

ClimChAlp

Interreg III B Alpine Space

Extended Scientific Final Report

Introduction

25th of March 2008

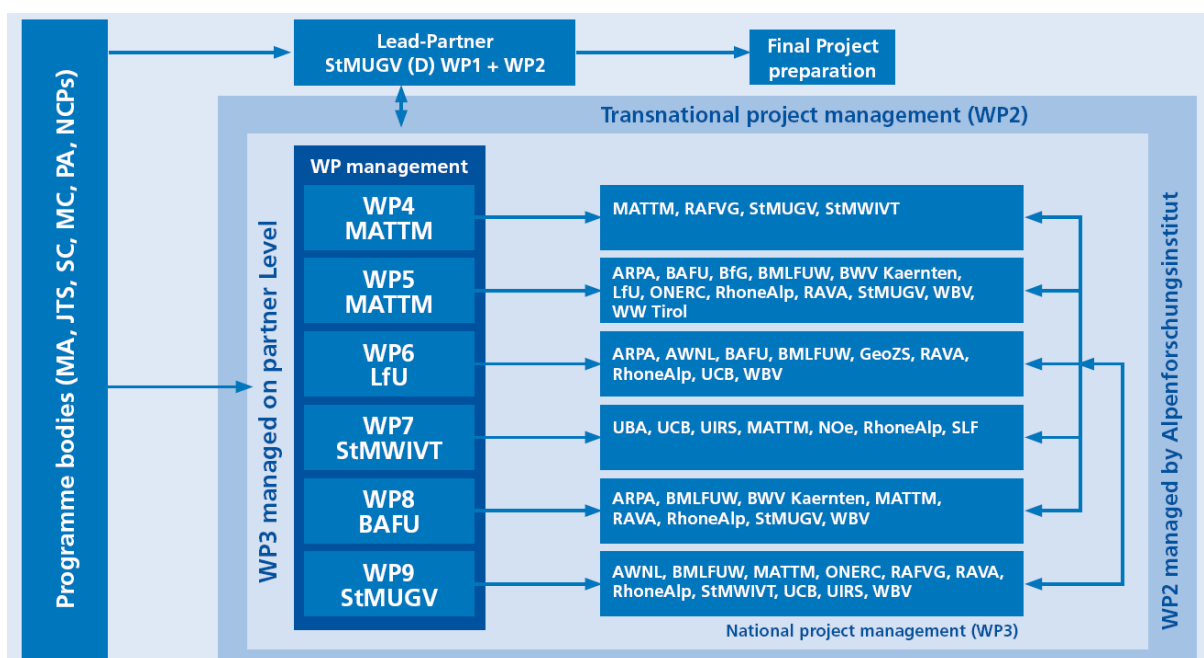


1.1 The ClimChAlp Project

During an ambitious two years work plan, administration authorities, researchers and experts from seven Alpine countries closely cooperated to analyse and highlight the impacts of climate change in the Alpine Space and to elaborate the basis for adaptation strategies. The joint project “Climate Change, Impacts and Adaptation Strategies in the Alpine Space” was initiated by the Bavarian State Ministry of the Environment, Public Health and Consumer Protection.

Preparing the project, a transnational partnership involving 22 partners from a broad range of fields concerned with climate change and its impacts was set up. Finally the strategic project was approved within the last call of the Community Initiative INTERREG III B Alpine Space at the beginning of 2006. It was allocated in Programme Priority 3, Measure 3 – “Cooperation in the field of natural hazards.” The project with a total budget of approximately 3.5 million Euros (ERDF share 1.7 million) ran from March 2006 to March 2008. Beside the technical Work Packages (WP 1 Project Preparation, WP 2 Trans-national Project Management, WP 3 National Project Management), the project comprised following thematic Work Packages:

- Work Package 4: Information and Publicity Activities
- Work Package 5: Climate Change and Resulting Natural Hazards:
- Work Package 6: Monitoring, Prevention and Management of Specific Effects of Climate Change on Nature
- Work Package 7: Impacts of Climate Change on Spatial Development and Economy
- Work Package 8: Flexible Response Network
- Work Package 9: Synthesis and Processing



Besides stating the dimension of climate change and its impacts in the Alpine Space, the main objective of the project was to develop transnational adaptation strategies and measures in the fields of natural hazards, risk prevention, spatial development and economy. To this end, major emphasis was laid on an integrated project approach by closely linking all involved actors and thematic Work Packages from the very beginning.

Based on the main project findings and concrete results of the particular Work Packages, the partners elaborated important transnational recommendations for decision-makers. The proposals, elaborated by the trans-national ClimChAlp expert consortium, address the main challenges related to climate change as well as crucial future fields of action and research fields to be tackled by policy, administration and stakeholders in order to ensure sustainable development in the Alpine Space.

Those conclusions have been compiled in the so called “Common Strategic Paper”. This paper contains the recommendations, listed for each Work Package, also including information on the specific background, Work Package activities and outcomes as well as a short outlook. It is available in English, German, Italian, French and Slovenian language and can be downloaded from the project website www.climchalp.org. A printed copy can be obtained from the project partners.

The detailed scientific results of the single Work Packages have been compiled in the Extended Scientific Final Report (ESFR). Due to the vast amount of informations and because of the file size the ESFR was separated into 4 chapters, according to the structure of the Work Packages. Furthermore Work Package 5 has been divided into a report on Climate Change Scenarios and a report on resulting Natural Hazards. All chapters are available as printable digital pdf file.



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Furthermore, the project partners were supported by a large number of external experts. Their involvement is listed in the particular chapters of the Extended Scientific Final Report.

2. EXECUTIVE SUMMARY OF THE COMMON STRATEGIC PAPER

2.1 Overall Recommendations for Managing Impacts of Climate Change

The aim of the ClimChAlp project was to find ways for the communities in the Alpine Space to cope successfully with the impacts of climate change whilst ensuring sustainable development in the area. Based on the results of the project, the working groups of the transnational ClimChAlp consortium developed the following overall recommendations for policy makers, administration and stakeholders.

- Transnational cooperation in the Alpine Space should be intensified further to allow experiences, knowledge and methods to be exchanged fruitfully between administration, technical authorities and scientists. Continuous and long-term transnational and interdisciplinary cooperation for the development of common tools for risk prevention and management is indispensable, as is the implementation of harmonised adaptation strategies. To be efficient and effective, this cooperation should interlink the experiences and results elaborated in different projects.
- Climate scenarios are a prerequisite for any future activity. Therefore, climate data sets have to be harmonised in terms of temporal and spatial resolution to get more reliable model data for future climate scenarios. Methods for correcting uncertainties in model projections have to be developed and tested to derive regional impact scenarios with a high spatiotemporal resolution.
- Broadening and deepening the knowledge on climate change and its related impacts in the Alpine Space represents the basis for the elaboration of sustainable adaptation strategies. In this context, environmental indicators should be monitored, trends identified and projections for future developments continuously updated using climate scenarios.
- Monitoring zones of already known or presumed slope deformations or other natural hazards (e.g. floods, avalanches, glaciers, debris flows) should be used for identifying critical areas as well as for protecting already existing settlements. This constitutes the basis for a significant reduction in costs for protective structures and damage restoration. Monitoring should be seen as an essential element of prevention. It can be used as an early warning system and ultimately contributes essentially to an integrated risk management. This should be complemented by regionalised sensitivity analysis to identify the areas where particular precautions are necessary in the context of climate change.
- Historic data as a retro-perspective analysis tool should be included for all kinds of monitoring and scenario building. Therefore, adequate databases should be continuously maintained on a transnational level. Transnational cooperation and information exchange should be promoted and data exchange facilitated. Furthermore, detected trends should be validated on a transnational level.
- A common transnational terminology concerning the assessment of risks and harmonisation of different approaches of danger and hazard mapping should be elaborated to enable efficient transnational cooperation. Such harmonisation which follows homogenous minimum quality standards is also postulated by the Alpine Convention. Furthermore, models for intersectoral (e.g. flood, erosion, slope deformations, etc.) hazard mapping should be developed and discussed on the transnational level.
- Hazard maps are still lacking in many municipalities. Comprehensive databases that hold all relevant spatial information on the municipality and sub-local level should be established.

Geographic Information Systems containing land-use, land cover, all available sectoral risk information and binding spatial regulations are the most appropriate tool for this purpose. Such databases allow the detection of climate change-related spatial risks and are the precondition for adjusting and enhancing spatial planning on the local and regional level.

- Risk-oriented spatial planning and risk governance play a key role in the reduction of spatial vulnerability. Thus, it is necessary to develop a generalised, clear conceptual model of regional spatial vulnerability, and to elaborate an operational, transferable methodology for integrative vulnerability assessment.
- Risk communication can be substantially improved by the initiation of a “risk dialogue” between experts, practitioners, administration and the public. Dissemination of information on possible impacts of climate change should be substantially improved on both the political and public level. Through this process, inhabitants and land-owners should be informed about the on-site risks and individual responsibility for risk prevention precautions. Policy-makers should discuss and clarify, in principle, the balance between state and private responsibility for risk prevention, precaution and adaptation, also promoting a direct involvement of insurance companies.
- Raising awareness, transdisciplinary communication and cooperation were identified as key factors for climate change adaptation. Therefore, transnational campaigns on risk management and communication should be implemented to support adaptation actions on the local, regional, national and transnational level. Policy-makers, administration, researchers, associations, NGOs, enterprises as well as the general public should be actively involved in these campaigns.
- Cooperation between science and practice should be improved. Interface management between spatial planners, technicians, industry, leading economic branches and service providers, as well as the police, the army, fire brigades, civil protection and also politicians and other stakeholders should be optimized.
- The transnational Flexible Response Network established within ClimChAlp should be maintained and developed further. Transregional and transnational coordination of natural hazard management techniques should be enforced. Intensifying cross-border cooperation, sharing experience and knowledge on integrated natural hazard risk management at the operational and strategic level is the best way of facing all relevant effects of climate change regarding natural hazards and risks.
- A transnational and interdisciplinary, integrated approach based on natural hazard and risk management and elaborated masterplans (e.g. including local emergency training measures) should be continuously adjusted during and after extreme events. This represents the basis for a sophisticated early warning system. Although this kind of prevention requires adequate financial means and does not show immediate results, it is, in the long run, the cheapest and most sustainable way to save lives and goods, especially in a changing climate.

2.2 Conclusions and Outlook

The ClimChAlp project produced a valuable methodological basis and recommendations for both adaptation to climate change and the further development of effective transnational cooperation in this context.

The ways in which climate change manifests itself in the Alpine Space are as heterogeneous as the region itself. Therefore, in a step by step adaptation plan for the years to come, the results and recommendations elaborated in ClimChAlp should be implemented above all within local and regional adaptation strategies.

The established networks and databases have to be maintained and advanced to enhance knowledge and improve integrated risk management. Further case studies on regional and local level are needed to improve the knowledge of climate change impacts and to transfer new findings into adequate and applicable adaptation measures in the Alpine Space.