presentation of first draft of toolkit 2: "Identifying risks and finding solutions", discussion and feedback to toolkit 2.
- 3rd workshop on the 11 May 2012 (from 2pm-5pm): feedback to revised versions of toolkit 1 and toolkit 2, presentation of first draft of toolkit 3: "Implementing and monitoring actions", discussion and feedback to toolkit 3.
- 4th Workshop on the 21 June 2012 (from 10am-1pm): overall discussion on project set-up and cooperation, final round of feedback to three toolkits, questions focussing on dissemination of handbook, next steps.
- 5th workshop on the 5 September 2012 (from 1pm-5pm): discussion focussing on testing handbook in two case study regions, process design, selection of methods, etc.



Figure 2 & Figure 3: Workshop with stakeholders representing the intended target group (left: Clar 2011, right: Felderer 2011)

The results of all six workshops were included in the draft version of the handbook. In addition to the discussion at the workshops, stakeholders were invited to provide written feedback on various draft versions of the handbook.

In addition, important input for the development of the FAMOUS handbook was received from the international advisory board established within the project. Five experts working in the field of adaptation research and/or policy advise from Germany, UK, Italy and Denmark have provided feedback on draft versions of the handbook and shared their experiences with working with stakeholders, providing adaptation support, etc. Therefore, we have carried out two workshops in Vienna on the 21 June 2011 and 5 October 2012 as originally proposed in the project outline.

Results:

The main result of WP3 is the final handbook to support adaptation in Austrian provinces, regions and cities. The handbook is approx. 230 pages long and follows the following outline:

- **Introduction**
 - Objectives, Structure, and Use of the Handbook
 - Climate Change and Adaptation
 - Challenges in the Adaptation Process
- **Part 1: Three phases of the adaptation process**
 - Phase I: Creating a Foundation for Adaptation
 - Phase II: Identifying Risks and Finding Solutions
 - Phase III: Implementing and Monitoring Actions
- **Part 2: Collection of methods and tools for adaptation**
 - Phase I: Creating a Foundation for Adaptation
 - Phase II: Identifying Risks and Finding Solutions
 - Phase III: Implementing and Monitoring Actions

Beside an introduction on the different steps within the adaptation process itself, the handbook offers - approx. 50 different methods and tools which aim to support the target group when designing, selecting, implementing and evaluating adaptation processes and measures.

Applying and testing the toolkits (WP4):

The tools and methods in the handbook were practically tested in two case study areas, representing the provincial and regional level: in the province of Upper Austria and the Waldviertel region. Based on an assessment of the specific conditions in each of the two areas, in cooperation with the key stakeholders from the case study area (policy maker in the field of Climate mitigation from provincial public authority in case of Upper Austria and manager of the Association of Town and Village Renewal for the Waldviertel region), we have decided which tools out of the parts from the FAMOUS handbook will be most appropriate for appliance. The tools have been applied and tested within workshops which have been carried out in the case study areas.

In detail, the objectives of WP4 were:

- to set up the design for a science-policy based stakeholder process in adaptation for the case study areas;

- to prepare, conduct and test the implementation of the toolkits in the case study areas via workshops with regional stakeholders;
- to summarise results.

Results:

In the province of **Upper Austria**, the key stakeholder was taking the issue of adaptation to climate change on board and arranged the institutional settings within the provincial public authority to be able to work on the issue of adaptation. He developed in close cooperation with the Umweltbundesamt the process design for adaptation in Upper Austria. The process design was based on the suggestions from the FAMOUS handbook and in addition, information from the handbook was used for developing the adaptation strategy. The Umweltbundesamt supported the development process by attending the Kick-off as well as all ten thematic workshops for discussing potential climate change impacts and possible adaptation measures:

- Kick-Off in Linz, Upper Austria on 8 October 2012 (from 9am-1pm): input presentation on climate change, impacts and adaptation, introduction of approach taken towards Climate change adaptation strategy for Upper Austria, support provided by methods and tools from FAMOUS, practical examples on adaptation, discussion and next steps.
- Ten thematic workshops in Linz, Upper Austria on 5 November, 6 November and 3 December 2012 (from 8.30am-17pm): sectoral workshops (each approx. 2,5 hours long) were held to discuss the following themes: tourism, nature conservation, energy, agriculture, building and construction, forestry, health, civil protection, insurance and transport infrastructure. For each sector, possible climate change impacts and adaptation measures were discussed. In total, approx. 50 experts from the provincial public authority, interest groups, NGOs, etc. attended the workshops.

The results from these workshops built the base for the Climate change adaptation strategy for Upper Austria. This adaptation strategy of the province Upper Austria was the first regional adaptation strategy in Austria.³

In case of Waldviertel region, the issue of climate change adaptation was a novelty and thus, more support within the FAMOUS project was needed by the key stakeholder working for the Association of Town and Village Renewal for the Waldviertel. The process design for the implementation phase, the workshop methods applied and the compilation of the results have been created and documented by the project lead Umweltbundesamt. In addition, procedure documentation as input for the discussion for all workshops has been prepared by the Umweltbundesamt (based from the FAMOUS handbook). Two experts from Umweltbundesamt were attending all workshops in the case study regions and providing input (via presentation, discussions in working groups, etc.).

- Kick-Off in Waldviertel on 23 May 2012 (from 6pm-9pm): input presentation on climate change and impacts, introduction to the concept of adaptation to climate change and possibilities for regions to act on adaptation, support provided by methods and tools from FAMOUS, discussion and next steps.
- Three thematic workshops in Waldviertel on 17 April, 18 April and 22 April 2013 (from 1pm-5pm): sectoral workshops (each 4 hours long) were carried out in the region of Waldviertel, focusing on the following themes: health, agriculture and forestry and issues concerning the municipal level. The aims of these workshops were to identify serious climate change

³ http://www.land-oberoesterreich.gv.at/files/publikationen/us_klimawandelanpass.pdf

impacts for the region (today and in future 2020/2050), analyse existing adaptation relevant measures, select further measures which are needed, discuss the support needed, etc.

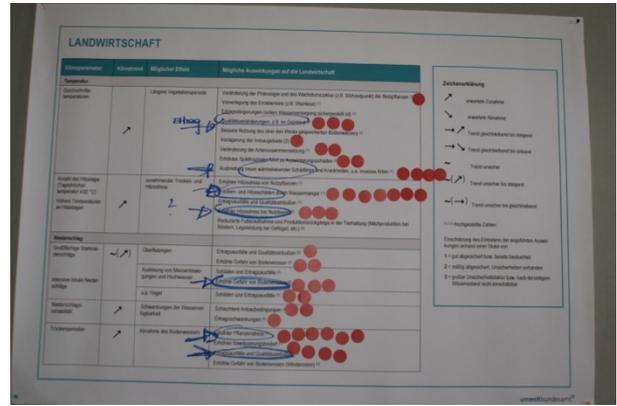


Figure 6 and Figure 7: Thematic workshop in Waldviertel (Strummer 2013)

In total, approx. 40 regional experts from various interest groups, NGOs, etc. attended the three workshops.

- **Final conference in Waldviertel on 2 July 2013 (from 7pm-9pm):** introduction and summary on the process in Waldviertel, presentation on future climate change impacts, measures to be discussed for adaptation in the region, next steps for implementation. More than 60 regional experts have attended the final conference.

The results of the adaptation process in the Waldviertel region have been documented by the Umweltbundesamt and can be found in the internet⁴.

In general, the following methods and tools from the FAMOUS handbook have been used and practically tested in the province of Upper Austria and the Waldviertel region (some have been adjusted to the specific context):

The Case for adaptation (A.1); Guidelines: establishing an adaptation core team (A.2); Factsheet: Climate change mitigation and adaptation (A.3); Factsheet: Political framework for adaptation (A.4); Factsheet: Climate change (B.1); Factsheet: Impacts of climate change (B.2); Good-practice example on adaptation (B.11); Status Quo survey on adaptation (C.1); Actor selection and analysis (D.1); Tips for stakeholder involvement (D.2); Overview: potential formats for stakeholder involvement (D.4); Inventory: Current weather- and climate induced problems (F.1); Worksheets: Consequences of climate change (F.4); Worksheets: Measures for adaptation to climate change (G.1); Structuring suggestion: Development of measures (H.1); Structuring suggestion: Strategy with integrated action plan (K.1); Tips for successful implementation (L.1).

Monitoring, evaluation and refinement (WP5):

The development of the toolkits was performed as an iterative learning process, which allows an ongoing integration of new findings. To keep the learning process systematically, a monitoring scheme for applying and testing of the toolkits (WP4) was needed. Thus, a questionnaire was developed for stakeholders attending the workshops. In addition, qualitative interviews with key stakeholders from the case study area were conducted.

⁴ <http://www.dorf-stadterneuerung.at/content.php?pageId=9255>

The results from monitoring and evaluation were included in the refinement of the toolkits. This was an important component of the adaptive management approach which continuously allows incorporating the lessons learned and the best knowledge available.

WP5 was conducted as outlined in the proposal. In detail, the objectives of WP5 were:

- to develop a criteria-based monitoring and evaluation scheme (in the format of a questionnaire)
- to monitor and evaluate performance and output of the implementation process in the two case study areas
- to integrate end-user requirements and lessons learned from stakeholder process and refine the three toolkits and the concept for stakeholder dialogue in adaptation planning for provinces, regions and cities

Results:

To be able to collect feedback from stakeholders systematically, we have developed a short questionnaire for regional stakeholders working with the handbook. The questionnaire was basically touching on three issues: (i) Overall feedback to the handbook (e.g. how intensive have you worked with the handbook, feedback to structure, content, information provision, length, coverage, practicability); (ii) Feedback to specific tools and methods (e.g. relevant for practical application, supportive, understandable); (iii) Further suggestions for improvement of handbook and/or tools and methods.

The tenor from the 10 regional experts providing us feedback to the handbook was very positive: the handbook was seen as very helpful and supportive for their adaptation process. The information was evaluated as relevant, understandable and practical. Nevertheless, they stated that the extent of information is rather comprehensive and might be difficult to capture for adaptation beginners. Thus, the suggestion was to provide more guidance on how to use this handbook. This suggestion and others were addressed in the final version of the handbook.

5 Conclusions

An overview and summary of the findings within this project can be found in chapter 4. Beside this, we would like to highlight selected findings from all work packages carried out within FAMOUS, especially focusing on the development process of the handbook and the testing phase:

Adaptation support → general findings:

- Involve end users/target groups in the development process as early as possible;
- Identify the state of knowledge of stakeholders representing the target group and clarify their needed support;
- Understand the challenges the target group is faced with when working on the issue of adaptation;
- Establish clear link to real policy process and existing structures, activities, etc. in order to pick up stakeholders in their every days life;
- Build the handbook on existing evidence base from a wide range of disciplines, expertise and practical experiences from others, but adjust it based on your users' needs and particular situations;
- Provide support for stakeholders with different levels of experiences and guide the users through the handbook based on their experiences;
- Give positive examples and good practice on adaptation as inspiration for stakeholders;
- Suggest a wide range of adaptation options to enhance imagination how manifold adaptation can look like;
- Create adaptation support in a way which helps to overcome barriers in adaptation policy making;
- Develop tools and methods to deliver practical adaptation actions (knowing that this is still a novelty);
- Suggest a simple and widely applicable monitoring and evaluation system.
- One adaptation handbook for Austrian provinces, regions and cities cannot take all particularities into account and thus, tools and methods need to be adjusted when used;
- Be aware that target group of the handbook will most likely need additional support for using the tools adequately (e.g. trainings) as the issue of adaptation is still new and rather complex.
- Be aware that information does not automatically lead to action; thus, the handbook needs to be disseminated via various chancels (e.g. personal discussions, workshops, trainings).

Within FAMOUS, support was provided for adaptation processes on provincial, regional and city level. In Austria, 2.353 municipalities are still overwhelmed with the issue of climate change adaptation. When it comes to improve the future climate resilience of municipalities, they do not yet have capacities (e.g. necessary information, personal resources to start with the issue from scratch and design effective adaptation measures to be implemented at local level) at hand to tackle these climate related problems in the short, medium and long term and to set specific adaptation actions within their authorities. So far, Austrian municipalities have not received any support to deal with the impacts of climate change in a systematic way and they were also out of scope within the project FAMOUS.

Thus, the municipality level will be the main focus of a follow-up project of FAMOUS which will be started in September 2014. The project called "Climate change adaptation in municipalities: raising awareness and building capacities for action in Austria" (CC-ACT; financed by the Climate and Energy Fund; led by the Environment Agency Austria/Umweltbundesamt in cooperation with University of Applied Science Austria, UKCIP and Umweltdachverband) aims to provide support in the new topic of adaptation for Austrian municipalities which do or will face climate change related

problems. Actors who have long-standing experience in the work with local authorities are central to the project and in close partnership with them, municipalities needs and solutions will be translated into adaptation tools and training materials. With the project CC-ACT, we aim to go one step further in the direction of co-creation and co-production of knowledge in order to build capacities for action on climate change adaptation at municipal level.

C) Project details

6 Methods

WP 1 (Taking stock of adaptation instruments, guidelines and tools) was built on existing research and thus desk research, literature review and analysis were used to gain insight into and an overview of existing knowledge on barriers in adaptation, as well as tools and methods to overcome them.

In order to gain a clear understanding of the multi-level governance framework of the case study areas, in WP 2 an analysis of the dispersion of responsibilities in the policy fields of flood water protection in Lower Austria's Waldviertel and tourism in Upper Austria was carried out. The analyses were based on desk research and semi-structured interviews with representatives of all relevant governmental levels and provided insights regarding possible gaps in the respective governance arrangements and obstacles which hinder the implementation of adaptation policies.

WP 3 summarizes the results from WP 1, WP 2 and the discussions with potential users (cf. Figure 3). Thus, it builds on research conducted in the other WPs, literature review on existing guidelines and further scientific results as well as the stakeholders' knowledge and needs.

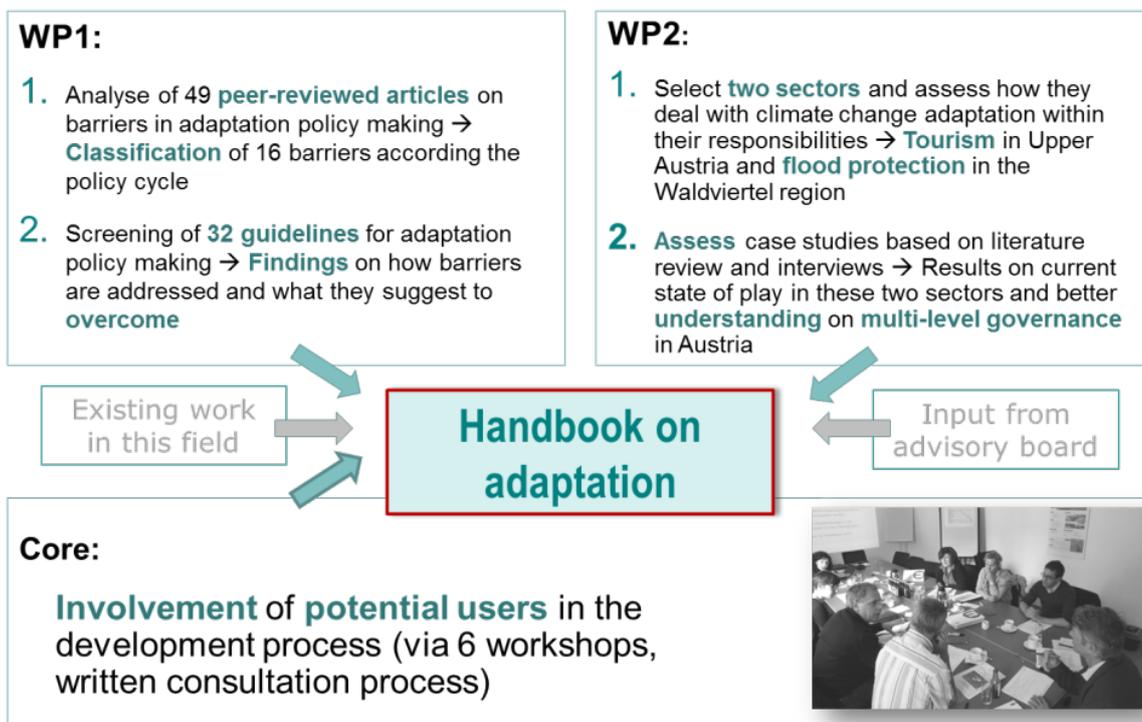


Figure 4: Elements in the development process of the FAMOUS handbook

Applying and testing the toolkits developed in WP3, was the main content of WP 4. The tools and methods in the handbook were practically tested in the province of Upper Austria and the Waldviertel region. Therefore a series of workshops were carried out in the case study areas (for more details see chapter 4).

8 Publications and dissemination

Final handbooks

PRUTSCH, A., FELDERER, A., BALAS, M., KÖNIG, M., CLAR, C., STEURER, R. (2014): Methoden und Werkzeuge zur Anpassung an den Klimawandel. Ein Handbuch für Bundesländer, Regionen und Städte. Umweltbundesamt, Wien.

http://www.klimawandelanpassung.at/ms/klimawandelanpassung/de/anpassungandenklimawandel/kwa_tools/kwa_leitfaden/kw_lffamous/

PRUTSCH, A., FELDERER, A., BALAS, M., KÖNIG, M., CLAR, C., STEURER, R. (2014): Methods and Tools for Adaptation to Climate Change. A Handbook for Provinces, Regions and Cities. Environment Agency Austria, Wien.

http://www.klimawandelanpassung.at/ms/klimawandelanpassung/de/anpassungandenklimawandel/kwa_tools/kwa_leitfaden/kw_lffamous/

Conference presentations

The results of FAMOUS have been presented and discussed within the scientific community at various national and international conferences.

The results from WP1 on linking barriers in adaptation policy making with information provided in guidance on how to overcome them have been presented and discussed at two scientific conferences:

- The governance of adaptation conference in Amsterdam from 22-23th of March 2012 (cf. the paper under <http://www.adaptgov.com/wp-content/uploads/2012/03/Clar-Barriers-guidelinesinadaptation-policy-A86-Tscience.pdf>).
- Chameleon Research Workshop on Barriers to Adaptation to Climate Change in Berlin from September 18th – 21st 2012 (cf. the presentation under: http://www.climate-chameleon.de/documents/workshop_documents/Andrea%20Prutsch.pdf).

The draft version of the handbook (result from WP3) has been presented and discussed at the following expert workshops/conferences:

- Environmental Protection Agency meeting on the 5th of March 2012 in Dessau.
- 13. Klimatag in Vienna on the 14th and 15th of June 2012 (cf. the presentation under: http://www.austroclim.at/fileadmin/user_upload/13_Klimatag2012/Vortraege/V24_Prutsh.pdf).
- Conference on Climate Change Adaptation in Helsinki from 29-31th August 2012 (cf. the presentation under http://www.nordicadaptation2012.net/Doc/Oral_presentations/2.1.2_Prutsh.pdf).

Scientific papers

- Clar, C.; Prutsch, A. & R. Steurer (2013): Barriers and guidelines for public policies on climate change adaptation: A missed opportunity of scientific knowledge-brokerage. In: Natural Resources Forum 37 (2013) 1–18
- Clar, C. & R. Steurer (2014): Climate change adaptation in a federal state setting: Policy changes in flood protection and tourism in Austria?, in: Österreichische Zeitschrift für Politikwissenschaft, 43/1, 23-47

Process documentation and policy documents

Within the project FAMOUS, we have supported the province of Upper Austria in developing their regional climate change adaptation strategy which has been politically approved on the 8th of July 2013. The Climate Change Adaptation Strategy for Lower Austria was the first one of this kind in Austria.

- Land Oberösterreich (2013): Oö. Klimawandel-Anpassungsstrategie. Direktion Umwelt und Wasserwirtschaft, Abteilung Umweltschutz

In addition, we have accompanied the region of Waldviertel in taking first steps towards adaptation to climate change and provided input document. In addition, the process outcomes have been documented by the Umweltbundesamt.

- Prutsch, A., Balas, M. & N. Glas (2013): Klimawandel: Das Waldviertel passt sich an. Inputdokument für die Diskussion in den Workshops. Umweltbundesamt.
- Prutsch, A., Balas, M. & N. Glas (2013): Das Waldviertel im Klimawandel – Was tun? Gesamtdokumentation. Umweltbundesamt.

Flyer

We have designed a project folder to provide information for decision makers/policy makers working in the field of climate change adaptation and thus could be interested in FAMOUS.

Press conference

The handbook has been presented at the following two press conferences (carried out in cooperation with the funding body Climate and Energy fund):

- The first press conference was held on 12 June 2013 in Linz. At this occasion, the Climate change adaptation strategy of Upper Austria has been presented. It was made explicitly clear that the strategy was developed within this project FAMOUS.

<http://www.klimafonds.gv.at/assets/Uploads/Presseaussendungen/20130612-PA-Famous-fr-OTS.pdf>

http://www.umweltbundesamt.at/aktuell/presse/lastnews/news2013/news_130612/

https://www.land-oberoesterreich.gv.at/cps/rde/xchg/ooe/hs.xsl/111202_DEU_HTML.htm

- The second press conference was held on 14 April 2014 in Vienna. At this event, the final FAMOUS handbook was presented.

http://www.ots.at/presseaussendung/OTS_20140414_OTS0071/klimawandel-trifft-oesterreich-regionen-muessen-handeln-bild

http://www.umweltbundesamt.at/aktuell/presse/lastnews/news2014/news_140414/

<http://oe1.orf.at/artikel/372234>

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Additional media coverage

- Article in NÖN 28/2013 on final conference in Waldviertel.
- News online on OÖ ORF (cf. link: <http://ooe.orf.at/news/stories/2588478/>)

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